

**THE IMPACT OF INFORMATION LITERACY TRAINING ON ACADEMIC
ACHIEVEMENT AND SUCCESS OF THE FIRST YEAR ENTERING
UNDERGRADUATE STUDENTS AT TSHWANE UNIVERSITY OF TECHNOLOGY,
POLOKWANE CAMPUS LIBRARY**

by

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RESEARCH DISSERTATION

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DECLARATION

I declare that the dissertation hereby submitted to the University of Limpopo for the degree of Master of Information Studies has not previously been submitted by me for a degree at this University or any other University, that is, it is my own work in design and in execution and all material contained therein has been duly acknowledged.

.....
Molepo Manamedi Cynthia Signature

Date:

DEDICATION

This dissertation is dedicated to my parents **Matlou Philliah Molepo and Setlakalane Alfred Molepo** and to my two sons **Pule and Elle**. My entire family for their continued support.

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ABBREVIATIONS

ACRL	Association of College and Research Libraries (division of the ALA American Library Association) (USA)
ALA	American Library Association (USA)
ANZIL	Australian and New Zealand Information Literacy (Australia and New Zealand)
CHELSA	Council of Higher Education and Libraries of South Africa
IFLA	International Federation of Library Association
IL	Information Literacy
ILEP	Information Literacy Education Programme
LIASA	Libraries and Information Association of South Africa
NCLIS	National Commission on Libraries and Information Science
OPAC	Online Public Access Catalogue
SCONUL	Standing Committee of National and University Libraries
TUT	Tshwane University of Technology
UNESCO	United Nations Educational, Scientific and Cultural Organization

ABSTRACT

A large number of first year entering undergraduate students at tertiary institutions at Tshwane University of Technology lack skills and competencies for accessing relevant academic information for their assignments and other academic projects they are engaged in. To overcome this problem academic libraries at this institution organise Information Literacy Training Programme (ILTP) to equip students with such skills and competencies. This research investigated if there is any impact that ILTP has among first year entering undergraduate students attached to the Faculties of Humanities and Management Science, who have attended this programme at Tshwane University of Technology, at Polokwane campus. The study adopted both quantitative and qualitative research approaches through a questionnaire and focus group interview respectively to measure the information literacy skills and competencies of first year entering students before and after attending ILITP.

The study sought to measure (a) Students' perception of information literacy; (b) Students' ability to use library resources; (c) Students familiarity with different library resources before and after attendance of the programme. The study found that most of the first entering students had a different perception of information literacy. Furthermore, the student's abilities to use library resources and their familiarity with library resources were very little before they attended the programme. It was only after they attended the programme that they were familiar with some of the library resources and their abilities to use those resources improved. Therefore this study discovered that ILTP has a positive impact of the academic success and performance of first entering students, even though it is minimal.

The study recommends that information literacy education for students should be continuous so that students should not lose focus of what they have learnt in the formal Information Literacy Training Programmes. Furthermore, teaching of information literacy should be compulsory to all first year entering students across all faculties offered at Tshwane University of Technology and this will attach some form of accreditation to them to encourage participation.

KEYWORDS: INFORMATION LITERACY EDUCATION; FIRST YEAR ENTERING STUDENTS; UNDERGRADUATES; ACADEMIC SUCCESS; TSHWANE UNIVERSITY OF TECHNOLOGY; POLOKWANE CAMPUS.

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CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1. INTRODUCTION

People rely on information to function in knowledge-based economy and networked society. As such, information in today's world is being produced at an astonishing rate. Anafo and Filson (2014); Chipeta, Jacobs and Mostert (2009: 47) acknowledge that "technological advancement has resulted in the proliferation and abundant of information to the point that most individuals find themselves with diverse, abundant information choices in all spheres of lives, be it in their academic studies, places of work or their personal lives". Machet (2012: 9) acknowledges that "one of the problems resulting from the large amount of information available today is information overload". This entails that the rate of production of information and knowledge is growing much faster than their consumption. It is therefore of paramount importance that people should have skills for managing and using information effectively in order for them to survive socially, educationally and economically in the knowledge based and networked society.

Along these lines, Virkus and Metsar (2004: 290) acknowledge that education and training are perceived to be the key elements central to the development of knowledge based economies and networked societies. The considerable growth of information and communication technology (ICT), coupled with excessive increase of information resources in both printed and electronic formats have affected many academic initiatives, as well as the lives of staff and students in academic institutions. Academic institutions, as providers of education and training throughout the world, therefore, face an imperative to adapt and adjust to these new changes and developments. If the goal of university education and training is to empower graduates with skills and competencies to function effectively in an information society, then it is of paramount importance that the universities should create educational and instructional spaces that would teach students skills on how to locate and use information effectively. Therefore, one way for academic institutions to adapt to these new changes brought

about by the growth of ICT and proliferation of information resources is to ensure that they produce graduates with skills and competencies for accessing and using information from different sources of information. To become lifelong learners, students do need these skills and competencies. Such skills are known as information literacy skills.

Information literacy has therefore become a new paradigm and the most critical set of skills in today and tomorrow's advanced information and technological world (El Hassani and Nfissi 2015). Julien and Baker (2009: 13) wrote that "information literacy skills are critical for full participation in contemporary Western societies; accessing and evaluating information are basic skills required for success in education work and personal context". Soleymani (2014) also acknowledges that "nowadays, no student can ever pursue the ends of his / her studies unless he /she make use of these skills and competencies". Studies by De Jager (1997:29) and Fitzgerald (2004:19) indicate that students who are not information literate will struggle to, among other task, synthesise ideas from multiple sources of information and this will as a result impact undesirably on the students' academic achievement and success in general. Proficiency to use ICT to handle information appropriately is therefore essential to the academic success and performance of students, not only for their academic undertakings, but for their lives after academic education as well. One may agree that the empowerment of people through information is an important requirement for fostering equitable access to information and knowledge more particularly in the academic environment.

Information literacy is defined as a set of skills and competencies needed to recognize when information is needed, for identifying information resources likely to satisfying information needs, as well as the abilities for searching, retrieving, evaluating and making best use of information (American Library Association 2000). Chipeta, Jacobs and Mostert (2009: 45) show that "Information literacy enables people to interpret and make informed judgments as users of information sources, and also become producers of information in their own right and thereby more active participants in society, and further that it is the basis of lifelong learning". This entails that information

literate students should have the skills and abilities on how to find information, how to evaluate information in order to select the most relevant information, as well as how to make effective use of information obtained. The ability to locate, search, retrieve, evaluate and use information for academic studies and research has therefore always been regarded as the most important skills and competencies needed by students to pursue their academic endeavors in higher learning institutions and in life after education. Therefore, academic achievement and success, as well as life after university education depend largely on these skills and abilities. An information literate student is a lifelong learner, who should possess skills necessary to continually find and evaluate information about new developments in an academic discipline of his or her choice and in life after academic life. Students need information literacy skills to recognize their information needs, distinguish ways of addressing these needs, to construct strategies for locating, and accessing information resources, compare and evaluate information resources, organize, apply, synthesize, utilise and create information (SCONUL 1999:6). In order for them to acquire these skills, students must attend the Information Literacy Training Programme (ILTP), offered by the academic librarians.

It follows that academic libraries are identified as the most relevant structure in the academic environment that must impart these skills to students. According to Idiodi (2005:227), Information Literacy sessions are provided by the library to impart skills and competencies to students which in turn will lead to effective and efficient use of libraries and information resources to achieve better overall educational achievements. Attendance of such education programme allows students to cope with their studies by providing them with the skills needed to recognise when they need information, and where to locate it. The ILTP will also empower students to analyse and evaluate information and provide them with the necessary skills and abilities to use that information in an effective and efficient manner. Zoellner (2016: 241) wrote:

“Information Literacy is valued as an essential learning outcome in liberal higher education, a key intellectual and practical skill necessary for students in all fields to integrate and apply learning”

Esterhuizen and Kuhn (2010:94) state that individual institutions have lamented and expressed their concern regarding the apparent lack of basic IL skills. Previous studies have also expressed the view that students lack the readiness for the information literacy academic learning; hence they are not well prepared for tertiary level studies (Walker, 2001; De Jager, Nassimbeni and Underwood 2007; King, 2007). This is displayed by a huge number of first entering students who enroll at higher learning institutions without the necessary basic information literacy skills needed to make effective and efficient use of information technology and library resources available at their disposal. Carr and Rockman (2003) report that fifty percent (50%) of students in higher education globally fail to earn a degree due to their inability to find and use information effectively. In developing countries like South Africa, this is probably because most first entering students at tertiary level are not exposed to ILEP when they were still at high schools. Zabel (2004: 17) reckons that students rely on internet as a primary source of information for coursework, neglecting library databases and print resources. Obtaining information from Google search engine appears to be the only information retrieval tool that is familiar to and used by most undergraduate students in most institutions of higher learning in South Africa. Rieger (2009) also shares the same sentiment that “statistics indicate that Google has become the search interface of choice for many faculty and students to address their information needs, far exceeding their use of library catalogs or other online citation databases”. This is so, despite the fact that there are a plenty of academic databases and other resources that could be used to access information for studying and learning, but only if they are trained to use them effectively. Subsequently, almost all libraries in academic institutions in South Africa are trying their best to address this challenge or fill this gap by providing remedial ILEP for students’ academic success and achievement.

1.2. BACKGROUND TO THE STUDY

Tshwane University of Technology (TUT) was established on the 1st January 2004. This University is a higher educational institution that originated from a merger of three Technikons in South Africa, namely, Technikon Northern Gauteng, Technikon North-West and Technikon Pretoria. During the time of the merger, the name or designation of Technikon was discarded in favour of the University of Technology hence, Tshwane

University of Technology. TUT has some branches in four of South Africa's nine provinces, namely Gauteng, Mpumalanga, North-West and Limpopo province. According to the Tshwane University of Technology (2016: 5) TUT has seven campuses, namely, Arts campus, Arcadia campus, Pretoria camps, Soshanguve North and Soshanguve South campus and Polokwane campus. The main branch is currently based in Pretoria West.

According to Tshwane University of Technology (2016) TUT enrolls approximately 60 000 students annually and this number of students enrolled with this institution is growing annually. In 2016, that is, the year on which data for this study was collected, the student populace was 59 879, whilst in the current year the total number students registered at TUT is 60 082. This study focuses on Polokwane campus which is based in Limpopo province.

FACULTIES	NO OF STUDENTS FOR 2017
Economics and Finance	714
Information Communication	338
Humanities	572
Management Sciences	1107
TOTAL	2731

Table 1.1 Polokwane Campus current student enrolments for 2017

Currently for Polokwane campus, that is, where this study was based, there are approximately 800 first year entering students who are registered for the academic year 2017 attached to four Faculties namely, Economics and Finance, Information and Communication Technology, as well as Humanities and Management Sciences faculties from which the participants are obtained for the purpose of the current study. The total number of the registered students at Polokwane campus per faculty at all levels is shown in table 1.1 above.

Each of the seven campuses have a library which supports the academic activities of the university by acquiring, organizing and distributing information for study, teaching, learning and research. The Polokwane campus library serves approximately 800 students on a daily basis (Tshwane University of Technology 2016). In addition to books, the library also offers internet access to the library users with computers connected to the Local area network (LAN). The library also subscribes to databases such as SABINET, Ebscohost, Emerald, ScienceDirect, JSTOR, IEEE, etc., for use by staff and students to obtain unlimited access to information for their studies and research activities. It is for this reason that the library also offers ILTP by library staff to ensure optimal utilization of these resources by staff and students.

Therefore information literacy training opportunities have been initiated for students at Tshwane University of Technology. This training or instructional programme seeks to assist undergraduate students, specifically first - year entering and other undergraduate students to achieve academic success at the university and beyond. The ILTP at TUT was initiated in February 2005 by the Library and Information Services Executive Committee (LIS EXCO) when they formulated their strategic and executive objectives for 2005 and beyond (Stoffberg & Blignaut, 2008: 20). The LIS EXCO mandated the Information Literacy Training Committee (ILTC) to design, develop and implement an ILTP at TUT that integrates unlimited access to information resources for the development of students' academic, extra-curricular, personal and career development activities. Subsequently, the Information Literacy Policy (ILP) was drafted and adopted during the Information Literacy Workgroup Strategic Planning Session in the same year, which is in 2005. TUT also has seven campuses, each of which has a library. Each library offers ILTP, which this study seeks to investigate and establish its role in contributing to the academic success and achievement of undergraduate first year entering students at TUT, Polokwane campus.

1.3. THE RESEARCH PROBLEM

Information Literacy education is regarded as one of the most important functions for academic librarians, in collaboration with academic staff (teaching staff) and

administrators. It is an academic library service through which students and other library users are educated and trained in obtaining, managing, and using of information in an academic environment (Joshi & Nikose 2010). It is therefore through attendance of Information Literacy education or instruction that students would learn how to obtain and manage information resources that will be useful in their studies and other academic undertakings. However, academic librarians seem to be experiencing an enormous challenge in as far as convincing and persuading academics or teaching staff to encourage student to attend Information Literacy Instruction. Carr ... et al. (2011) laments that academics provide limited feedback to students about the Information Literacy education, in that they do not tell the students about the resources they have used themselves to access information. Furthermore, they do not assess students' information searching strategies or their ability to critically appraise the information they have found. Nielsen (2013) also laments that one of the main challenges faced by instructional librarians in higher education has been gaining access and appreciation to the very students that they are tasked with educating because there is no formal requirement that faculty devote classroom time to information literacy instruction.

It is therefore contemplated that the main reason for academics not to persuade their students to attend Information Literacy education might be lack of evidence and confirmation from the academic librarians to support their activism on importance of ILEP on students' academic achievement and success. Both research and confirmation of the positive impact of Information Literacy education on the academic achievement and success of students, who have attended such a programme, might be beneficial in convincing the academics and university administrators to take Information Literacy education earnestly. Gledhill (2012) remarks that "measuring the impact of Information Literacy education on student achievement is an uncommon practice and has methodological problems, but if achievable, such a measure would guide the planning and delivery of future sessions and provide further evidence of effectiveness for teaching staff and central services management". It is noted in Webber and Johnstone (2000: 381) remark that "students' view of information literacy, the academics' recognition of information literacy instruction as a significant gap in students' academic performance and success and the students' experiences of

information literacy need to be explored in order to strengthen the curriculum developed and to help in diagnosing of learning difficulties”.

1.4. PURPOSE OF THE STUDY

1.4.1. Aim of the study

The aim of this research was to establish whether of Information Literacy Training Programme (ILTP) offered at Tshwane University of Technology (TUT), Polokwane Campus library services has a positive impact on the academic achievement and success of first-year entering undergraduate students who have attended the programme.

1.4.2. Objectives of the study

- To understand the undergraduate first-entering undergraduate students’ perspectives of the concept “Information Literacy”;
- To measure the first-entering undergraduate students’ information literacy competencies and skills before attending the ILTP at TUT, Polokwane campus;
- To measure the first-entering undergraduate students familiarity with library information resources after having attended ILTP at TUT, Polokwane Campus;
- To understand the students’ motivation for library usage after attending the ILTP; and
- To understand experiences and attitudes of students towards the ILTP at TUT, Polokwane Campus.

1.5. DEFINITION OF KEY CONCEPTS

The key terms and concepts that frequently appear in this study are defined and described below.

1.5.1 Academic Library

An academic library in this study is defined as library that is attached to a higher education institution which serves two complementary purposes, namely, to support the school's curriculum, and to support the research of the university faculty and students. The main function of any university or academic library is to support the educational and developmental goal of the university by acquiring, organising and disseminate materials for study, teaching, research and community engagement. TUT Polokwane campus library is used as a case study in this study because is the place of employment of the researcher.

1.5.2 Academic performance

Academic performance is the ability of students to study and remember facts and being able to communicate their knowledge verbally or down on paper in an academic environment. Furthermore, it is the way the students will perform academically in their academic undertakings after attending the Information Literacy training session.

1.5.3 Academic success

In this study, academic success refers to students achieving academic goals or students succeeding academically after attending the Information Literacy training sessions. Academic success should include the tertiary institutions' expectations for being in good standing and making satisfactory progress toward a degree or diploma. In this study the students will identify success goals to work towards what they want to achieve during their undergraduate years of study at TUT Polokwane campus. Library Information literacy offered in this regard is a resource that will support the students' academic success.

1.5.4 Training Information librarian

In this study, the information librarian refers to a librarian who provides service for a faculty or department and liaises with the academic staff and students in that faculty or department. The librarian in this study will liaise with students and staff to gather

academic information relevant to their academic projects. The role of Information librarians is essential in implementing information literacy programs which are promoting learning and making specific contribution to the learning process occurring in various platforms of academic institutions.

1.5.5 Information Literacy

In most cases, people confuse Information Literacy with computer literacy. Computer literacy emphasises the ability to use software or computer applications to access information, whereas information literacy is more than that. Information literacy not only requires knowledge and use of computers to access information, but involves handling, evaluating information and even using it effectively. Bundy (2004:3) defines Information literacy as a set of abilities enabling individuals to recognise when information is needed and have the ability to locate, evaluate and use effectively the needed information. This is the context in which this concept will be used in this study.

1.5.6 Information Literacy Training Programme (ILTP)

Information Literacy Training Programme (ILTP) refers to a prescribed set of training modules which the students should attend in order to be information literate. In this study, there are training modules which make up the ILTP and the researcher will only concentrate on Information Literacy education as offered at TUT, Polokwane campus, and not at any other campus or university. Other institutions refer to this programme as Information Literacy Education and others as Information Literacy Instruction Programmes. Therefore, in this study the concept Information Literacy Training Programme, will be used interchangeably with Information Literacy education or Information Literacy instruction. The concept Information Literacy Training Programme is used when reference is made to the training offered at TUT, while Information Literacy education or instruction are used when reference is made to any education or instruction other than the one offered at TUT.

1.5.7 Undergraduate student

An undergraduate student is one who is studying for the first (Bachelor's) degree, or a certificate or diploma at tertiary institution. This refers to the first year entering undergraduate students of TUT who will participate in the study. These first year undergraduate first year students were chosen because they were not exposed to information literacy training programme at high school level, therefore the researcher was interested in that transition of looking at the information literacy gap between the university and high school. Once more, these students have common element of being fresh from high school.

1.6 SIGNIFICANCE OF THE STUDY

There are a number of benefits that this study seeks to accomplish, and they are discussed hereunder:

1.6.1 Creating awareness

The researcher's experience as an information training librarian reveals that most of the academics take IL training lightly. They do not encourage their students to attend IL training sessions, whenever the library requested them to do so. This study therefore seeks to demonstrate to these academic staff the positive impact that IL training can have on the academic performance and success of the students if they persuade them to attend the IL sessions. In this regard, the lecturers or academics have to be made aware of the benefits of attending information literacy education. This awareness, its importance thereof, will ensure that they encourage their students to attend Information Literacy Training sessions offered by university or academic libraries.

This study associates the academic achievement and success of students to attendance of information literacy training. It is envisaged that the outcome of the study will be made available to academic staff and university management so that they should realise the positive impact of IL training on academic performance of students. In this regard, this study will serve as evidence about the importance of IL programmes

on academic achievement and success of students to academics and university management.

1.6.2 Integration of IL training into the curriculum

This study also serves as an attempt to persuade the university management to accede to the persistent lamentation by training information librarians to integrate Information Literacy modules into the academic curricula. It is envisaged that the outcome of the study will be made available not only to academic staff, but to the university management and library management as well, so that they realise the importance of IL training on the academic performance of students. Once they realise this, they will be in a position to advocate and even enact, for the integration of the IL training into their academic curricula. It has been realised that most students are only interested in modules that would contribute towards their marks in their studies. Students do not take modules that do not contribute to their marks seriously. In this regard, IL training could be conducted as a credit bearing course. Furthermore, Snavelly and Cooper (1997:9) state that the librarians implementing this information literacy programmes will indeed be promoting learning and they will be making a specific contribution of the learning process, one which complements other parts of the learning process occurring in classrooms, residence halls and other parts of an academic institution.

1.6.3 Evaluation of Information Literacy training course content

Another aspect which this study seeks to achieve was to assess if there are any deficiencies with regard to the ILTP or instruction offered at TUT, Polokwane Campus. The course content, the structure of the programme and the mode of delivery and assessment methods used in the IL education at TUT was analysed during this study. This study also seeks to propose possible better strategies, that is, if there are any deficiencies in the current strategies. If no deficiencies are identified, possible strategies to sustain and improve the programme are also suggested.

1.6.4 Producing life-long learners

Today's information society is characterized by the most important learning outcome for all students, that is, being able to function as independent and lifelong learners. This study is therefore motivated by the desire to produce lifelong and independent learners or students. The majority of students, not only at TUT Polokwane campus, tend to approach information librarians with requests for information for their assignments and research projects, which they could otherwise do on their own, if they had attended the ILTP. Therefore, it is necessary for the library to offer IL training so that student-library users are empowered with information skills to be able to use any library resources anywhere in the world and on their own, that is, without the help of librarians.

1.7 RESEARCH METHODOLOGY

The research methodology in this study involves the procedures and methods that were followed in this study to collect and analyse data regarding the impact of IL training on the academic success and achievement of students.

1.7.1 Research approach

This study used both quantitative and qualitative of which the latter sought to measure the perceptions, skills and competencies of students before attending ILTP, whilst the former was adopted to collect in-depth information about the experiences and attitudes of students with regards to the Information Literacy instruction session that they have just attended.

1.7.2. Research design

The study used the case study, phenomenological study and descriptive survey designs to understand the students' perspectives of the concept "Information Literacy"; measure the students' information literacy competencies, their motivation for using the academic library resources and services after attending the ILTP; as well as their

familiarity with academic library information resources and services before attending and after having attended the ILTP.

1.7.3. Population

The population for this study consisted of first year entering students from the faculties of Management Sciences and the Humanities at Tshwane University of Technology, Polokwane campus. These faculties were specifically chosen as the researcher has developed close working relationship with these faculties with regards to provision of ILTP.

1.7.4. Sampling

The sampling method used for selecting participants in this study was systematic random sampling, where participants were selected by picking the ones who are counted on third interval from a list of 410 students who registered for the 2016 academic year. These 410 students were obtained from the Information literacy training register. The total number of participants was therefore 192 students. The study also used purposive sampling whereby students who performed well in their first assignment were selected, to establish their experiences and attitudes with ILEP after attendance.

1.7.5. Data collection method

A questionnaire that was distributed to students before the attendance of ILTP was completed by systematically selected students who were to attend the programme in order to establish their perceptions of IL, as well as their IL skills and competencies before attending ILTP. This was followed by the focus group interview with purposively selected students to establish their experiences and attitudes of the ILTP afterwards.

1.7.6. Data analysis and presentation

Quantitative data was presented in the form of bar graphs and tables and analysed descriptively, whilst qualitative data was transcribed and analysed by categorizing respondents' responses into themes (thematic analysis).

1.7.7. Ethical considerations

Before data was collected, there were some ethical considerations that were adhered to, of which the details will be provided in chapter three of this research report.

1.8 OUTLINE OF CHAPTERS

The layout of chapters in the research report is indicated hereunder:

Chapter one provided the background on which this study was developed. The statement of the problem, aim and objectives, as well as significance of the study were discussed in this chapter to introduce the reader to the main focus of this study. The context, in which the concepts that frequently appear in the study are used, have also been defined in chapter one, together with the brief outline of the methodology used in this study.

Chapter two is comprised of the relevant and related literature on which this study is based. The literature review indicates what and how much has already been researched and written about the topic. Literature review will help to align the available literature to the current research problem and objectives. Successful research therefore, depends largely on a well-planned and thorough review of relevant literature available and as such, a review usually entails obtaining useful references or sources. The theoretical framework on which this study was based and also discussed in this chapter.

Chapter three provided and discussed in detail the research methodology that was used for data collection in this study. This comprise of the research approach, research design, as well as data collection methods and procedure. The population, as well as the sampling method that was used in this study is also discussed in chapter three. This chapter, therefore, covered how questionnaire as the research instrument was used in data collection, as well as how these data was analysed.

Chapter four is comprised of data analysis and presentation.

Chapter five provided and discussed summary, conclusions and recommendations. This part sums up the study conducted by suggesting ideas for consideration. This is then followed by a list of references consulted for the study in order to acknowledge these resources.

CHAPTER TWO

LITERATURE REVIEW

2.1. INTRODUCTION

After having introduced the problem that will form the essence of this study, it is now necessary to look into the previous literature related to the objectives of this study as well as to introduce the theoretical framework on which this study is based. Hart (1998:1) notes that a review of literature is important because without it, one will not acquire an understanding of the topic, of what has already been researched on it, how it has been researched, and what the key issues surrounding the topic are. Literature review helps in bolstering confidence that the research topic is one worth studying, because one finds that others have invested considerable time, effort and resources in studying it. Leedy and Ormrod (2005:66) also state that review of literature describes theoretical perspectives and previous research findings regarding the problem at hand, while Vithal and Jansen (1977:16) emphasize that literature review demonstrates that the researcher has read extensively and intensively about the topic if it is indispensable for the credibility of a well-written, informed thesis. Furthermore, a literature review needs to draw on and evaluate a range of different types of sources including academic and professional journal articles, books and web-based resources. It helps in the identification and location of relevant document and other sources (Rowley 2004:31). Successful research depend on a well-planned and thorough review of the relevant literature available. As such a review of literature usually entailed obtaining useful sources (Brynard & Hanekon, 1997:31). Therefore, this chapter focuses on the literature that was relevant to the topic under discussion. In this chapter literature concerning students' academic performance and success, the IL programmes in academic libraries, IL challenges, and theories of IL are discussed.

2.2. THEORETICAL FRAMEWORK

Before coming to detailed literature review, it was necessary to discuss in brief the theoretical framework on which this study is based. There are several and various

theoretical framework and models that have been propagated by different authors, theorists and academicians. Punch (2005:53) defines the theoretical framework as a representation, either graphically or in narrative form, of the main concepts or variables, and in their presumed relationship with each other. He explains that the theoretical framework is usually best shown in a diagram. Information Literacy as a phenomenon has also been explained through a variety of models. Ocholla & Le Roux (2011:1) also support Punch (2005:53) in that the theoretical framework of a study is the structure that holds and supports the theory of a research work. It serves as the lens that a researcher uses to examine a particular aspect of his or her subject field. Whereas a model can be used flexibly by individuals and teachers who can adapt it to. Models can be described as theories with a more narrowly defined scope of explanation; a model is descriptive, whereas a theory is explanatory as well as descriptive (Frankfort-Nachmias & Nachmias: 1996).

This study is based on the Model, rather than on a theoretical framework. Information Literacy education as a concept has been studied from the perspectives of different models. These include information search and use models, and examples of such models are:

- The Seven pillars of Information Literacy (SCONUL 1999)
- The Big6 Skills (Eisenberg and Bob Berkowitz 1990)
- Information Search process (Kuhlthau 1993)
- Research Process Model (Stripling and Pitts, 1988)
- Pathways to Knowledge (Pappas and Tepe, 2002)

Chipeta (2010) provides a detailed account of the relationship between the above – mentioned IL models. However, the model behind the Information Literacy education for the current research is Seven Pillars of Information literacy by the Society of College, National and University Libraries (SCONUL). The SCONUL Working Group on IL published “Information skills in higher education: a SCONUL. This model is used because different levels of information literacy are closely related to what is entailed in this Models as explained below.

2.3. SCONUL INFORMATION LITERACY MODEL

The SCONUL paper of information skills in higher education (1999:8-9) and (2011:4) identified the seven skills and competencies needed in order for a learner to progress from being a competent information user to a person with more advanced level or reflection and critical awareness of information as intellectual resources. Webber and Johnston (2000: 384) show that the seven areas of IL provide a progression from the most basic skill (ability to recognise the need for information) to the most sophisticated (ability to synthesise and build upon the existing information, contributing to the creation of new knowledge). Therefore the Seven Pillars model has seven competence levels that include:

- the ability to recognise a need for information;
- the ability to distinguish the way in which the information may be addressed;
- the ability to construct strategies for locating information; the
- ability to locate and access information;
- the ability to compare and evaluate information obtained from different sources;
- the ability to organise, apply and communicate information to other ways appropriate to the situation; and
- the ability to synthesise and build upon existing information, contributing to the creation of new knowledge (SCONUL 1996: 6).

Alongside seven pillars of information literacy skills it is expected that as a person or student becomes more information literate they will demonstrate more of the attributes in each pillar and so move towards the top of the pillar, namely, novice, advanced beginner, competent, proficient, expert and then information literate or life-long learner.

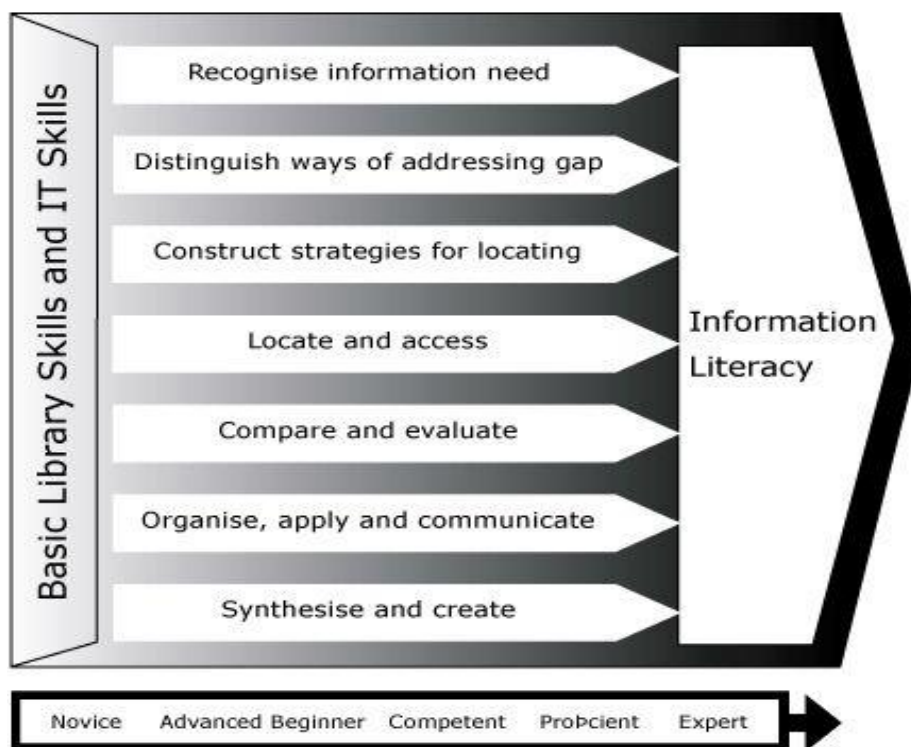


Figure 2.1 SCONUL – Seven Pillars of Information Literacy (Adopted from SCONUL 1996)

In addition, for a person to be more information literate, he / she must also possess both library skill and information technology skills. Therefore, information literacy is related to Information Technology (IT) skills. IT skills enable the individual to use computers, software applications, databases, and other technologies to achieve a wide variety of academic, work-related and personal goals (Association of College and Research Libraries 2000). Bainton (2001) says that both information literacy skills and IT skills are essential parts of a wider concept of information literacy. Furthermore, each pillar is described by a series of statements relating to a set of skills/competencies and a set of attitudes/understandings and headlines, namely, identify, scope, plan, gather, evaluate, manage, and present (SCONUL 2011). This is depicted in figure 2.2 below, whilst table 2.1 attempts to explain what these set of skills, competencies and attributes entail.

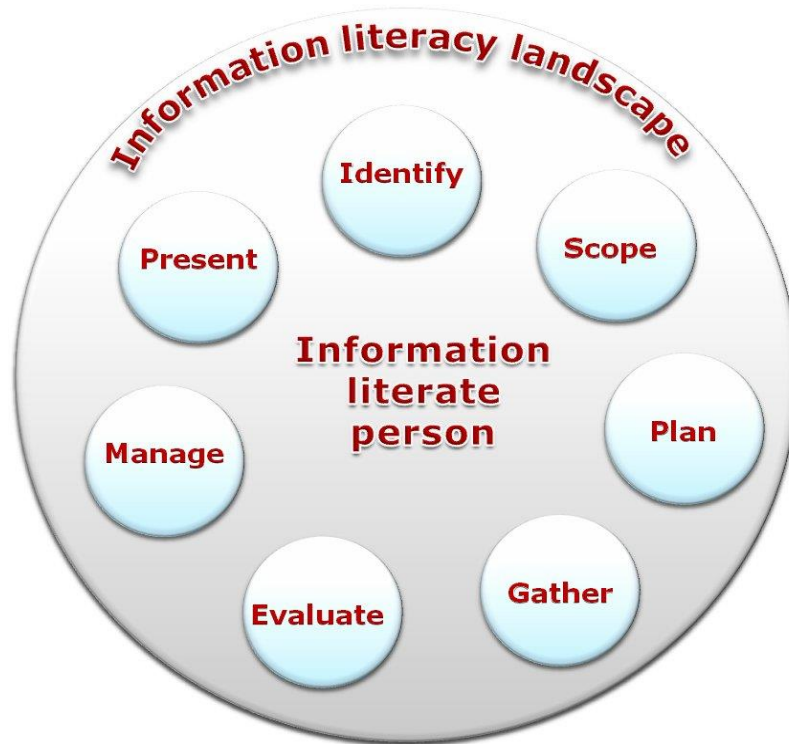


Figure 2.2: A diagram depicting the attributes of an information literate person (Adopted from SCONUL Working Group on IL 2011).

These headlines in figure 2.2 and table 2.1 that represent Seven Pillars of information literacy are relevant to this study because they are essential to result in an information literate students, specifically focussing on the academic assignments and projects that students are given in class. Firstly, when students are given an assignment, they should be able to recognise that they have an information need and be able to articulate that information need clearly and unambiguously. Gledhill (2012) suggests that students should be able to analyse an assignment question to determine what information is needed. This involves identifying and understanding the main concepts and developing an effective range of keywords to use as search terms.

Chipeta (2010: 24) notes that at this stage, the student should become aware of his / her lack of knowledge necessary to accomplish the assignment, followed by the feelings of uncertainty and apprehension, generated by what might be required to complete the assignment.

SCONUL pillars of Information literacy	Information literate student
Identify	Show what an information literate student should be able to identify when faced with an information need.
Scope	An information literate student should be able to establish an extent of the information need.
Plan	An information literate student should be able to identify the resources that are likely to fulfil his / her information need and develop a strategy of how to exploit them to obtain the needed information.
Gather	An information literate student should be able to gather relevant information
Evaluate	An information literate student should be able to evaluate results of the information gathered in order to meet his information need. More so looking at the authority issues, the peer review process of scholarly publishing and appropriate extraction of information matching the information need
Manage	An information literate student should be able to manage and organize information gathered professionally and ethically.
Present	An information literate student should be able to apply, present and use the information gathered in an academic manner and disseminating it in a variety of formats.

Table 2.1 - SCONUL Seven Pillars of Information Literacy

This state of confusion and incoherence will then drive the student into information seeking action, in order to address the problem as perceived by him or her, by discussing with others such as peers and experts, or browsing different information

sources. As the student browse through information sources and discuss with peers and experts, uncertainty and confusion gradually diminish and he /she able to formulate a topic which he /she should be able to articulate clearly.

Secondly, students should be able to identify resources, either in print or electronic format that are likely to meet the information need or to accomplish a research task. He or she should select the information sources that best answer the assignment question. Students should know where and how to search for books and where to search for journals if they want to fulfil a specific information need. Therefore, awareness of library catalogue and indexes in the form of Online Public Access Catalogue (OPAC) and electronic or online databases respectively is essential. A student should be able to conduct a pre-search in order to make a connection between his /her topic and the knowledge that he / she already has regarding the topic (Pappas & Tepe 2002).

Thirdly, the student should be able to ask questions the right way to an information system, so that he /she should not end up either with too many or too few research results (Machet 2012: 100). The ability of a student to retrieve relevant information depends on the knowledge appropriate use of search commands to retrieve relevant information is therefore essential. Knowledge of Boolean logic operators (AND, OR and NOT) truncation marks, proximity operators for databases and search engines, as well as other search techniques will be required for a student to retrieve relevant information.

Fourthly, from the information retrieved, the student should be able to use the criteria for evaluating information so that they should be able to select information which is relevant to his / her information need. Knowledge of information evaluation criteria such as authority, currency, objectivity, authenticity and accuracy of information for both printed and electronic information sources is also important. Chipeta (2010: 26) advises that the student should be aware of bias and authority issues, as well as the methods or criteria for establishing the quality and relevance of the search results. Fifthly, the student should be able to use and manage information professionally and

ethically. Being able to interpret a bibliographic citation of an information source is one of the skills that a student need to have at this stage. Avoiding plagiarism by citing bibliographic references using different methods of referencing, as well as ensuring confidentiality and privacy of the information used is also essential at this stage. The student should be aware of the political, socio-economic, cultural, and legal issues surrounding the use of information. Gledhill (2012) makes mention of using the information in a responsible and ethical way through appropriate citations.

The last competency is about being able to present information in the form of an assignment or presentation in class, for the sake of creating new knowledge. Synthesising or bringing available information together and relate what he / she has learned to what he / she already knows. Basically for the students who have been given an assignment, the task would be to complete the search and submit the assignment for marking. Looking at all these stages Webber and Johnston (2009: 382) also concludes that information literacy revolve around need recognition, search information, source selection and interrogation, information evaluation and information synthesis and use. Therefore an information literate student is “the one who has analytical and critical thinking skills to formulate search questions and evaluate results and the skills to search for and access a variety of information types in order to meet his or her information need” (Webber and Johnston 2009: 382). Carr and Rockman (2012:53) wrote:-

“The goal of IL should therefore be helping students to formulate an information need, how to carefully select and evaluate information, how to communicate information to other, and how to use information responsibly by acknowledging the work of others giving credit appropriately, citing information correctly and using information ethically and responsibly”.

2.4. THE NATURE AND HISTORY OF INFORMATION LITERACY

There are different views regarding the nature and history of the concept Information Literacy. Bundy (2004) shows how different international and national organisations developed the concept, while Johnson and Webber (2003) explain the concept by

showing its relationship with information Science and bibliographic instruction. The same sentiment is shared by Behrens, in De Jager and Nassimbeni (2002:167), who point out that this concept gradually started to replace the concept of user education, bibliographic instruction and library skills in the 1980's.

Information Literacy is viewed as a global phenomenon with strong efforts and examples in Northern America, Australia, and Northern Europe as well as in South Africa. According to Bundy (2004) there are several frameworks and models that have been developed, regarding the phenomenon of "Information Literacy" in different countries by both international and national bodies. International bodies include the United Nations Economic, Social and Cultural Organisation (UNESCO) and the International Federation of Associations and Institutions (IFLA 2006). The national bodies in most countries are the Association of College Research Library (ACRL 2000); the American Library Association (ALA); the Australian and New Zealand Institute for Information Literacy (ANZIL); and The Society of College, National and University Libraries (SCONUL, 1999). According to ACRL (2014:1), a Task Force worked on the revised framework document on Information Literacy for Higher Education (Baro & Zuokemefa, 2011:550). At present the ACRL (2015) came up with the new framework for Information Literacy for Higher Education which is based on cluster of interconnected concepts. The framework is organised into six important frames as it is stated in the report of ACRL. Each frame is consisting of a concept central to information literacy, such as a set of knowledge practices and dispositions. The six concepts that anchor the frames are presented alphabetically as follows:

- Authority is constructed and contextual
- Information creation as a process
- Information has value
- Research as Inquiry
- Scholarship as conversation and
- Searching as strategic exploration.

These six concepts brought up the definition of information literacy as

“A set integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning (ACRL, 2015)”.

This framework play a very essential role because is way of collaboration between the librarians, faculties and other relevant stakeholders with regard to the curriculum in the institutions of higher learning. The abovementioned stakeholders will benefit more when the future improvement of the existing IL programmes in case there are any deficiencies.

According to Behrens (1994:310; Johnston & Webber 2000: 382), it was Zurkwoski who introduced the concept of “Information Literacy” in his proposal to the United States (US) National Commission on Libraries and Information Science in the early 1970’s. This concept was introduced in a proposal submitted to the National Commission on Libraries and Information Science (NCLIS) in the United States, recommending that a national programme be established to achieve universal Information Literacy. On the other hand Johnston and Webber (2003: 336), point out that there are two areas that have been particularly influential to IL in the university setting. These areas are information science and bibliographic or library instruction. The latter is a discipline that provides the theoretical underpinnings of the various aspects of Information Literacy, while the former is a process of educating library users about the various resources available in libraries. Information science also equips library users with the skills necessary to utilize information resources available in the library.

When we look at the current trends of IL training in South Africa and internationally, it is fundamental to understand the history behind this programme. Petermanec and Mulej (2008:5) hold that the involvement of libraries in IL training started two centuries ago, and was progressively completed and adapted to the needs and possibilities that it was proving for itself, and sought its place in the environment to which libraries

belong. Idiodi (2005:225) contends that the scientific and technological exploration of the late 20th century subsequently gave birth to the concept of “Information Literacy”, while others have championed it as the key competency of the twenty first century.

According to Zinn (1997), Hart (1999), Walker (2001), Probert (2009), and Williams and Wavell (2006) a lot of studies have been conducted about Information Literacy. Esterhuizen and Kuhn (2010:83) state that the Committee for Higher Education Librarians in South Africa (CHELSA) developed a national framework for IL training for South Africa. This policy framework for IL training in tertiary institutions is derived from three policy domains namely, education policies, Information Communication Technology policies and Library and Information Services policies. With regard to the education domain, the National Commission on Higher Education’s working group on library and Information Technology (1996:48), in their report to the government, highlighted the role of Information Literacy stating that IL is an integral part of the profile of a lifelong learner and, given the diversity of the student population, IL programmes are necessary.

The LIS sector, which uses the term Information Literacy, tends to stress academic achievement. In order to promote IL, the National Council for Library and Information Services was established by an Act of Parliament – (Act 6 of 2001). The Information Literacy (INFOLIT) project was launched at the University of Cape Town in 1996. The Library and Information Association of Southern Africa (LIASA) also plays a major role in placing Information Literacy and User Education on the map so that all academic institutions in South Africa offer IL to students (Esterhuizen and Kuhn, 2010:109). However, information literacy initiatives in higher education have taken a variety of forms such as stand-alone course or classes, web-based tutorials, course-related instruction or course –integrated instruction.

Therefore, IL as a concept has undergone a number of adaptations to keep it current and relevant. Although evident in the literature since the 1970s, the concept of

'information literacy' gained popularity in the 1990s with the development of the internet and explosion of information sources in both printed and electronic format. Being able to access and search information through the internet and using it correctly constituted "information literacy". In 1989, the American Library Association (ALA) developed a six-stage model for defining the term Information Literacy. The committee tasked with investigating information literacy proposed that an 'information literate person' would 'recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information. Therefore, almost all the definitions of information literacy presented over the years can be summarized in three activities, including the ability to:

- locate and gather information,
- analyse and critically evaluate information,
- use information effectively and in an ethical manner

Finally, all the stages including, recognizing information need, retrieving, evaluating, using and disseminating of information to acquire or extend knowledge came be regarded as the core competencies for information literacy. As such information literacy has at times been seen as including computer-related literacies. From these statements in the late 1980s/early 1990s information literacy developed to include an ethical dimension ('knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner' (SCONUL 1999).

The above-mentioned skills have therefore been described by several authors as the core literacy for the twenty-first (21st) century information user. IL has come to underpin all other forms of literacies such as study, writing, and communication skills in order for people to achieve their educational, social, occupational and economic goals (Lloyd & Williamson 2008: 3). Subsequently, there are a number of research that have been elsewhere and in South Africa in relation to the concept of "Information Literacy" in educational context, in workplace settings as well as in community settings. This study

looks at this phenomenon in the context of educational settings, particularly in an academic or university libraries

2.5. INFORMATION LITERACY AND ACADEMIC LIBRARIES

Lwehabura and Stilwell (2008:180) state that in an academic context, IL supports, promotes and enhances teaching and research, and creates a learning culture that encourages institutions to produce graduates with the capacity and desire for lifelong learning. Information Literacy includes the provision of high quality information skills and has become an essential element in academic libraries. Castro (2002:30) claims that students arrive at information-rich academic libraries without knowledge of electronic databases, online catalogues, web sites, and other multimedia. They do not have any information skills to manipulate these resources in order to acquire information for their academic undertaking. According to Atkins (2002:41), information which is available on the internet and electronic databases is vast and thus students need initial training and assistance to utilise it effectively. Furthermore, libraries will improve the challenges which the students face because they have accepted the provision of advancing Information Literacy programmes on their campuses (Rockman, 2002:189).

IL training requires sustained development at all levels of formal, primary, secondary and tertiary education (Bundy, 2012:6). This means that as students' progress through their undergraduate years and graduate programmes, they need to have opportunities for seeking, evaluating, managing and applying information gathered from multiple sources and from discipline specific research methods. It is therefore essential to have collaborative efforts between information training librarians and lecturing staff in tertiary institutions. Harley (2001:301) acknowledges that teaching IL and critical thinking to undergraduate students can be more successful if these concepts are demonstrated to be meaningful and valuable in the context of their daily lives. The researcher agree with the statement above because students struggle with finding, managing and evaluating information about recent research and this suggests that

teaching information literacy to students will remain an important role for librarians, but they do need to ensure that there is sufficient take up of the services they offer.

According to Gross (2005:159), IL is essential to students because when they master the skill, their research assignments will improve; they will be able to perform self-directed searches; their personal control will be accomplished; and they will improve their performance in general. Furthermore, students should be given the opportunity to practice IL in order to enhance their information skills. The library should therefore create a welcoming environment that can play a significant role in the academic success of students. Grafstein (2002:201) posits that generic information skills are necessary in order for students to achieve information skills. The skills include searching and information retrieval skills which include the realization of the need for information, the formulation of search strategies and location of information.

Another essential skill is critical thinking which includes evaluation skills of sources of information which the students will locate for use. Whitmire (1988) is of the view that critical thinking is the ability to identify central issues or assumptions in an argument, eliminate useless information, evaluate the credibility of an information source, evaluate evidence of authority, provide support for conclusions, and to interpret whether conclusions are warranted on the basis of the data given.

2.6. CHALLENGES AND OPPORTUNITIES STUDENTS FACE WITH INFORMATION LITERACY

Reflecting on the initiatives of the past years on information literacy, it is clear that undergraduate students lack and have limited knowledge on how to access information using databases, internet websites, search engines etc. Students rely much on Google search engine and the Wikipedia. During the transition from high school to undergraduate level at tertiary institution, the researcher supports the statement above and indicate through her when training the students they agree that they do not use the relevant research processes but they rely heavily on Google and

Wikipedia and they cannot differentiate between books, articles and peer reviewed journals articles. Kolowich (2011) state that student usually are unable to distinguish between monographic and serial publications. Avrelli and Lewis (2013:114) further indicate that students do not use search strategies or mechanisms available to them to locate the reliable sources that will assist them in their assignment writing project. These students are unable to find cited sources and how to appropriately cite sources they consulted.

When introducing information literacy in early years and build on them as the students advances through to tertiary level and introducing new concepts of knowledge-seeking will be best if it is implemented. This will enable the students to understand the role and impact that it will make for their academic success. Hancock (1993:5) state that information literate students are more effective consumers of information resources as they learn to recognise that information is packaged in a variety of ways. These students will be more critical when they make decisions about the resources they use.

2.7. INFORMATION LITERACY ASSESSMENT AND EVALAUTION

Assessment should be seen as an intrinsic part of learning and teaching continuum (Webb & Powis 2004:128). Furthermore, it is the way that IL trainers test whether their learning outcomes have been achieved. Zoellner (2016: 242) notes that “librarians have employed multiple methods such as student surveys, pre-and post-instruction tests, and observations to assess information literacy competencies. It takes place through learners doing practical work and the trainer giving feedback to then on their performance. There are two types of assessments, namely formative assessment and summative assessment. The former takes place at the conclusion of the learning experience in the form of an exam or some test, while the latter always takes place while students are doing the course (Webb & Powis 2004: 129).

Wong and Webb (2011:4) mention that there are many published articles that focus on the creation and design of assessment tools that will more effectively and reliably

measure skills in students who participate in library-initiated instruction efforts. Furthermore, Dewald, Scholz-Crane, Booth and Levine (2000:40) state that when selecting an assessment method, one should first review the teaching / learning objectives and then select one or two of the objectives for assessment purposes. When measuring students' learning outcome, they should be given real world problems and be encouraged to reflect on their own problem solving procedures. The following areas, according to Dewald et al. (2000:40), are considered vital in the examination of assessment:

- Prior knowledge to gauge whether learning is progressing.
- Synthesis skills – assessing students' capacity for synthesising course content.
- Critical thinking skills for analysing and evaluating problems.
- Problems solving skills.
- Application skills.

The abovementioned areas provide a picture of the students' progress of learning because the researcher will have knowledge of the students' level of literacy in advance, before the actual IL training commence. In this regard the researcher will apply the skills relevant to their level of literacy. The results of the assessments outlined in the standards and guidelines document can be used within the library to raise awareness of the strengths and weaknesses of current library services to undergraduates (College and Research Library News, 2014:95). The following possible assessment tools are recommended:

- Pre-tests offered to first year students or students who are attending Information Literacy programmes in order to produce more information-literate students with effective research skills.
- Evaluation of the checklists for instruction in all forms to gather feedback from students.
- Journal entries or Information Literacy diaries used to track students library use.

Walsh (2009) has reviewed a number of assessment methods used by librarians to assess information IL sessions such as citation analysis of bibliographies, portfolio, essays, multiple choice questions, questionnaires, observations, quizzes / tests, simulation, self-assessment etc. Therefore, there are many tools which can be used to assess information literacy. According to Airasian and Russel (2008:223 & 224) rubrics refers to a set of clear expectations or criteria used to help teachers and students focus on what is valued in a subject, topic, or activity. Furthermore they mentioned that a rubric includes both the aspects and characteristics of a performance that will be assessed and a description of the criteria used to assess each aspect.

With regard to assessment by portfolio, students need to build portfolios to demonstrate what they have learned in order for the researcher to monitor their progress. These portfolios allow students to become active participants and evaluators of their own learning. According to Paulson... et al (1991) a portfolio is a purposeful collection of students' work that exhibits the students' efforts, progress or achievements in one or more areas. Lockhart (2015) used a pre-test and a post –test assessment method to measure the effectiveness of ILEP at Cape Peninsula Technicon. The students were given an online multiple-choice questions before the teaching intervention. After the training intervention after five weeks, the students completed an online multiple choice summative assessment with the same questions to enable the trainer to make accurate comparisons. After that the score for both pre-tests and post-test were compared to see if there were any improvements that were realized.

Reflecting on the effectiveness of ILTP should also be a natural part of training process and assessment of the programme. Therefore, obtaining structured feedback to evaluate the ILTP should aid this reflection (Webb & Powis 2004: 156). Once feedback is collected, it also needs to be evaluated to measure impact. By evaluating impact, an attempt is made to explore changes in attitudes, behaviour, motivation self-perception, economic benefit and the perceived value of use of libraries and information services. This implies that attendance of ILTP by student can effect changes in skills, competencies, attitudes, and behaviour of its users.

There are various interventions which took place in the past years in order to evaluate the impact of IL in higher education. The concept impact in this study refers to effect or influence which IL will make in the academic endeavours of the students. Streatfield and Markless (2008:102) indicated that:

“There has been a parallel shift from traditional service evaluation of information literacy impact on the students’ learning. The evaluation of the impact of information literacy is a huge challenge and it is based on different interventions that need to be implemented differently. The impact may be positive or negative to the academic success of the students.”

Streatfield and Markless (2008) further state that measuring impact is about identifying and evaluating change. In this study learning outcome of the student during IL training play a major role on the impact of information literacy on students because at the end of the training session the researcher will be able to gauge how well the students mastered the programme through probing questions. In case the learning outcomes were not met, the researcher will be able to see the gap from the students when they still need more guidance. Samson (2010:203) acknowledge that learning outcome of the IL program play a bigger role in building up the students through their graduate level course, and further indicated that every opportunity the library sees and get is to successfully deliver information literacy content to the student as a way of making impact to their success. This effect and influence of the IL can be considered by looking at the academic performance of the students through any assignment or project they are engaged in. It can be positive in the sense that the student understood exactly what is relevant and it can be negative in the sense that the student did not understand the relevancy thereof.

Therefore, in this study, impact is established by identifying the students who attended the ILEP and have obtained excellent marks in their first assignment and then conducting a focus group interview session with them, to ask them about their experiences of ILEP. This helped in determining whether Information Literacy education had an impact of their academic success and achievement in their first

assignment or not. It is assumed that the Information Literacy instruction would have a positive impact if the students were able to put into practise some of the skills that they learned during the ILEP. Samson (2010) evaluated the impact of Information Literacy education by linking students' success with the IL outcomes using the assessment instrument based on ACRL competency standards. It was found that the students had knowledge of information resources because they were able to cite them in their references and bibliographies.

2.8. IL SKILLS AND COMPETENCIES OF STUDENTS

According to Machet (2012:11) a person is considered to be information literate when he or she can determine the information is needed, and then be able to access, evaluate and use information effectively from a variety of information resources. The terms 'determine', 'access', 'evaluate', 'use' and 'understand' are therefore used to represent skills that are needed and related to the utilization of information. This entails that being an information literate person requires that one must have these skills, namely, determining, accessing, evaluating using and understanding information which are to be found in various sources of information.

However, according to Taylor (1962) there are three categories of problems that exist in the interaction between the inquirer / user of information and the information resource from which the user is supposed to obtain information. These are also regarded as the variables or dependencies that exist between the inquirer and the information, and they include, organisation of the information service, including its input and output characteristics, the type, complexity and subject characteristics of the question / query, as well as the state of readiness of the inquirer. The inquirer's experience with using the information also affect his/her confidence in finding the desired information. It is for this reason that some authors talk of novice and experienced users.

Becker (2003) also examined the search behaviour demonstrated by the undergraduate students. In this study it was found that many students were able to articulate the importance of source evaluation and even describe the appropriate

methods for assessing the authority and reliability of web-based information. However, in practice they abandoned source evaluation altogether and relied exclusively on basic Google searching. According to Becker (2003) this approach compromised their quality of their search results and contributed to frustration with the research process.

Kai-Wah Chu and Law (2007) conducted a longitudinal study involving six postgraduate students that were studying education, and engineering to monitor their information searching behaviour and skills as they progressed in their studies. The finding revealed that in the beginning they performed more questionable subject searches and fewer keyword searches; later as they understood more about subject searching and the power of keyword searches, they performed fewer subject searches but with greater accuracy and more keyword searches. The study also revealed that the students' searching skills increased and become more familiar with searching and this led to more frequent use of the skills.

The studies above (Becker 2003; Kai-Wah Chu 2007) demonstrate that difference in acquisition of information literacy skills between the novice and experienced information users. Undergraduate students may get frustrated along the way, but as they progressed in their studies, they are able to get along with these skills. In terms of Taylor (1962) information seeking model, the readiness of the inquirer is established by his/her education and experience, the degree of familiarity with the specific subject and the information system. The inquirer 'state of mind is not on a fixed position, but it is constantly shifting from unfamiliarity to familiarity and irrelevancy to relevancy. The inquirer's experience with the information system will also affect his/her confidence in finding the desired information. The Open University (n/d) provides a detailed framework of what IL skills can look like at levels 1 – 3 for undergraduate student and for the Masters level. The IL levels framework aims to:

- Help develop and integrate IL activities within module materials
- Aid skills development and progression through different levels of study

- Provide academic module teams with more detailed guidance on what to include in courses and programmes. It could be adapted to the needs of different disciplines.

Openings level modules introduce students to basic information literacy skills, providing a thorough preparation for the IL they may encounter through further level 1 study in their chosen subject. All four information literacy skills areas are covered, for example:

- Understand the information landscape: students become familiar with the type of information to be found on the internet by searching Google and start to become familiar with the types of online information available e.g. via the OU Library website
- Plan and carry out a search: students search for information on the web, with some guidelines on basic searching techniques
- Critically evaluate information: students are introduced to the basics of evaluating information found on the web, thinking particularly about provenance and reliability
- Manage and communicate information: students begin working with 'favourites'

Information literacy skills development is scaffold, with built-in self-assessment and reflection so that learners start with basic navigation of web sites and guided internet searching and may progress to finding, using and evaluating OU Library resources.

At masters level students will build on the information literacy skills that they have developed by the end of their undergraduate studies. In some cases students may need to update their existing information literacy skills in order to progress to Masters Level. The skills listed follow on from the Level 3 skills and are the ones that students should have developed by the end of their Master's level study. Information Literacy at Masters Level is characterised by increased levels of autonomy and self-direction. Students will need to use their creativity and originality as they begin to push the boundaries of existing knowledge in the subject area. They will be dealing with large volumes of information and/or data from multiple sources and will therefore need to develop effective strategies for filtering and managing information. Students will need

to reflect on the development of their information skills and their use of information to ensure that their competencies meet both study requirements and also their particular personal and career goals.

2.9. MOTIVATION OF STUDENTS TOWARDS INFORMATION LITERACY EDUCATION

One of the most critical aspects for teaching or providing information literacy training for students is concerned with what motivates them to attend ILTP. Therefore training information librarians should always think about motivation and learning theories when planning information literacy training sessions. Small, Zakaria and El-Figuigui (2004: 98) suggest “student-centred teaching methods such as problem –based learning and inquiry learning as the most effective for teaching information literacy skills in a way that is integrated with curriculum, content, structure and sequence”. Small, Zakaria and El-Figuigui (2004: 98) argue that “little research has been done that examines the use of motivators within the unique context of information literacy skills instruction in higher education”. They base their argument on the fact that research on and development of information literacy skills instruction have focussed almost exclusively on content and learning outcomes, with little or no attention on paid to presentation methods that influence student motivation.

Rotter (1996) identifies two general categories of motivational orientations, namely, intrinsic and external motivations. Butler (1988) remark that students with an intrinsic orientation find satisfaction from simply participating in a learning experience that stimulates their curiosity and interest and promotes their feeling of competence. On the other hand, students with extrinsic orientation are motivated by such things as rewards and incentives.

In this study, the focus group of first entering students consisting of ten (students) were asked about the aspects that will constantly motivate them to visit the library after they

have attended the ILTP. This question was asked in order to solicit information about the aspects of information literacy instruction which they have interest in, or aspect of the information literacy instruction that they did not understand very well.

2.10. PERCEPTIONS OF STUDENTS TOWARDS INFORMATION LITERACY

According to Webber and Johnston (2000: 381) lack of research into the student's view of information literacy has been noted by several authors into the concept, and further that students' perception and experience of information literacy still need to be explored further to strengthen the IL curriculum and help in the diagnosis of learning difficulties. Furthermore, the differences in conception of IL will also lead to different pedagogic approaches to teaching IL in higher education, as well as to the appropriate pedagogic strategies. Maybee (2006: 80) also states a review of literature providing definitions of the concept "Information Literacy", providing strategies for teaching IL, and assessing students' achievement did not provide a comprehensive understanding from the students' perspectives.

Hartman (2001:117-118) points out that with regard to the transition of students from secondary school to the university, the students expect universities to be very different and they appear to be open to new experiences. In his findings, Harman (2001) further indicated that students expressed confusion about how to locate items within the library collection and knowing which information to note down from the catalogue. Instead they would prefer to be shown which parts of the collection are relevant to their course of study. Jilien (1998) also laments that although students may receive user education, very often they are not aware of their information needs. He further stated that students have a perceptions on their information needs that does not necessarily match the new academic environment they have entered. Perceptions of students concerning levels of information skills required in tertiary settings are also investigated in Coombs and Houghton (1995). According to Coombs and Houton (1995:270), their findings with regard to the students' perception were that the survey succeeded in identifying the information skills needed by beginning tertiary students, as perceived

by students themselves and their educators, and established that the skills so identified were much broader than traditional wisdom would have it.

Pullman (2016) investigated Qatari students' pre-college experiences with information literacy. Pre-and post-surveys completed by students to explore Qatari students' pre-college experience with information literacy concepts were used. The study also compared students' attitudes toward information literacy before and after taking the course. The findings showed that first year Qatari students expressed familiarity with information literacy concepts before attending college. The results also showed strong learning preferences and a positive attitude towards information literacy. This shows that students who were exposed to information literacy at their early years, are likely to develop positive attitudes towards information literacy even at tertiary level.

Wright and McGurk (1995:114) also addresses that few assumptions can be made about information literacy skills of students entering university, when given the range of backgrounds that these students come from. These backgrounds according to Wright and McGurk (1995) are as follows:

- They are directly from high school and equipped with a range of library skill
- They are from non-English speaking background with varied library experiences
- They include mature aged students often with basic library skills –
- They are mature aged students new to an academic environment

According to the researcher, among the backgrounds mentioned above it is not the case with the participants in this study. The common denominator of the participants in the study is the subject content they have chosen to study and the need to access information to successfully complete their studies.

2.11. INFORMATION LITERACY TRAINING AT TSHWANE UNIVERSITY OF TECHNOLOGY

Tshwane University of Technology operates its ILTP on the assumption that students lack IL skills to assist them in their studies in tertiary education institutions. When they enter tertiary institutions there is a great gap of the transition from high school to university. Therefore the library has established an Information Literacy Committee which consists of Training Information Librarians. The researchers also form part of the committee. The goal of Information Literacy education according to the committee is to empower students and staff to be effective and independent users of information and information resources. The existing Information Literacy programmes that are used for training the students was the effort of Information librarians committee with the approval of the Director of TUT Library Information Services. The structure of the programme consists of six modules and each module has its own outcomes. These modules are discussed below and are as follows:

Library Orientation: The learning outcome for library orientation is for the students to understand the library hours, rules and privileges of the library. The students should be able to differentiate between library services such as information services, lending services and to know the library Online Public Access Catalogue (OPAC) and to use it. This module deals with the introduction of students as library users to the various library information services. It serves as orientation to guide the students to find their way around their library. Library orientation is important because it makes library users aware of library and the services it offers, and educate the users regarding general use of the library. It enables library users to become skilled at finding information and thus foster feelings of confidence and independence.

Library home page and in-house catalogue: The outcome for module is to familiarise students with TUT library home page and to introduce them to TUT Online Public Access Catalogue. The main purpose in this module is to make students understand the Dewey Decimal Classification System (DDC) and also provide generic guidance on the usage of other libraries. With regard to the library catalogue, the

students will be able to locate books relevant to their studies and assignments so that they can borrow and make use of different library resources.

Academic surfing (Internet): The outcome for this module is aimed at making clear the nature and terminologies of electronic information, especially found on the Internet. It distinguishes between the various Web search tools, emphasizing search procedures, as well as quality check of information with special reference to the social network tools for web 2.0 applications relevant to academic implementation. The researcher is sharing information with the students with regard to academic information which they request from the library. Even though there are other social network tools, the researcher is using e-mail only as a communication channel for sending information which the students request from the library because printing of information for them is very costly.

Electronic Resources Portal and Online Databases: This is one of the most crucial module for students to master. In this module the students are trained to be able to develop appropriate searching technique such as the use of Boolean operators as part of the outcome. The students will thereafter be able to construct a search strategy using appropriate commands such as AND, OR and NOT, truncation and search proximity operators for databases and search engines. This includes a step by step guide to individual online databases i.e. full text or bibliographic format which the library subscribes to, accredited and scholarly information. As a result they will be able to conduct literature searches and retrieve information for their academic needs.

Referencing with the Harvard method: The learning outcome for this module is for the students to apply the Harvard Referencing Method and apply the legal and ethical issues related to research and assignment writing and to know more about plagiarism. This module is meant to assist students to use the Harvard referencing method in their assignments. For this module the training was on TUT Harvard referencing style which is being used throughout TUT. TUT adapted this style to be a standard one to be used by its students at large i.e. from 1st year until Doctorate level. In this guide,

information on copyright and plagiarism is included. The authors of this Citation and Reference guide are Sierberhagen and Bijl, 2004.

All the above modules were offered during the free period of the students and each module took about 1hour for two weeks. When comparing ILTP at TUT with the SCONUL model, all the elements of SCONUL model such as identify, scope, plan, gather, evaluate and manage are the concepts which the Information Training Librarian follow and use to teach TUT first year entering undergraduate students who have undergone ILTP. Looking at this Model an information literate student should be able to identify the resources that are likely to fulfill his / her information need and develop a strategy of how to exploit them to obtain information. These aspects are covered in Modules that deal with the library website and library resources. Furthermore, academic surfing ensures that students are able to gather relevant information using criteria for evaluating information, while referencing teaches students on how to use information legally and ethically.

With regards to the assessment of ILTP, presently TUT does not have standard assessment tools that IL trainers are following, but there is a discussion going on to come up with a suitable standard assessment tool that will be common to all TUT campuses. Most trainers came up with different assessment tools that will suit their campuses. The researcher in this case gives the students some exercise with regard to the modules that she is providing training on, in order to assess if the students followed every process in each module. For example, with Harvard reference style module, the researcher provide the students with different references for articles, books and newspapers and the students are expected to work on the correct reference of the above as a practical exercise. When the students are writing assignments the lecturers liaise with the library to train and guide the students on Harvard reference style.

2.12. CONCLUSION

The purpose of this chapter was to review literature related to the study. Information literacy is a very important component of the students in an academic institution. It helps students for searching for information, retrieving information, locating information and selecting the relevant information. Without being information literate, the student will be lost in the vast amount of information that is available on the arena. It is therefore necessary for students to be equipped with the necessary information skills in order for them to interact with various resources independently without depending on the information librarian. The model of the study which was identified support the activities which the students should enhance and is the relevant model for students' information literacy training. Previous studies linked to the objectives on this study is based were also discussed in this chapter, together with the structure of ILTP at TUT. The next chapter 3 which is research methodology will explain and present the way in which the research has been conducted.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. INTRODUCTION

In order to address the research problem and research questions to any study or research project, it is important that a correct methodology is followed. It is also deemed important to clarify what is meant by research methodology. In this regard, Howell (2013) define methodology as the general research strategy that outlines the way in which research is to be undertaken, and among other things, identifies the methods to be used in a particular study for collecting data. These methods, describe in the methodology, define the means or modes of data collection or sometimes, how a specific result is to be calculated. Bailey (1987: 32-33) as well defines a methodology as the philosophy of research process.

Therefore main purpose of this chapter is to indicate how this study was conducted. This chapter reports on the methodology and methods used, research design, area of study, data collection which includes questionnaire as a research instrument, data collection procedures, population and sampling, ethical considerations and ends with a conclusion.

3.2. RESEARCH APPROACH AND DESIGN

A research approach is a master plan specifying the methods and procedures for collecting and analysing the data in a research project. As a strategy or blueprint that outlines the plan of action for carrying through the research project, its purpose is also to answer the questions being investigated, and ensure that the information the researcher gathered address the research problem effectively. Punch (2006:46) indicate that on a practical level research design means connecting the research questions to data. Furthermore, design sits between the research questions and the data, showing how the research questions will connected to the data, and what tools and procedures to use in answering them. Furthermore the research design is the basic plan for piece of empirical research, and includes five main ideas: strategy,

conceptual framework or what will be studied and the tools and procedures to be used both for collecting and for analysing empirical materials. Thus there are five main questions for research design:

- What strategy will be followed?
- Within what framework?
- From whom will the data be collected?
- How will the data be collected?
- How will the data be analysed?

In research, there are generally two research approaches that can be used, namely, qualitative and quantitative research approaches, of which each has its own research designs. Pietkiewics and Smith (2012) provide the difference between the two research approaches thus qualitative researchers are mainly concerned with meaning, that is, how individuals make sense of the world, how they experience events and what meaning the attribute to phenomena and that they are more concerned with the quality of the experience, rather than causal relationship. On the other hand quantitative studies are more preoccupied with counting occurrences, volumes in order to carry out statistical analysis.

3.2.1. Quantitative research approach

Babbie (2007:405) describes quantitative research as a technique that converts data into numerical forms in order to be measurable and to analyse different variables. Quantitative research provides graphs and charts to present evidence or results of data collected by the researcher. The most commonly known research designs in quantitative research approach are survey, experimental and correlational research designs. Survey research has been defined as “the research strategy where one collects data from all or part of a population to assess the relative incidence, distribution, and interrelations of naturally occurring variables (Powell & Connaway 2004:59). Survey research design is divided into descriptive and exploratory survey.

The descriptive survey research design describes a situation and / or look at for trends and patterns within the sample population group that can be generalised to the defined population for the study (Pickard 2013: 112). Furthermore, the data gathered in descriptive survey are usually a combination of measurement, counts, and brief narratives, which are then analysed using descriptive statistics such as measures of central tendency and standard deviations. The basic purpose of a descriptive survey are to describe the characteristics of a population of interest, estimate proportions in the population, make specific predictions and test the associational relationships (Powell & Connaway 2004:87).

Exploratory survey research design, on the other hand seeks to establish cause and effect relationship between the variables. Pickard (2013: 113) argues that the cause and effect relationship survey always take place in a natural setting and under this conditions it is impossible to establish the definitive cause and effect relationship, and therefore correlational relational research design is proposed instead of exploratory survey research design. Correlational research design in this study attempts to investigate the cause and effect relationship between variables, of which in this study the variables was attendance of ILTP, while the effect was academic success of first year entering undergraduate students. Therefore this study adopted a descriptive survey research design to describe and measure the skills and competencies of first year students before and after they attend ILTP. The survey presents a picture of the skills and competencies of students using descriptive statistics before and after the ILTP.

3.2.2. Qualitative research approach

The second research approach adopted in this study is referred to a qualitative research. Maree (2007:51) defines qualitative research as a research methodology which is concerned with understanding the process and social context which underlie various behavioural patterns, and is mostly concerned with exploring the why questions of research. This approach of enquiry aims to gather an in-depth understanding of human behaviour and the reasons behind that behaviour. Leedy and

Ormrod (2013) notes that qualitative research can be used when the researcher seeks to do the following:

- Description: to reveal the nature of certain situations, settings, processes, programmes, relationships, systems or people
- Interpretation: to gain new insights about a particular phenomenon, to develop new concepts or theoretical perspectives about a phenomenon or discover problems that exist within a phenomenon.
- Verification: to testify the validity of certain assumptions, claims, theories or generalisations
- Evaluation- to judge the effectiveness of particular policies practices and innovations.

In this study an attempt was made to describe the ILEP provided for first year students at TUT, verify if the attendance of ILEP at TUT contributes to the academic success of first entering students, as well as evaluating its effectiveness in terms of the structure and content. The study used qualitative research approach to measure the students' familiarity with library information resources after having attended ILEP; to understand the students' motivation for library usage after attending the ILEP; and to understand experiences and attitudes of students towards the ILEP at TUT, Polokwane Campus.

The most commonly used research designs in qualitative research approach according to Leedy (2013) are case study, ethnography, phenomenological studies, grounded theory and content analysis. The research designs adopted from in this study were case and phenomenological studies. A case study is a systematic and in-depth study of one particular case in its context (Bertram & Christiansen 2014: 42). A particular case for investigation in this research was therefore the first entering students who attend the ILEP offered at TUT. Case study generally describe a particular research object or subject in any particular situation, of which a particular situation in this study was before and after the students attend the ILEP.

A case study design is adopted because of its nature as a good source of ideas about behaviour, good opportunity for innovation, good method to study rare phenomena, good method to challenge theoretical assumptions, and good alternative or complement to the group focus as identified by Zainal (2007:4). However, Zainal (2007:5) further identifies the weaknesses of a case study method as hard to draw definite cause-effect conclusions, hard to generalize from a single case and possible biases in data collection and interpretation (since single person gathers and analyses the information). Pickard (2012: 109) confirms that case studies are not intended to produce generalisations, but they are intended to allow for the transferability of the findings. This study looked into the behaviour of first entering students towards usage of library resources and services before and after attending ILTP. The case study design also provided a good opportunity of measuring academic success of students after attending the ILTP.

Phenomenology refers to a person's perception of an event or programme. Its purpose is to understand an experience from a participants' point of view. Pickard (2014: 268) maintain that phenomenological analysis is concerned with discovering the underlying structure of experiences. Furthermore, it seeks to discover the detailed understanding of the phenomenon under investigation as it is experienced by the individual. IL as a phenomenon can be understood differently by different individuals. Therefore in this study the viewpoints and experiences from the participants are solicited before and after they attend the ILEP offered at TUT, Polokwane campus.

However, the phenomenological study method also has its strengths and weaknesses. Pietkiewicks and Smith (2012) identify strengths of phenomenological study design that lie in the fact that it seeks to find the universal nature of an experience and can provide a deeper understanding of the human experiences examined. The themes and meanings of an experience emerge from the data collected. Furthermore, the qualitative nature of phenomenology allows the researcher to notice trends and look at the big picture and then helps to understand a lived experience and brings meaning to it. Phenomenology may also contribute to the development of new theories,

changes in policies or changes in responses as the results may help expose misconceptions about an experience (Pietkiewicks and Smith (2012)).

Weaknesses in phenomenology lie in the fact that research participants must be able to articulate their thoughts and feelings about the experience being studied. If it is difficult for them to express themselves due to language barriers, age, cognition, embarrassment and other factors, the questions should be made to be brief as possible. Phenomenology also requires researcher interpretation, making phenomenological reduction an important component to reduce biases, assumptions, and pre-conceived ideas about an experience or phenomenon. Researcher bias is difficult to determine or detect. Phenomenological results are not statistically reliable, even with a larger sample size.

3.2.3. Mixed method research approach

A combination of both designs and methods is commonly referred to as mixed method research approach. Therefore, this study used both qualitative and quantitative methods to adopt the mixed-methods research approach. Creswell and Plano-Clark (2007:5) define mixed-methods research as a research design which focuses on collecting, analysing and mixing both quantitative and qualitative data collection approaches in a single series of study. Its central premise is that the combination of quantitative and qualitative approaches provides a better understanding of research problems than a single research approach. A mixed methods design is useful to capture the best of both quantitative and qualitative approaches (Creswell, 2003:22). Maree (2007:268) also state that in mixed methods research, the research constructs knowledge about real-world issues based on pragmatism, which places more emphasis on finding answers to research questions than of the methods used.

Punch (2006:154) defines mixed method as an empirical research that brings together qualitative data (and methods) and quantitative data (and methods). This method employs both approaches simultaneously to create a research outcome stronger than either method individually. The weaknesses, thereof remain in development, that is,

criteria and procedures for judging the quality of mixed methods social inquiry remain problematic, particularly when the studies include stances from different methodological traditions, different methods of relatively equal importance, and efforts at integration (Smooch & Lewin, 2011:262).

3.3. AREA OF STUDY

The area of study of this research was Tshwane University of Technology (TUT), in Polokwane. TUT has seven campuses in about three provinces, namely Limpopo, Mpumalanga, Gauteng and each campus has a library. Each library offers Information Literacy training programme to its students, and has its own challenges with regard to IL training. In this regard, the study takes place at TUT Polokwane Campus, 109 Market Street, Polokwane, and Limpopo Province, South Africa. As an employee, the researcher felt it convenient to select this campus as a site of research. As it were, the advantage is that she comes into contact with the (Polokwane Campus) student participants on a daily basis. Conducting a study at a place of one's employment also minimizes the costs of data collection, in terms of time and money. Besides the financial and time constraints, the requirements to implement the recommendations are also minimized.

3.4. POPULATION

Research revolves around the population which is the entire set of individuals about which inference is made (Pickard 2013: 60). Therefore, in research, the word population refers to the total number of people, groups or organizations that could be included in the study (Bertram & Christiansen 2014: 58). Punch (2012:155) also remark that population in research is defined as the target group, usually large, about whom we want to gain and develop knowledge or to solicit information from. Furthermore, Gay and Airasian (1996:112) defined population as the group of interest to the researcher, the group to which she or he would like the results of the study to be generalizable.

The targeted population of this study comprised of first entering students from the faculties of Humanities and Management Sciences at TUT Polokwane campus. In this study the first-year entering students have been deliberately selected because of their common characteristic: they are all still fresh from high school; thus they attended IL training for the first time at a tertiary institution. The researcher focussed only on these two faculties because, according to the library usage statistics, Humanities and Management Sciences students have the highest information queries or requests from to the library and information services for all the years from 2000. They seem to be regular users of the academic library and information services and resources at TUT. In addition, the students from these two above-mentioned faculties are most of the times sent by their lecturers and academics to the information librarian to request for information pertaining to their assignments and other related projects. Therefore, researcher as an Information Literacy and reference librarian has secured good working relationship with the academics from these two faculties. Therefore by choosing the faculties which the researcher has established a strong working relationship minimised the risks having the questionnaires not responded to.

3.5. SAMPLING

In research, there is always a possibility that it is not possible to include the entire population for the study (Pickard 2013: 59). It is therefore desirable that the researcher should have a few individuals from the entire population in order to carry out empirical research. This process of selecting few from many in order to conduct empirical research is referred to as sampling. Bertram and Christiansen (2015:59) wrote that “sampling involves making decisions about which people, settings, events or behaviour to include in research”. Gay and Airasian (1996:111), defined sampling as the process of selecting a number of individuals for a study in such a way that the individuals represent the larger group from which they were selected.

Neuman (2000:195-196) identifies two types of sampling namely probability sampling and non-probability sampling. Bertram and Christiansen (2015: 60) identify the former as random sampling and the latter as purposive sampling. Probability sampling is

sampling in which the researcher can determine the chances each element in the sampling frame has to be included in the sample. It gives each and every member of the population an equal chance of being selected in the sample. Examples of types of probability sampling include simple random sampling, stratified sampling and cluster sampling.

Non-probability sampling is whereby the researcher has no means of determining the chances of inclusion to the sample of a particular element in the population. This entails that every member of the population to be studied has an equal chance of being included in the sample. The sample may be drawn depending on a determined size in advance, but there is no assurance of representativeness. Examples of such types of sampling include haphazard sampling, quota sampling, snowball sampling, deviant-case sampling, sequential sampling and theoretical sampling.

In this study first year entering undergraduate students were selected from the two faculties at TUT Polokwane campus, namely Humanities and Management Sciences. The study used purposive sampling. Purposive sampling refers to a judgemental form of sampling in which the researcher, bases his or her knowledge of the population, handpicks certain groups or individuals for their relevance to the issue being studied (Aina and Ajifuruke, 2002:37-38). Maxwell (1997:87) defines purposive sampling as a type of non-probability sampling in which particular settings, persons or events are deliberately selected for the important information they can provide that cannot be found from other choices. Brink (1996:141) states that the purposive sampling requires selecting participants who are knowledgeable about the issues in question because of their sheer involvement in the situation. Maree (2007:17) also indicates that the purposive method is used when the sampling is done with a specific purpose in mind. In this study the first entering students have been deliberately selected because of the common characteristic that they are all still fresh from high school; thus they will be attending the IL training for the first time at tertiary institutions.

The common advantage for adopting purposive sampling method is that there is no need for a list of all the population elements. Through purposive sampling the researcher is able to judge the participants that were representative of the

phenomenon being studied. In this type of sampling, the results from the data cannot be generalised beyond the sample and the data collected could be very informative for this research. However, its weakness relate to the fact that samples are not easily defensible as being representative of populations due to potential subjectivity of researcher.

The total number of students, that is, the population in both targeted faculties for the academic year 2016 was 410. Two-hundred and thirty nine (239) students was the total number of the first entering students for the academic year 2016 from the Faculty of Management Sciences. One-hundred and seventy one (171) is the total number of the first entering students from Humanities faculty. Therefore the total number of students in both faculties was four-hundred and ten (410).

This number was still high, considering the fact that the researcher had to engage with them on two occasions and due to the fact that they were also attending the ILEP as well as their classes. Therefore, the researcher used a systematic random sampling method to select participants for this study. A list of the first entering students, obtained from the administrative officers of both faculties was arranged alphabetically according to their surnames, then selected on the basis of the third interval. The total number of the participants for this study was therefore one-hundred and ninety two (192) students for completion of the questionnaire and then ten (10) students in the focus group interview.

3.6. DATA COLLECTION METHOD

For the purpose of this study, the data collection instruments considered as the most effective and convenient for this study are the quantitative and qualitative instruments which will have open ended (focus group interview) and close ended questions of the questionnaires.

3.6.1. Questionnaire

The data collection instrument that were considered as the most effective and convenient for this study were questionnaires. A questionnaire is one of the tools used to carry out a survey research (Davies, 2007:82). It is defined as a list of questions which the respondents must answer (Bertram & Christiansen 2015: 73). This tool is without doubt the most popular data collection tool in any research involving human subjects. Furthermore, there are many reasons for using a questionnaire as a data collection tool in any research to show the questionnaire strengths:

- They can reach a larger and geographically dispersed community at relatively low costs
- They can harvest data from larger samples
- Anonymity and confidentiality are guaranteed
- Data analysis can be determined from the outset
- They can be coded for data analysis before being distributed (Pickard 2013: 207).

A questionnaire is also regarded as a research instrument consisting of questions designed to yield specific information to meet a particular need for research information about a pertinent topic (Onyango, 2002:65).

When questionnaires are served through post or emails the response is very low. Therefore this study used a self-administered questionnaire where the researcher was present when the participants completed the questionnaire. This is basically because, when the researcher is not present, questionnaires do not offer the researcher the opportunity to follow up ideas and clarify issues (Bell 1999). Therefore it is necessary to consider all aspect of the questionnaire from design to selecting the correct target-group, in order to obtain the maximum amount of reliable and valuable data.

The researcher opted to use a self-completed/administered questionnaire in order to collect factual and baseline information which can be tracked over time to examine changes. The questionnaire seeks to achieve the following:

- To determine the participants' perception of information literacy.
- To determine their ability of accessing information relevant to their studies
- To determine their ability to know which databases are relevant to their required information.

Students were asked to complete a set of structured questions that solicited information about their perceptions of ILEP and assess their level of information literacy skills and competencies. Questionnaires are generally categorised into open-ended or unstructured questionnaires and closed-ended or structured questionnaires (Onyango, 2002:65; Babbie, 2005:254). In the case of closed-ended or structured questionnaires, the respondents are asked to select an answer from among a list of answers provided by the researcher. Bertram and Christiansen (2015: 73) views closed-ended questions as questions where the respondents must choose from a given particular possible answers to choose from. Closed-ended questions are very popular in survey research because they provide a greater uniformity of responses and are more easily processed than open-ended ones (Babbie, 2005:254) and are mainly used when conducting a quantitative research approach.

Open –ended questionnaires allow the respondents freedom to answer a question in their own words in whichever way they think appropriate (Bertrams & Christiansen (2015: 74). These type of questions are usually used in qualitative research approaches. Therefore, in open-ended or unstructured questionnaires the respondents are asked to provide their own answers to the question (Babbie 2005:254), and are designed to permit free responses from participants rather than concentrating on or being limited to specific alternatives. It provided for a great depth of response.

However, the main drawback of open-ended or unstructured questionnaire according to Onyango (2002:65) is that it requires greater effort on the part of the respondents and therefore response rate or returns are often inadequate, particularly if it is self-administered. This is because open-ended questions tend to discourage responses, as they typically take longer to answer. In addition, there is no limit to possible

responses to an open-ended questionnaire. This makes answers more difficult to categorise and analyse than those of closed-ended or structured questionnaires. This sometimes makes the open-ended item difficult to interpret, tabulate and summarise in the research report. It is for this reason that a single questionnaire should contain both open-ended and closed-ended questions. In practice, a combination of structured and unstructured question is most efficient (Onyango 2002:65-66). The questionnaire which consisted predominantly of closed-ended questions, was distributed to the students before they attend the ILEP. In this study, the first year entering students in the faculties of Humanities and Management sciences at TUT were asked to complete a set of structured questions that determined their perceptions of IL and that assess their level of IL skills and competencies.

The questionnaire was thus divided into four sections. Section A concentrated on the profiles of the participants such as age, years in which they completed their matric, and faculty registered in. These profiles are important because they are some of the variables that may have an influence on the students' IL competencies and skills. Section B focused on the students' perceptions towards IL as a concept, whereas section C focused on their IL skills and competencies. Section D dealt with the participants' familiarity with regard to library resources and services. The questions were also related to their awareness of services and resources in the library, search techniques, referencing methods and the like. Questions were arranged on a five-point rating scale. For example, 1= To no extent at all or strongly disagree; 2 = To no extent or disagree; 3 = To some extent or neither agree nor disagree; 4 = To a large extent or agree; 5 = To a very large extent or strongly disagree.

3.6.2. Focus Group Interview

Another method used for collecting data in qualitative research was the focus group interviews. Bertram and Christiansen (2015: 80) define an interview as a conversation between the researcher and the respondent, where the researcher sets the agenda and ask questions. When used of collecting qualitative data, interviews are meant to solicit information about the experiences of the participants and their views regarding a particular phenomenon. Like the face-to-face interviews, focus group interviews a

primarily a qualitative technique. Most of the data produced in a focus group interview is not amenable to statistical analysis (Case 2012: 250). It is the interactive dialogue between the researcher and the respondents, with the aim to capture verbatim responses, using observation, notes, tape recordings, and videotapes.

Dilshad & Latif (2013:186) identified the strengths and weaknesses of focus group interviews. They yield efficient valid and reliable data when used by trained and skilled researchers and allow a researcher to explore the unanticipated aspects of the problem under study. Focus group interviews can also offer an opportunity for immediate feedback or clarification on one's view point. Domination is commonly known to be one of the weaknesses of a focus group interview. A few vocal participants may dominate other members in the course of group discussion, and some participants may conform to the responses of other participants even though they may not agree.

In this study the researcher was making notes as the respondents were responding to the questions that were posed to them. Interviews are also categorised into two types, namely, structured and unstructured interviews. In a structured interview the researcher uses an interview schedule which is a set of questions in a predetermined order and they may require closed responses with one word answer or open ended responses where the respondent expresses an opinion in a long sentence. In unstructured interviews on the other side, the researcher may simply introduce a topic or main research question, and then let the respondent answer the way that he or she would like to. As the respondent talks, the researcher would ask some questions (Berta's & Christiansen 2015: 80 -81). Powell and Connaway (2004: 150) argue that the unstructured interviews are more flexible than the structured interviews and most appropriate in the early stages of research and in qualitative studies. It is therefore advisable that less-structured interviews which include the focus group is also important. A focus group is a group of individuals selected and assembled by the researcher to discuss and comment on, from personal experience the topic that is the subject of research (Powell, Single & Lloyd 1996: 499). In focus group, the researcher acts as mediator between the question and group, as well as between individual members of a group (Pickard 2013: 243).

In this study the researcher coordinated a discussion with few (ten in number) students aimed at obtaining information relevant to the study, that is, information regarding the experiences of students about the ILEP that they have just attended and their information seeking behaviour after having attended the ILEP. In order to inform a wide range of research questions during the ILEP the focus group of ten (10) students was assembled by the researcher, where they had to relate their own experiences relating to the session that they have just attended. The researchers had prepared a set of structured questions which were posed to the interviewees. This exercise allowed the respondents to share their knowledge and experiences of IL with the researcher. The main idea of this assessment was to establish the level of IL of the students in order to assess their initial understanding of various themes about the issue, and to collect detailed views from these respondents.

3.7. DATA COLLECTION PROCEDURE

The study used the following procedures to collect data:

- The total number of first-year entering students in the faculties of Humanities and Management Sciences formed part of the participants of the study.
- The students were invited to the Information Literacy programme through their academic managers in their academic departments.
- The researcher met the students in the library training room where Information Literacy training took place.
- Before the Information Literacy training was conducted, the questionnaire was distributed to the students to complete and thereafter, collected from them by the researcher.
- The ILEP was conducted for about 1 hour for two weeks.
- After the IL training session, a focus group of ten (10) students was assembled to determine if the ILEP has had any impact on the students. This means that students who formed part of the focus group were also assembled and interviewed about their experiences of the ILEP.

3.8. QUALITY CRITERIA

Hammersley (2007) believes that unless research operates on the basis of quality criteria, the research product will be of poor quality and argues that users of research require some reliable means of judging its quality. Quality criteria are one of the means used to meet this need. Therefore, before collecting data from all the participants, a pilot project/study should be conducted to measure the easiness of the questions asked. A pilot study helps the researcher to identify potential problems that may have an effect on the reliability and validity of the results.

Goddard and Melville (2001:41) define the term reliability as means that measurements made are consistent i.e., if the same experiment is performed under the same conditions, the same measurement and results will be obtained. The instrument to be used in this regard should bring about the standardisation in the use of the instrument from one situation to another (Leedy & Ormord, 2010:93). According to Leedy and Ormord, (2010:92) the term validity means that the measurements are correct, i.e., the instrument measures what it is intended to measure, and that it measures this correctly. Relevancy, precision and accuracy are the requirements that are sought in measuring validity (Sarantakos 2013: 99). Punch (2006:157) further mentioned that validity of measurement is the extent to which a measuring instrument measures what it is supposed to measure.

Therefore, before the data collection instruments were used, the researcher confirmed both the reliability and validity of the research instrument by conducting a pilot project prior to the major study. This was done by distributing the questionnaire to a few students who have attended the ILEP to complete. The results of the pilot study were analysed and the value thereof calculated. For reliability purposes, the percentage agreement or the Cronbach Alpha was used, and value of 0.7 and above was realised, and therefore the instrument was considered reliable to use for the study (Nunnally and Bemstein 1994; De Vellis, 2003).

Establishing the trustworthiness in qualitative research is also as important as establishing the quality of quantitative research. In order to establish the trustworthiness of qualitative research credibility should be ensured. Credibility in qualitative research is demonstrated by the researcher's prolonged engagement with the participants through persistent observation, triangulation of the instruments used and member checks (Pickard 2013: 21). In this study, the researcher had an engagement with the participants and was able to explain the purpose of the focus group interview. Unfortunately it was not easy for the researcher to stimulate prolonged discussions with the students. It was then that the researcher decided to provide them with a list of questions that they participants responded to in writing.

In order to triangulate the response that the students were now able to search databases, the researcher attempted to have access to the database usage statistics form the library. Unfortunately, login-in software to monitor and report the usage of electronic databases or resources only provides statistics in terms of the number of logins, rather than who used those databases and for what purpose. Credibility of participants was only met by selecting participants who obtained higher marks in the assignments concluded after attending ILTP.

3.9. DATA ANALYSIS

Powell and Connaway (2004: 227) describe data analysis as the process that is "concerned with the development and application of methods and techniques for organizing and analysing data so that reliability of conclusions based on data may be evaluated objectively in terms of objectivity. Thematic analysis was used to analyses qualitative data, while quantitative data was analysed through descriptive statistics. In thematic analysis, the researchers categorises the participants' responses into themes, while in descriptive statistics the researcher summarised quantitative data into units of analysis. Descriptive statistics were compiled and frequency distributions, percentage, mean and standard deviation obtained, and then presented in the form of tables and bar graphs to be analysed.

3.10. ETHICAL CONSIDERATIONS

Ethical considerations in research are an important component of research. Therefore, as part of ethical considerations, the researcher requested permission from TUT Research Ethics Committee and the Director of TUT libraries to undertake research making using of TUT Polokwane campus first year entering undergraduate students from both Humanities and Management Sciences Faculties. The research study was explained to the participants and they were requested to complete the consent forms in that regard and it was indicated to them that they have the right to participate in the study.

The Faculty of Higher Degrees Committee and the Research Ethics Committee of the University of Limpopo have approved the formal study proposal. The ethics clearance number is TREC/11/2016: PG. TUT Library and Information Services Director has also granted the researcher the permission to proceed with the research using the students as participants during information literacy training sessions, after a formal request was made and the ethical clearance certificate produced. Furthermore, TUT Research and Ethics Committee forwarded to the researcher an approval letter to continue with the collection of data from the first year entering undergraduate students at Polokwane campus from the two faculties, namely, Management Sciences and Humanities. With regard to the data the participants provided the researcher guaranteed the participants the data they provided was confidential referring that their names and other personal details or identities the student provided will not appear anywhere in the research document including the questionnaire and the research reports.

3.11. CONCLUSION

This chapter provided an outline of the methodology for the current study which covered the research design, area of study, data collection procedure, population and sampling, limitations of the study and ethical considerations. The research methodology that was provided was to explore the impact of information literacy on the academic achievements and performance of undergraduate first year entering students of TUT Polokwane campus sample in both Humanities and Management

Sciences faculties. This philosophical perspective provided a rationale for employing both qualitative and quantitative approaches using the open- ended and close-ended questionnaires. Ethical issues pertaining to the research were then examined. The data collection and data collection procedure were described. Data analysis will be presented in chapter four.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

4.1. INTRODUCTION

In the previous chapter, the methods that were used as well as the procedures followed to collect data for this study were discussed. The purpose of the current chapter is therefore, to present the research results that were revealed through the methods and techniques that were discussed in the previous chapter. This chapter pays its attention to the presentation, analysis and the interpretation of data that has been collected from the responses on the close- ended and focus group interviews presented by the respondents. In this study data collected through a questionnaire are presented in the form of tables, and bar graphs, and then examined and interpreted in descriptive form. This is completed according to the number of people who responded on a certain question and followed by the percentage thereafter. The results of the questionnaire are presented in a descending order, that is, from the highest to the lowest number of scores, for each item in each question. The data collected through a focus group interview are also presented in verbatim form and then analysed through categorization into themes, which were identified from the responses provided by the respondents.

4.2. NUMBER OF PARTICIPANTS

The total number of the participants for this study was 192 students recruited from the Faculties of Humanities and Managements Science of the TUT Polokwane Campus. This figure was arrived at as a result of systematic random sampling that was used from selecting participants from the 410 students in the above-mentioned faculties. This means that all the first entering students from the two faculties were represented by forty-seven per cent (47%) of students from both faculties. These are shown in figure 4.1 below.

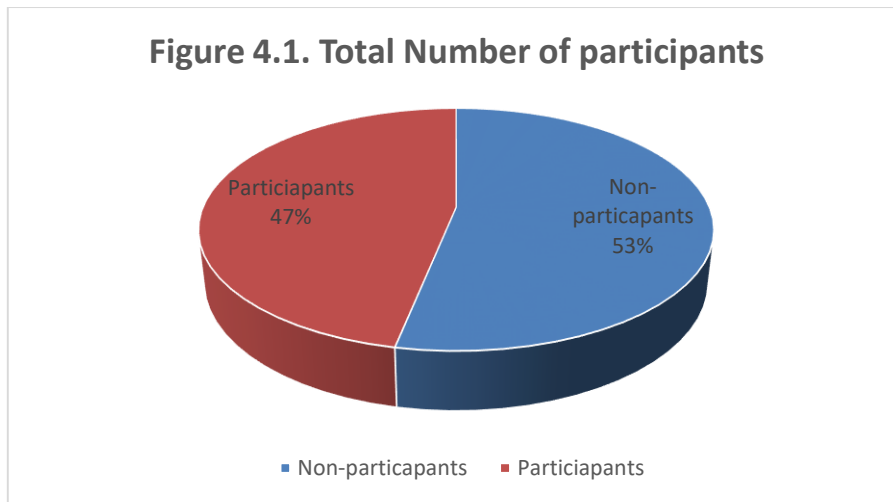


Figure 4.1. Total Number of participants (N = 410)

Figure 4.2 below indicates that out of one hundred and ninety-two (192) participants, one hundred and seventeen (117) came from the Faculty of Management Sciences, whilst seventy-five (75) participants were attached to the Faculty of Humanities, which constitutes sixty-one (61%) and thirty-nine (39%) respectively.

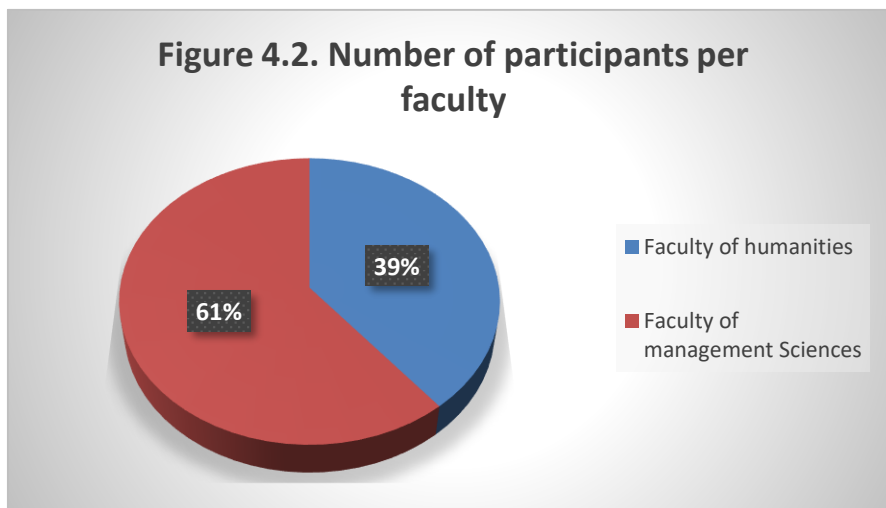


Figure 4.2. Number of participants per Faculty (N = 199)

As for the focus group interviews, the researcher selected only ten (10) students from both faculty of Management Sciences and Humanities (i.e. is 5 students from each

faculty) to respond in order for the researcher to establish the impact of information literacy of these students' academic achievement and success.

4.3. RESULTS OF THE QUESTIONNAIRE

4.3.1. Students demographic information

In this heading the respondents were asked to provide information about their demographic characteristics such as age and gender, as well as their background information such as the year they matriculated and whether the school where they matriculated had a library, whether they attended the information literacy training at their previous schools or not. The researcher asked these questions in order to establish the gender, age and matriculation year of the students as part of the study even though these did not play an important role as variables to consider in the impact of information literacy training. The attendance of information literacy training at the students' previous school was considered with other relevant variable in this study because the researcher was interested in establishing if the respondents attended information literacy at their previous schools.

4.3.1.1. Gender of participants

Figure 4.3 below shows that the majority of the respondents students are females at a total of one hundred and nine (57%) and the minority of males at a total of eighty three (43%).

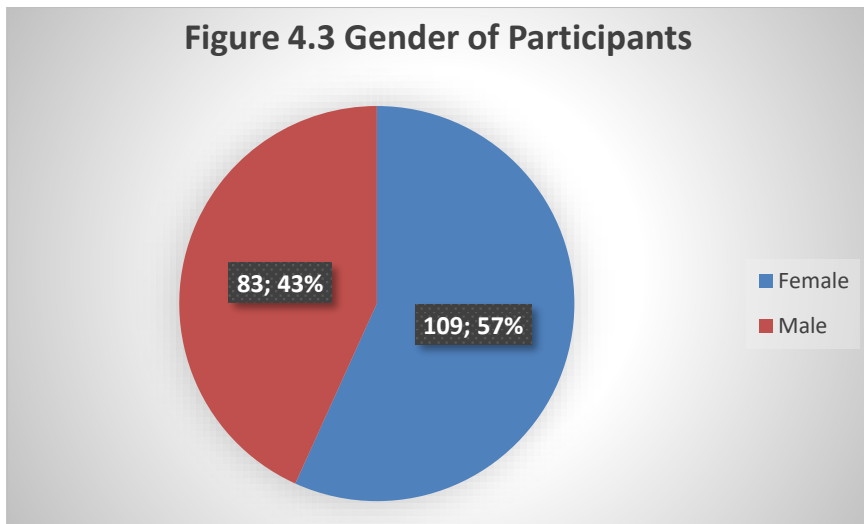


Figure 4.3 Gender of participants (N = 192)

4.3.1.2. Age of participants

Figure 4.4 below shows that the majority of respondents students are in the age range of between 18 to 25 years, with one hundred and eighty-three (95%) of the respondents, whilst the respondents whose age group ranges from 26 to 35 years were only nine (5%) in number. There were no respondents whose age groups range between 36 and 45 years old and 40 years and above.

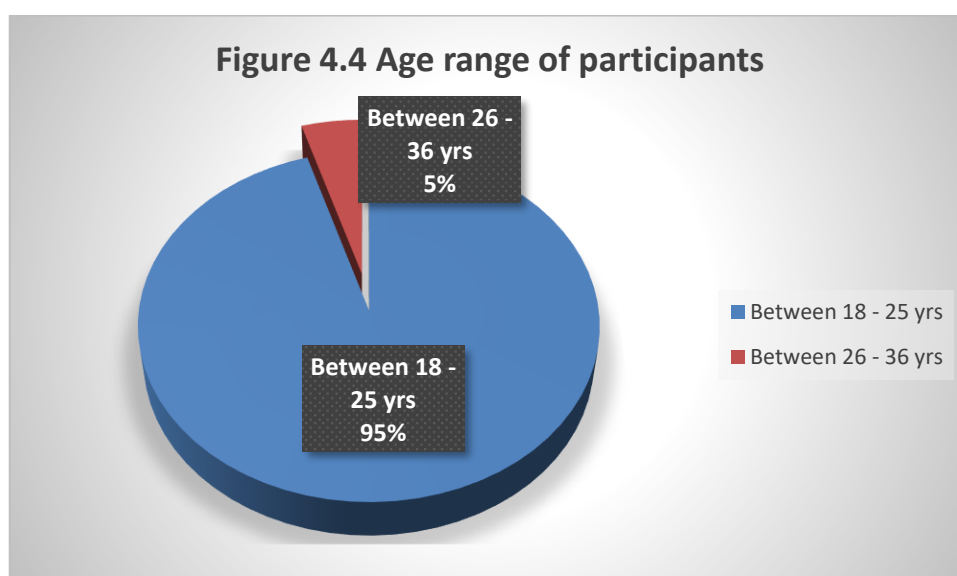


Figure 4.4 Age range of participants (N = 192)

These results show that the respondents who are in the majority are those who are fresh form high school, whose average age range is between 18 and 25 years, followed by those whose age range is between 26 and 35 years. There were no respondents whose age is above 36 years, because average age for university entry level according to standards is eighteen (18) years even though there are some exceptional cases.

4.3.1.3. Availability of libraries at their previous schools

Figure 4.5 below shows that out of one hundred and ninety two (192) participants, only 8 (4%) of them had libraries in their previous schools, whereas 184 (96%) did not have libraries in their previous schools. The results show that the majority of students come from the schools which did not have libraries. Due to lack of school libraries from their previous schools, all the 192 (100%) respondents in both Faculties showed that they have never attended any Information Literacy training before at their schools. This also shows that information literacy training is not provided even in the high schools which have libraries in their premises.

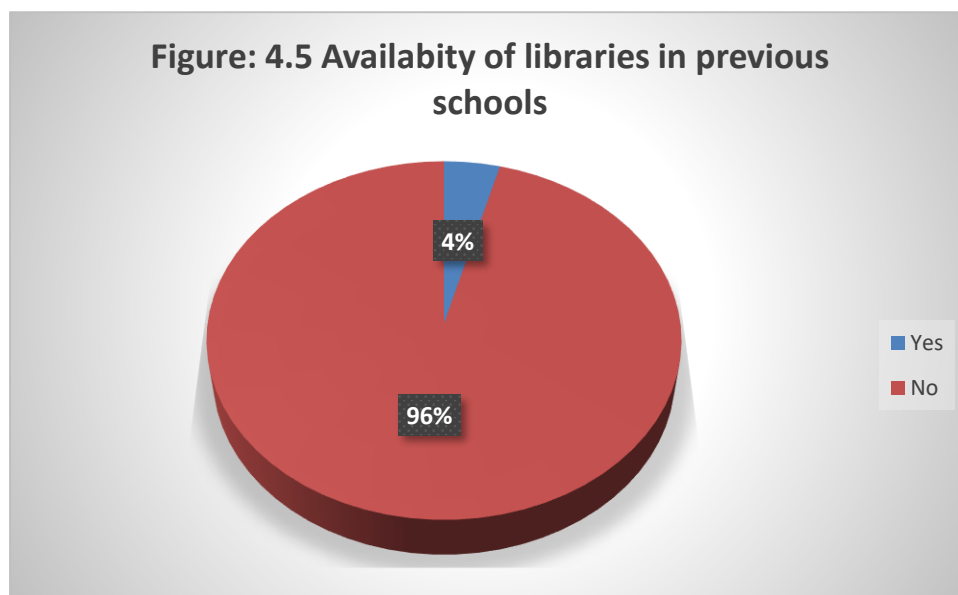


Figure 4.5: Availability of libraries in previous schools – N = 192

The Libraries and Information Services Transformation Charter (2014:49) reported that there are various challenges which the Department of Basic Education in as far access to school libraries is concerned. Among some of the challenges identified in the charter are that very few schools which have libraries because there are no government posts for school librarians; schools cannot make room for librarians; lack of space at schools; schools lacking reading and learning resources; and teacher-librarians who are often expected to run the library in a few 'free' periods a week, lack status inside a school. This is slightly the same with the school libraries in Qatar as shown in Pullman (2015: 58) that they are poor and often limited to one room with very small collections, which were mainly limited to circulation services and were staffed by individuals who did not have library science qualifications.

Wessels (2014: 297) also notes that schools which should be responsible for learners' illiteracy skills do not have school libraries and school librarians, and that only eight (8%) of South African schools have school libraries. At the heart of the problem is also teachers' own understanding of information literacy education (Zinn 2012: iii). Therefore when first year level students are expected to learn individually using information from resources available in the university library, their unpreparedness from school to work independently seem to work against them.

However, the fact that the schools where these learners completed their matric does not have libraries, does not rule out the possibility that the students might have attended information literacy sessions. Having no school library does not constitute having not attended any Information Literacy session. They could have received such training at the public library, from their subject teachers during their research projects or from their Information Management teachers.

4.3.2. Students' perceptions information literacy

Defining what IL is before conducting a session is very important because this will provide student a general overview of what they are dealing with. Maybee (2006: 79)

remark that designing an IL instruction without incorporating the student's perspective leads to what Webber and Johnston (2000) refer to as "inappropriate pedagogic strategy. The IL topics taught in LIS departments in South Africa, as portrayed by Jiyane and Onyancha (2010: 22) starts with "defining IL". Therefore, under this heading the respondents were asked to give their perception of what they understand about the concept "Information Literacy" based on the statements provided and then ranking them on a Likert scale of 1 – 5 as follows: 1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree; and 5 = strongly agree. The results are illustrated in figure 4.5 below.

4.3.2.1 Information Literacy as the ability to recognise the Information need or gap

Figure 4.6 below also shows that 91(47%) strongly agree with the definition of information literacy as the ability to recognise the information need or gap, followed by 36 (19 %) who are neutral, whilst 29 (15%) agree and 23 (12%) disagree whereas only 13 (7 %) of the respondents "strongly disagree" with the statement.

4.3.2.2. Information Literacy as the ability to identify resources

Figure 4.6 below also shows that 71 (37%) agree with the definitions of information literacy as the ability to identify resources that are likely to meet or satisfy the information gap, followed by 53 (28%) who strongly agree whilst 33 (17%) are neutral, and 21 (11%) disagree whereas only 4 (2%) of the respondents strongly disagree.

4.3.2.3. Ability to search and retrieve information

Figure 4.6 below again shows that 80 (42%) strongly agree with the definitions of information literacy as the ability to search and retrieve information, followed by 48 (25%) who "agree", whilst 35 (18%) disagree and 15 (8%) are neutral whereas only 14 (7%) of the respondents strongly disagree.

4.3.2.4. Ability to evaluate the retrieved information

Figure 4.6 below again shows that 85 (44%) strongly agree with the definitions of information literacy as the ability to evaluate retrieved information, followed by 47 (24%) who are neutral, whilst 33 (17 %) disagree whilst, 15 (8%) strongly disagree and only 12 (6 %) of the respondents agree.

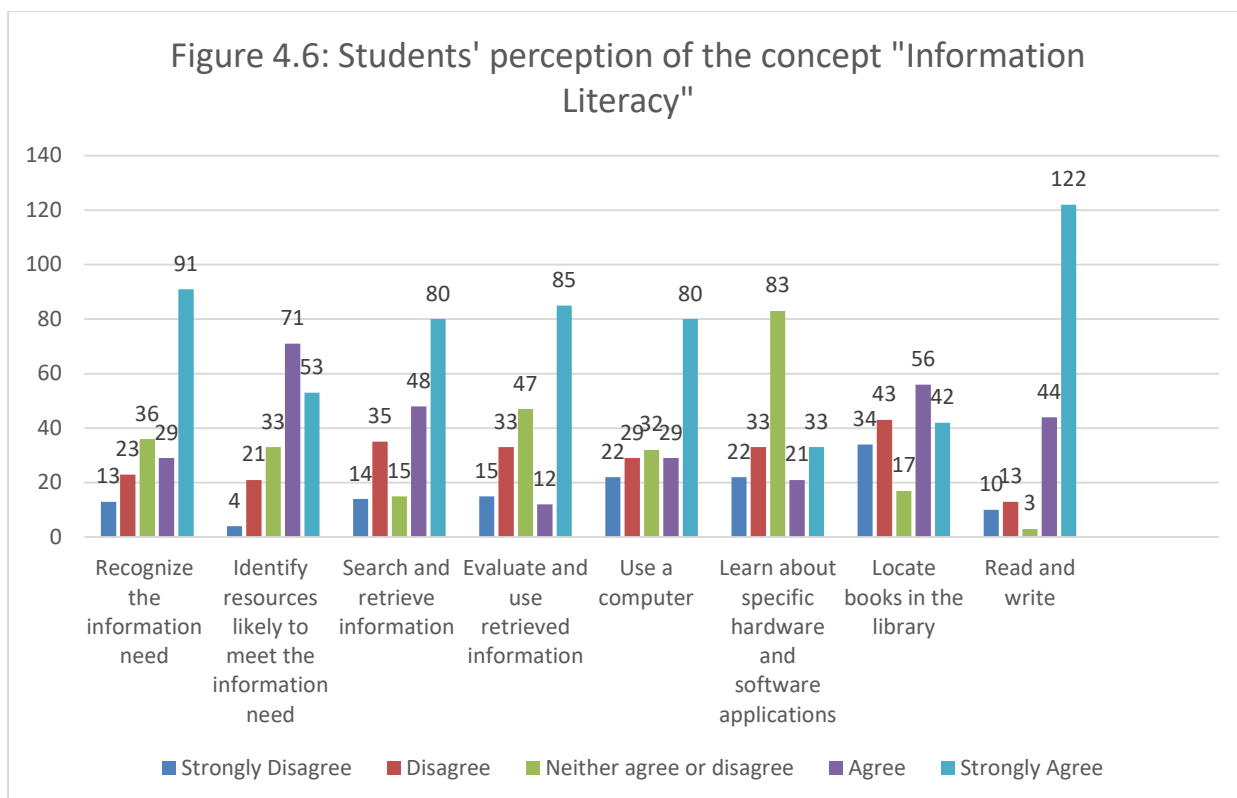


Figure 4.6: Perception of students towards the definition of Information Literacy (N =192)

4.3.2.5. Ability to use a computer

Figure 4.6 above again shows that 80 (41%) strongly agree with the definitions of information literacy as the ability to use a computer, followed by 32 (17%) who are neutral, whilst 29 (15%) agree and another 29 (15%) disagree whereas only 22 (11 %) of the respondents strongly disagree.

4.3.2.6. Learning about specific hardware and software applications

Figure 4.6 above again shows that 83 (42%) are neutral with the definition of information literacy as the ability to learn about specific hardware and software application, followed by 33 (17%) who agree, whilst 33 (17%) disagree and 22 (11%) strongly disagree whereas only 21 (11 %) of the respondents agree.

4.3.2.7. Locate books in the library

Figure 4.6 above again shows that 56 (29%) agree with the definitions of information literacy as the ability to locate books in the library, followed by 43 (22%) who agree,

whilst 42 (22%) strongly agree and 34 (18%) strongly disagree whereas only 17 (9%) of the respondents are neutral.

4.3.2.8. Ability to read and write

Figure 4.6 above again shows that 122 (64%) strongly agree with the definitions of information literacy as the ability to read and write, followed by 44 (21%) who agree, 13 (7 %) disagree. 10 (5%) strongly disagree whereas only 3 (1 %) of the respondents are neutral.

These results show that most of the students did not know and have a different perception of what “Information Literacy” is. Their perception of information literacy is not the same as the perception that is used in library and information science environment. Figure 4.6 indicate that most of the students, that is, 122 (64%) perceive information literacy as the ability to read and write. Webber and Johnston (2000: 381) also comment that previous research has identified lack of information on how students experience and define information literacy.

Ranaweera (n/d: 2) wrote:

“Traditionally, literacy means the ability to read and write. But there seems to be various types of literacy, of which many students are not aware of, such as audio-visual literacy, print literacy, computer literacy, media literacy, web literacy, technical literacy, functional literacy, library literacy and information literacy etc. Nominal and active literacy too focuses on making people aware to read and write in their day to day activities. Information literacy is quite different to the above. It is a combination of all these concepts but goes beyond them”.

Again, students who have never attended an ILEP or attend it for the first time tend to associate the concept with ability to use the computer as shown by 80 (41%) respondents who “strongly agree” with the statement that information literacy is the ability to use a computer. Bainton (2001) remark that discussion of skills in higher education often conflate information technology skills and information skills. In a study

conducted by Webber and Johnston (2009) where students were asked what information literacy is, one of the small discussion group responded that “it is about effective understanding computer technology better, including the internet and /or improving confidence in using technology. This shows that most students think that information literacy is computer literacy.

However, Oyelekan (2011) shows that information literacy has much broader scope than computer literacy and library literacy. Computer literacy emphasises the ability to use software or computer applications to access information, whereas information literacy is more than that. Information literacy not only requires knowledge and use of computers to access information, but involves handling, evaluating information and even using it effectively.

Corrall (1998) draws distinction between IT skills and information handling skills thus:

“IT skills include basic computer skills such as use of keyboard, mouse, printer and disk management, standard software packages such as word processing, spreadsheets and data bases, as well as network applications such as electronic mail, internet and web browsers. Information handling skills on the other hand includes knowledge of information sources, evaluation criteria, navigation methods, manipulation techniques and presentation issues. Computer literacy is therefore one of the components of information literacy. Therefore, both information skills and information technology skills are essential parts of a wider concept of “Information Literacy”

Another noteworthy response regarding the respondents’ perception of the concept “information literacy” is when only four (2%) of the respondents “strongly disagree” with the statement that “information literacy is the ability to identify information sources and resources that are likely to meet the information needs. The study by Webber and Johnson (2009) show similar results when some groups mentioned that it is “about

increased awareness of what information sources are available in a variety of media. Other groups in this study view information literacy as analysing and interpreting information, useful in career and for job seeking, help in improving communication skills, useful for self-development, useful for leisure activities, etc. This also shows that the respondents, as first year entering students, who come from disadvantaged schools that are without school libraries, may not be in a position to know what “Information Literacy” entails.

However, there were some respondents who had a perception of what “information literacy” is, as perceived in library and information science fields, that is, more especially those who “strongly agree” that information literacy as the ability to recognise the information need with ninety one (47%) respondents; ability to evaluate and use information effectively with eighty-five (44%); as well as the ability to search and retrieve information with eighty (42%) respondents. A person who has such skills is also able to use critical thinking, analysis and sense-making and independent thinking skills. Bury (2016) makes reference to the studies that were carried out to explore the faculty definition of information literacy in the context of current digital information landscape. From these studies, it was found that the academics see access to and retrieval of information as key to the concept of information literacy. Others referred to fostering of critical thinking skills as being fundamental element of information literacy, while other refer to information literacy more in terms of the ability to engage in analysis and sense making. It is therefore believed that effective pedagogy of information literacy should develop students as independent thinkers and learners. Furthermore, Bury (2016) makes reference to studies which found that faculty see information literacy as fundamentally integrated with other types of literacies such as reading comprehension, vocabulary and writing. They see information literacy as part of a larger academic discourse.

4.3.3. Students’ information literacy competencies and skills

After having established the perceptions of the respondents regarding the concept “Information Literacy”, the next step was to measure their information literacy

competencies and skills, that is, before they attend ILTP. This was done in order to establish if students are able to apply information literacy skills and competencies and in the long run establish if they regard themselves as information literate students. Therefore the above heading is about the assessing the abilities of the respondents with regard to accomplishing information literacy competencies and skills. This was also measured using the Likert scale in and Humanities faculties as follows thus: 1 = To no extent at all; 2 = To some extent; 3 = Average; 4 = To a large extent; and 5 = To a very large extent. The results are depicted in figure 4.7 below and described from item 4.3.5.1 to 4.3.5.8.

4.3.3.1. Retrieving of relevant information for assignments

Figure 4.7 indicates that 135 (70%) can “to some extent” retrieve information relevant to their assignments, while 22 (11%) “to no extent” cannot do that, and 21 (10%) “to no extent at all” cannot retrieve information relevant to their assignment. Seven (3%) can” to a large extent” and “to a very large extent” retrieve information relevant to their assignment each.

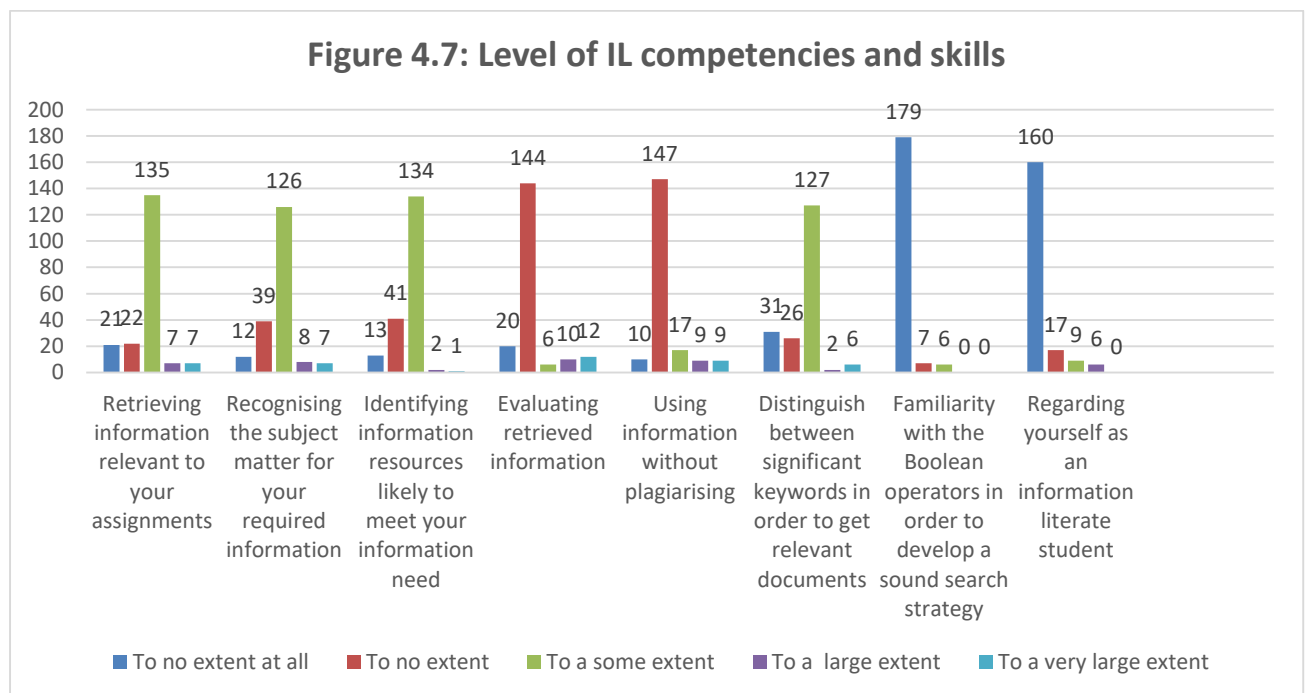


Figure 4.7 Level of IL competencies and skills (N = 192)

4.3.3.2. Recognising the subject matter for the required information

The results in Figure 4.7 show that 126 (66%) can “to some extent” recognise the subject matter for the required information, while 39 (20%) “to no extent” cannot do that, and 12 (6%) “to no extent at all” cannot do that also. Eight (4%) can “to a large extent” and 7 (4%) “to a very large extent” recognise the subject matter for the required information.

4.3.3.3. Identifying information resources to meet the required information need

It is depicted further in Figure 4.7 that 134 (80%) can “to some extent” identify information resources to meet the required information need, while 41 (21%) “to no extent” cannot do that, and 13 (7%) “to no extent at all” cannot identify information resources to meet their required information need. Two (1%) can “to a large extent” and 1 (1%) “to a very large extent” identify information resources to meet their required information need.

4.3.3.4. Evaluating retrieved information

Figure 4.7 further shows that 144 (75%) can “to no extent” evaluate retrieved information, while 20 (10%) “to no extent at all” can do that, and 12 (6%) “to a very large extent” can evaluate retrieved information. Ten (5%) can “to a large extent” and 6 (3%) “to some extent” can evaluate information retrieved

4.3.3.5. Using information without plagiarising

Furthermore, figure 4.7 shows that 147 (77%) “to no extent” can use information without plagiarising, while 17 (9%) “to some extent” can do that, and 10 (5%) “to no extent at all” cannot use information without plagiarising. Nine (5%) can “to a large extent” and “to a very large extent” use information without plagiarising.

4.3.3.6. Distinguish between significant keywords in order to get relevant documents

Figure 4.7 show that 127 (66%) can “to some extent” can distinguish between significant keywords to get relevant documents, while 31 (16%) “to no extent at all” cannot do that, and 26 (13%) “to no extent” can distinguish between significant keywords to get relevant documents. Six (3 %) can “to a very large extent” and 2 (1%)

“to a large extent” can distinguish between significant keywords to get relevant documents.

4.3.3.7. Familiarity with the Boolean Operators in order to develop a sound search strategy

Figure 4.7 shows that 179 (93%) “to no extent at all” are familiar with Boolean Operators, while 7(4%) “to no extent” are not, and 6 (3%) to some extent are familiar with Boolean operators.

4.3.3.8. Regarding yourself as an information literate student

Figure 4.7 show that 160 (83%) can “to no extent at all” regard themselves as information literate students, while 17 (9%) “to no extent” do not that, and 9 (5%) to some extent do. Six (3%) ” to a large extent” regard themselves as information literate students do. Students who regard themselves as information literate are the one ones who are able to recognise the need for information, locate, evaluate and use information.

The largest number of respondents are those who “to no extent at all” are not familiar with Boolean operators to develop a sound search strategy with 179 (93%) of the respondents. Julien and Barker (2009: 13) demonstrates that there is a widespread concern about lack of searching skills and critical evaluation skills among undergraduate students. Machet (2012:101) comments database searching is based on the principles of Boolean logic, which refers to the logical relationship among search terms, and is named after the British-born mathematician George Boole. Boolean operators form the basis of mathematical sets and database logic. They are used connect search words together to either narrow or broaden a set of results. The three basic Boolean operators are: AND, OR, and NOT. Boolean operator are also used to focus on a search, particularly when the topic contains multiple search terms and to connect various pieces of information to find exactly what the user is looking for. Shanahan (2006: 189) shows that the Boolean operator OR improves the depth of the search, whilst Boolean operator AND, improves the breadth of a search.

Furthermore, students cannot identify their information need by choosing the most relevant keywords from the topic, as well as identifying synonyms that may denote

those keywords as shown by 127 (66%) respondent who “to some extent” can do that. Julien and Baker (2009:13) show that students demonstrate poor search skills, which include selecting search terms. Machet (2012: 100) advises that once you have identified your keywords and key concepts from your topic, it is a good idea to think of synonyms or other terms that may be used to describe it.

The other response that earned a high score rate was about the respondents who “to no extent” can use information without plagiarising and who cannot evaluate retrieved information with 147 (77%) and 144 (75%) respondents respectively. These results also show that the majority of respondents do not know how to use retrieved information without plagiarising. This means that the first entering students have problems with using information ethically, including acknowledgement of sources as well as avoiding plagiarism. It is necessary to provide information about plagiarism during the orientation session for incoming undergraduate students for the main purpose of the students to understand the significance of plagiarism.

Barnhart (1988, 801) traces the etymology of the word plagiarism (‘literary theft’), from the earlier English word plagiary (‘one who wrongfully takes another’s words or ideas’), derived from the Latin *plagarius* (‘kidnapper, seducer, plunderer, literary thief’), from *plagium* (kidnapping) from *plaga* (snare, net). Park (2003:472) also, concur with Barnhart (1988:801) above by further defining plagiarism as stealing the words or ideas of someone else and passing them off as one’s own without crediting the source’ and ‘a theft of words or ideas beyond what would normally be regarded as general knowledge. According to Nilsen (2012:10) students lack the skills to critically evaluate the abundance of online information, do not understand issues such as scholarly authority, ownership and plagiarism, and require assistance in learning how to use research databases and other library search tools.

Librarians around the globe are therefore seeing an increased interest in the problem of students’ plagiarism from both faculty and administrators and individuals working outside higher education (Lampert 2008: 35). As a result a question as to whether

librarians should be the ones who are concerned with teaching the students about plagiarism has gone unanswered. Lampert (2008: 35) poses the following questions:

- Should librarians be involved in developing curricular and instructional solutions to combat plagiarism?
- It is appropriate for librarians to teach techniques to students and faculty on ways to avoid plagiarism within the instructional sessions
- Should the libraries offer self-paced tutorials on citation documentation styles
- Or rather, is it more the role of writing instructor, faculty or tutoring centres to work with students on learning how to cite and sources ethically into their papers and research?

The task of instructing undergraduate students how and when to acknowledge information sources accurately and ethically should be the part of the roles and responsibilities of information literacy librarians, in collaboration with faculty academics and educators. Librarians should be involved because many of the bibliographic management products such as RefWorks and Mendeley are designed to be linked to full-text library databases. Therefore there is no way in that they can just talk to students about these products without mentioning plagiarism. On the other hand, the academics in the faculties should also teach students about writing skills.

The second response also shows that most of the students are not familiar with applying appropriate criteria for evaluating retrieved information from sources such as books, articles as well as websites effectively. Out of hundred and ninety-two (192) respondents, hundred and forty-four (75%) showed that they can “to no extent” evaluate retrieved information. Evaluating retrieved information includes being unable to determine relevance and scientific validity and accuracy of information sources (Machet 2012: 13). Hjørland (2012) presents and discusses twelve (12) different approaches to the evaluation of information sources. Therefore, undergraduate students have a difficulty also in evaluating information, as well as appropriate citing of information sources as shown in the literature referred to by Barker and Julien (2009: 13).

Another noteworthy answer to this question is that some respondents were not sure if whether they have information literacy skills and competencies. This is shown by on

nine (5%) of the respondents who “to some extent” have the abilities for those skills and competencies, including abilities to retrieving relevant information for the assignment with 135 (70%) respondents; and the ability to identifying information resources likely to meet the information needs with 134 (80%) respondents. This entails that, immediately a student has a task in a form of an assignment to complete, they usually don’t know where to start in order obtain relevant information for the completion of that assignment. In a study conducted by Shanahan (2006) the students were asked to identify the databases they had searched to find information for completing a university assignment. Out of thirty-seven (37) students, ten (10) named only one database and three students named only two databases that they have searched, and the rest of the students did not mention any of the databases that they have searched.

4.3.4. Students’ familiarity with different library information resources

Under this heading the researcher attempted to find out if the respondents from both faculties i.e. Humanities and Management are familiar with the different information resources such as Books, Dictionaries, Encyclopaedia, Newspapers and Magazines in the library.

4.3.4.1. *Books*

With regard to books, in figure 4.3 below, 102 (53%) of the participants showed that they are familiar with books to “a very large extent”, 70 (36%) “to a large extend” and 20 (10%) “to some extent”. No participant answered that they are “to no extent at all” and “to no extent” familiar to books.

4.3.4.2. *Dictionaries*

On the dictionaries, figure 4.3 below, shows that 74 (39%) participants indicated that “to a very large extent” they are familiar with dictionaries, 70 (36%) “to some extent” whereas 48 (25%) to a large extent. Furthermore, 0 shown on the graph to indicate that the participants “to no extent at all” and “to no extent” was not applicable.

4.3.4.3. Encyclopaedias

About encyclopaedia, figure 4.3 below, shows that 70 (34%) participants indicated that they are “to a large extent” familiar with encyclopaedia, while 60 (31%) showed that “to some extent”, whereas 62 (32%) stated that “to a very large extent”. The results “to no extent at all and to no extent” is 0. The findings with regard to the encyclopaedia shows that the majority 70 (34%) of the students used them previously. The findings with the encyclopaedia shows that the majority of the participants at 34% are familiar with Encyclopaedia.

4.3.4.4. Newspapers

With regard to Newspapers, figure 4.3 below, shows that 80 (42%) participants showed that they are familiar with newspapers “to a large extent” and “79 (41%) to a very large extent” whereas 33 (17%) indicated “to some extent”. For both “to no extent at all and to no extent” results shows 0. The findings about newspapers are that the participants are familiar with newspapers hence it is indicate 80%.

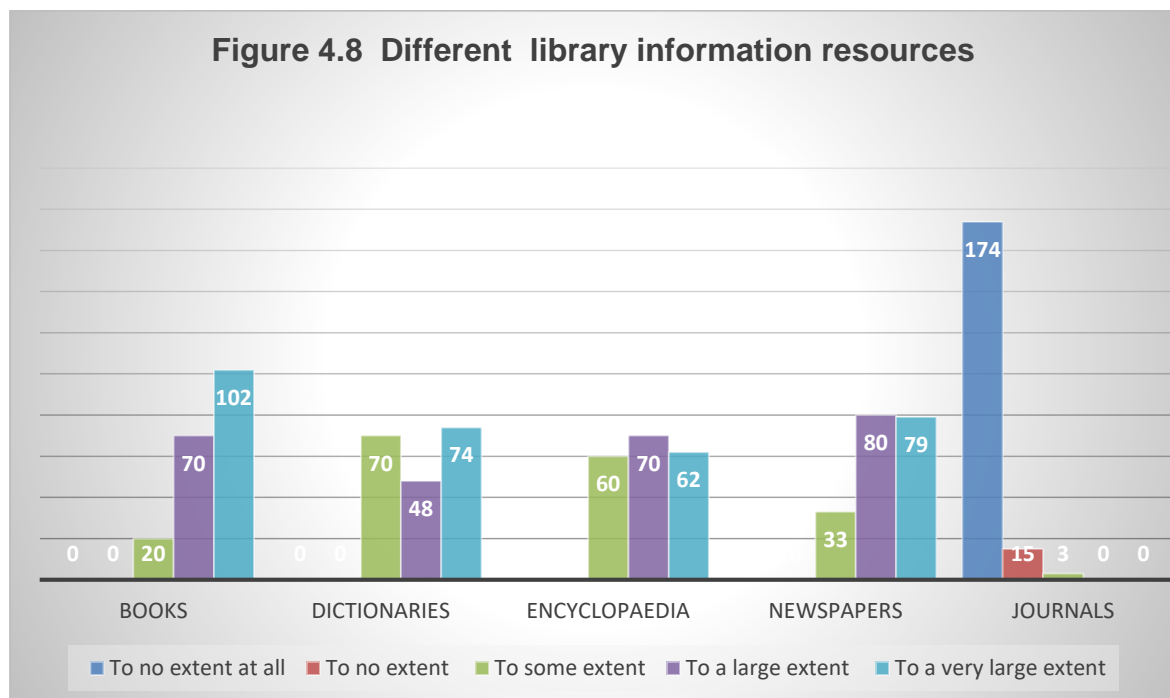


Figure 4.8 Different library Information resources (N = 192)

4.3.4.5. Journals

With Journals in the library, figure 4.3 below, shows that 174 (91%) indicated that “to no extent at all” they are familiar with journals whereas 15 (8%) responded “to no extend” and 3 (2%) showed “to some extent”. However 0 results is for both “to a large extent” and “to a very large extent”. The findings with regards to journals shows that the participants do not know what journals are and they were never exposed to journals before at their previous schools.

Books, dictionaries, encyclopaedia and newspaper are common sources that have been used by the participants from their early of schooling. This is the reason why they are “to a large extent” or “to a very large extent” are familiar with these resources. But the participants show a different degree of familiarity when they are asked about the journals. Ninety (90%) per cent to the respondents showed that they are “to no extend at all” familiar with the journals. Journals are the means of communicating scholarly information in all disciplines and most of them are highly specialised (Machet 2012: 54). Undergraduate first entering students could therefore have not heard of scholarly literature when they were still at high school.

4.3.5. Students familiarity with OPAC, Databases and Search Engines

First year undergraduate students are expected to be able to access information and information sources such online public access catalogues (OPAC); online databases such Ebscohost, Science-direct, and Emerald insight; search engines from the Internet in order to produce quality work. Therefore, under this heading the researcher attempted to find out if the respondents are familiar with the OPAC, databases which the library subscribes to and search engines. This was also measured using the Likert scale in as follows thus: 1 = Not familiar at all; 2 = Not familiar; 3 = Moderately familiar; 4 = Very familiar; and 5 = Extremely familiar. Table 4.1 below depict how participants were familiar with OPAC, Databases and search engines before they could attend information literacy.

A significant answer in the table below, on the question to do with the participants’ familiarity with the databases and search engines, the responses are as follows

according to percentages and total number of participants: Ninety (47%) of the students indicated that they are very familiar with the library Web catalogue, whereas 60 (31%) shows that they are moderately familiar with the Library Web Catalogue and 42 (22%) are not familiar and none of the respondents indicated that they are “not familiar at all” with Library Web Catalogue nor indicated “extremely familiar” with the resource. The results show that most of the students were familiar with Library Web Catalogue, followed by those who are “moderately familiar” and then those who are “not familiar” with the Library Web Catalogue.

Databases and Search Engines	1	2	3	4	5	TOTAL
Library Web catalogue	0	42 (21%)	60 (31%)	90 (49%)	0	192 (100%)
Ebscohost	192 (100%)	0	0	0	0	192 (100%)
Emerald insight	192 (100%)	0	0	0	0	192 (100%)
JSTOR	192 (100%)	0	0	0	0	192 (100%)
Science direct	192 (100%)	0	0	0	0	192 (100%)
Google	0	0	0	0	192(100%)	192 (100%)
Google scholar	0	0	35 (18%)	157 (82%)	0	192 (100%)

Table 4.1 Students familiarity with OPAC, Databases and Search Engines (N = 192)

Furthermore, on the databases such as EBSCOHOST, Emerald Insight, JSTOR and ScienceDirect etc., all 192 (100%) participants indicated that they are “not familiar at all” with the mentioned databases. This indicate that they do not have any background of databases at all before attending ILTP and they were never exposed to databases as information sources before.

With regard to the search engines, Google and Google scholar, the participants responses are as follows: For Google search engine, 192 (100%) of participants

indicated that they are “extremely familiar” with it. According to Salisbury & Karasmanis (2011) refer to the current generation of students as the Google generation. Their findings showed that students preferred Google as their first choice in finding information.

In as far as for Google scholar search engine is concerned, 35 (17 %) indicated that they are “moderately familiar” with it while 167 (89) responded that they are “very familiar” and none of the respondents showed “not familiar at all”, “slightly familiar” nor extremely familiar. Google Scholar is a free service that provides a simple way to broadly search for scholarly works and to connect patrons with the resources libraries provide (Wang & Howard 2012). It is an academic search engine which include a number of different publications which the users can use for different research projects and assignments. Examples of publications that the users can find from Google scholar are e-books, conference papers, articles citations, university thesis and dissertations etc.

Cothran (2011) used technology acceptance model (TAM) to examine the extent to which students perceived google scholar to be a resource that is useful and easy to use. A survey of 1141 students at the University of Minnesota asked questions exploring their perceptions of google scholar as part of their research process. Seventy-five percent of survey respondents had used google scholar at least once before, and a statistical analysis of the responses found that perceived usefulness, loyalty, and, to a lesser extent perceived ease of use, were positively and significantly related to the student’s intended use of the information resource (Cothran 2011: 293). Wang and Howard (2012) also analyzed Google Scholar usage San Francisco State. Overall, the data suggested that Google Scholar had become a very useful resource in the library and was a significant addition to the library's collection of research databases. The study also showed that library patrons favored Google Scholar over San Francisco State University's federated search tool.

4.4. RESULTS OF FOCUS GROUP INTERVIEW

After the students from both faculties have attended Information Literacy session, the researcher purposively selected the first ten (10) students who scored between 70% and 80% in their first assignments and conducted an interview with them in a class session, using structured questions. This group is a focus group. According to Cohen (2007:376) focus group is a form of group interview that yield a collective rather than individual review and it has the advantage of generating large amounts of data in a short period of time which was practicable within the bounds of this study. These focus group interviews were used by the researcher to evaluate and assess if students are familiar with the different themes in information literacy and if the information literacy programme offered assisted the students' academic performance and success from both Humanities and Management Sciences faculties. The main reasons for the researcher to ask the focus group short questions are as follows:

- Long questions will make lengthy discussions which will make the participants' discussion to deviate from the focus area of the study.
- Some participants may conform to the responses of other participants even though they may not agree.
- Some participants feel uncomfortable in groups and are therefore less willing to express their views or are hesitant to express their thoughts.

4.4.1. The best words to describe IL by participants

In order to establish the attitudes of students towards information literacy instruction, in the first question, the respondents were only asked to state in one or two words how the information literacy session that they attended was. All the respondents responded positively about the session. The word that appeared more frequently than the other words was "good", with eight (8) respondents, followed by "helpful" with three (3) respondents and then "useful", "fruitful" and "informative" with two (2) respondents each. The other words that appeared as a response to these questions are entertaining, understandable, beneficial, and enjoyable, worth it, exciting, great, excellent, challenging and stimulating. The researcher's findings in this theme is that participants recognised the importance of information literacy and its critical benefit.

As noted in the literature review, information literacy is important for a number of reasons - it supports learning i.e., added value to the participants' learning (Brabazon; 2007, Bundy; 2003, Bruce; 2004, 2008, Johnston & Webber 2005).

4.4.2. Students' information gathering skills

The second question posed to the respondents, was to ask them about how they gather information when they are faced with an academic project. It was expected that the students will mention something like using the library web page to search OPAC for books. The respondents showed that they gather information from resources such as "text books, Google search engine, asking previous 1st year TUT students, internet, Google scholar, websites, encyclopaedia and E-books". The fact that students did not show anything about searching books from the library catalogue show that they might have not understood that they have to use the library catalogue to find books in the library. This is therefore one area where the university library which was chosen for the purpose of this study should focus the improvement of their ILEP.

However, the fact that, they mentioned books, encyclopaedias, E-books and Library Website show that they understood that they can use these resources for completing their assignments. The study by Samson (2010) also found that students had least knowledge of information resources in different formats. This skill can also be linked to the ability of the student to determine the nature and extent of the information needed. Therefore the findings support that the ILEP is guiding students to make use of the library resources. Samson (2010: 208) say that this is "an important first step in the role of students as scholars".

4.4.3. Search process used by students

In the third question, had to do with the search processes they use to access the relevant information for completing their assignments, the respondents came up with different responses. All the responses which the participants provided that even though they may not have understood everything that was taught to them during ILEP, at least they had a basic knowledge regarding understanding the topic, identifying keywords, using databases to search for information, as well as evaluating the

information gathered. Therefore the following themes related to information gathering skills are identified:

- Identifying keywords
- Keywords search
- Databases
- Evaluation of information

4.4.3.1. Identifying keywords

“Understanding the title of the assignment”,

Before conducting a literature search, it is important to understand the title or topic of assignment. The first hurdle for one to be regarded as an information literate student is when one is able to analyse the topic in such a way that he or she understands it. Once the topic is understood, it becomes easy to select and identify keywords out of the topic. It was mentioned in the literature review of this study that Gledhill (2012) suggests that students should be able to analyse an assignment question to determine what information is needed, and to what extent. Therefore, in this study there were some respondents who recognise that understanding the nature of the topic is the first step that an information literate student should be able to do.

4.4.3.2. Keywords search

“Use key words from the assignment title given”,

Machet (2012: 100) remarks that the ability of a student to find information he or she is looking for is about how precise their queries are. This usually depends largely on the keywords that one uses to match his or her information need. This result shows that the students have also learned to define the topic for their assignment. Keyword searching is an effective way to locate information on the internet. Students should therefore learn how to select keywords to produce the best search results. Identifying keywords would also include also thinking of synonyms and other keywords that match the student's information need.

The study by Kai-Wah Chu and Law (2008) identifies the development of information search expertise of 12 beginning research students (six in education and six in engineering) who were provided with a set of systematic search training sessions over a period of one year. The results show that every student went through three stages of information needs during graduate studies, and the changes in information needs reflect the students' growth in knowledge of their subject. It was also found that the research students had problems in finding relevant information sources and that they needed to at least achieve a competent level of expertise in order to effectively locate information.

4.4.3.3. Databases

“Check the relevant databases for the assignment”,

Use of databases is considered as one of the most important skills that students must have in order to access information effectively and efficiently. The study by Samson (2001) also found that after having attended the ILEP, students were able to name some of the databases that they used to access information. Machet (2012: 13) also emphasizes knowing where and how to find information using various resources as one of the skills that students should have. Therefore, by simply showing that they have used the databases in their search process, shows that students have at least learned about the use of databases in the ILEP. To that end, Samson (2001: 208) comments that ILEP reflects its efforts to teach students to maximize their research through the use of appropriate library resources. The study on exploration of undergraduate students' experiences with information literacy conducted by Zoellner (2012) found that 80% of the students completed an assignment that used information sources such as books, articles and website after having attended the information literacy instruction than course readings after they have attended the information literacy training instruction.

4.4.3.4. Evaluating information

“Locate, evaluate, analyse and use information gathered”

The ability to evaluate and incorporate information sources for their appropriateness was also identified as one of the skills that students learned in the ILEP at TUT. The Association of College and Research Libraries Information Literacy Competency

standards for Higher Education define key areas of desirable behaviour after attending ILEP. Among these competencies and skills, is evaluation where an information literate student should be able to evaluate information and its sources critically and incorporate the selected information into his or her own knowledge base and value system. Hjørland (2012) identifies twelve different approaches to the evaluation of information sources and further acknowledges reading text often not a simple process. Therefore all these methods of evaluating information sources should be included in the information literacy content as a way of learning how to read, understand, and criticize text.

Walton and Hepworth (2011) investigated the changes in cognition associated with becoming information literate, specifically in relation to the evaluation information. Data were captured via interviews, focus groups and from the online discussion that was analysed thematically and categorized using task, behaviour, cognitive states, affective states, and knowledge. The findings indicate the complexity of the information behaviours associated with IL including the cognitive, behavioural, cognitive and affective elements. Although the cognitive transitions are the focus of this paper, an insight is also given into an IL intervention that fosters the capability to interact critically and reflectively with information (Walton and Hepworth (2011: 449 - 479). Fitzgerald (1999) also describes the challenges of evaluating information by undergraduate students.

Looking at the theoretical model on which this study is based, it is clear that first year students' information literacy skills were able move from novice to basic skills, that is, in terms of knowing where to locate information for their assignments. According to seven pillars of information literacy, the basic skill that students should possess to become information literate is the ability to recognise a need for information. Similarly, in Webber and Johnston (2000) it is envisaged that once the undergraduate students are engaging with the bottom pillars, they will aspire to engage with the top pillar, which include the ability to synthesise and build upon existing information, contributing to the creation of new knowledge, that is, once they become postgraduate students. Pullman (2016: 57) also showed that the teaching of information literacy skills begins with five

core skills, that “the students should be able to determine their information needs, to successfully access it, to evaluate it, to effectively use it and to understand the social and ethical issues surrounding its use”.

4.4.4. Motivation to attend IL training

The fourth questions posed to the respondents, was to find out what will motivate them to attend Information Literacy Training offered by the library. According to Small ...et al (2004) knowing what motivates students and how they learn is essential to teaching of information literacy to the library users. The respondents indicated responses to the question, from where the following themes were identified:

- Cooperation
- Library databases
- Plagiarism

4.4.4.1. Cooperation

“Lecturers sending us to the library to attend information literacy training”

Cooperation between the academics and library staff in encourages learner to attend ILEP is of vital importance. It is assumed that the librarians collaborate with the academics, for the academics to persuade their students to attend ILEP at the library. The Association of College and Research Libraries (2000) states it its Information Literacy Standards for Higher Education that in order for students understand, find, evaluate and use information effectively and ethically, it is necessary for the librarians, teaching staff and administrators should be involved in the integration of IL instruction throughout the higher education institution. Zoellner (2016: 242) also emphasises that commitment of library staff, teaching staff and administrators to collaboratively integrate information literacy across the curriculum. Muronaga and Harada (1999) mention that “successful collaboration is based on common goals, a shared vision, and a climate of trust and mutual respect”, while Baker and Mckenzie (1997) also emphasises that cooperation between librarians and professors is essential to the success of the information literacy instruction. Students will respond to instructions in which their professor’s voice and objectives are visible...”

4.4.4.2. *Library databases*

“When we want to know about new developments with regard to library databases”

The other aspect that motivate learners to attend information literacy training session is to know more about library databases. It was discovered in the pre-test questionnaire that the students did have any knowledge on the databases such as EBSCOHOST, Emerald Insight, JSTOR and ScienceDirect etc., all 192 (100%) participants indicated that they are “not familiar at all” with the mentioned databases. The respondents did not have any background of databases at all before attending ILEP and they were never exposed to databases as information sources before. But after having attended the ILEP, some mentioned that they are motivated to visit the library because of their keen interests to know more about databases. “A database is an organised collection of records or data presented in a standardised format that is searchable through the use of a computer” (Machet, 2012: 89).

In the study conducted by Samson (2010) it was discovered that after the information literacy training session, some first year students were even able to mention the names of some of the databases that they used. It was found that first year students retrieved their sources from general interdisciplinary databases such as Lexis Nexis Academic, Ebscohost ‘s academic search premier, as well as the library catalogue, while some have explored subject specific databases such as such as JSTOR, Science Direct, Business Search Premier (Samson 2010: 2016). In this study the students have shown that they are motivated by the desire to know more about library databases.

4.4.4.3. *Plagiarism*

“To know more about plagiarism”

Samson (2010: 207) wrote that “an information literate student understands many issues relating to the economic, legal and social issues surrounding the use of information ethically and legally”. Power (2009) also indicated that students who engage in plagiarism present a problem for all educators in higher education

institutions, and further that the ever increasing availability of materials in electronic format make plagiarism easier for students and contribute to the prevalence of plagiarism in these institutions.

Therefore, from the above participants' response on "plagiarism" the researcher can deduce that the students did not have knowledge of plagiarism at all, that is, prior to attending the information literacy training session. Only after attending a session on plagiarism they became more interested in it, to the point that this aspect of information literacy training motivates them to attend to training session in future. Perhaps this is because most teaching librarians emphasize plagiarism more especially when they teach students on using information. The study by Zoellman (2015) showed that instructors most frequently emphasise "not plagiarising another one's work when students are writing assignments and usage of quality information sources. This shows that at present after the information literacy training they are aware of what plagiarism entails, but they would like to know more about it. As such this aspect motivates them to attend ILEP.

The work by Ashworth, Bannister and Thorne (2006) reports the use of a qualitative methodology which attempts to discover the student perception of cheating and plagiarism. Prominent among the findings are the following: (a) there is a strong moral basis to students' views, which focus on such values as friendship, interpersonal trust and good learning; (b) the notion of plagiarism is regarded as extremely unclear—some students have a fear that they might well plagiarise unwittingly in writing what they genuinely take to be their own ideas; and (c) factors such as alienation from the university due to lack of contact with academic staff, the impact of large classes, and the greater emphasis on group learning are perceived by students themselves as facilitating and sometimes excusing cheating.

4.4.5. Encouraging others to attend IL training session

In the fifth question posed to the respondents, which is "whether they will encourage other students to attend Information Literacy training?" All the 10 participants

answered “Yes”, presented and provided the answers below in Table 4.2 as their motivation:

<i>“Because most students do not know how to search <u>relevant academic information</u> and how <u>to cite and reference information</u> they accessed’ therefore it is necessary to attend the IL training offered by the library”</i>
<i>“Because students will be able to access <u>relevant information</u> for their assignments”</i>
<i>“Because students will benefit from IL”</i>
<i>“Because students will get relevant useful <u>academic information</u> that they were not aware of”</i>
<i>“Because there is a lot to learn from this programme”</i>
<i>“Because most of the time we use wrong information for completing our assignments”</i>
<i>“So that students can <u>improve their assignment marks</u>”</i>
<i>“IL is very useful and important to students”</i>

Table 4.2. Encouraging other students to attend IL training

The following themes were identified in their responses:

- Cite and reference information
- Relevant academic information
- Improvement of marks

4.4.5.1. Cite information

The fact that “most students do not know how to search relevant academic information and how to cite and reference information they accessed’ therefore it is necessary to attend the IL training offered by the library” shows that most students did not know how to search academic relevant information from the internet. However, after having attended the information literacy training session, some feel that they would motivate

other students to attend the session so that they should be able to cite information. It's important for students to cite sources which they have used in the research so that they should show the readers of the works or assignment that they have done proper research by listing sources they have used. By giving credit to other researchers and acknowledging their ideas also makes them to become responsible scholars and avoid plagiarism. By citing the sources accurately will also allow the readers of their work to track down the sources they have used by citing them accurately in your paper by way of footnotes, a bibliography or reference list.

4.4.5.2. Relevant information

The immediate purpose of any ILEP is to enable students to retrieve relevant academic information for their research from the sources available. The most important sources of information for the students writing assignment are academic literature, as shown by some of the members of the focus group. Academic literature includes peer reviewed and research journals, as well as academic text books, which reflect upon and discuss the implications of results of research. In the second question in which the participants were asked about their information gathering skills most of them showed that they used text books, encyclopaedia and e-books. This type of literature investigates, records, publishes and reports the results of systematic and rigorous research that have been conducted by other researchers. Non-academic sources of literature should also be treated with attentiveness and not used to make exaggerated or generalised claims, which most of the students depended on before attending the ILEP. One of the respondents also replied that he would motivate other students to attend ILEP because "most of the time we used wrong information for completing our assignments".

4.4.5.3. Improvement of marks

The ultimate aim of any ILEP is to contribute to the students' academic success and achievement. Students attain these by obtaining more marks in their assignments. Academic achievement is the ability of students to study and remember facts and being able to communicate their knowledge verbally or down on paper in an academic

environment. Furthermore, it is the way the students will perform academically in their academic undertakings after attending the Information Literacy training session. Academic success on the other hand refers to students achieving academic goals or students succeeding academically after attending the Information Literacy training sessions. Academic success should include the tertiary institutions' expectations for being in good standing and making satisfactory progress toward a degree or diploma. In a study by Pullman (2016) it was found that most of the student ranked the role of information literacy as the most important in their academic life, than in their professional or personal lives.

4.5. CONCLUSION

The above chapter was to present the detailed findings of the study with regard to the impact of information literacy on the academic achievement of the students' experiences as well on the IL training. The questionnaire and focus group interview were analysed. The main highlights in this chapter is that after attending ILEP the students realised that IL is very essential for their academic success. Their perception of IL changed and they started to add value to ILEP. The respondents showed low level with regards to their information literacy competencies and skills before attending the programme, and then a slight improvement in their information literacy skills and competencies after attending the programme. Generally, the findings revealed that the respondents reported a relatively low understanding of information literacy before attending the course, and a relatively high understanding of information literacy after taking the course.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. INTRODUCTION

This research was about the impact that ILEP will make on the academic success and achievement of the students. The researcher has presented, analysed and interpreted data in the previous chapter. The purpose of this chapter is to summarise the research findings, present the research major findings, and propose recommendations. It also provides the conclusion derived from the findings of the study. This chapter is divided into introduction, summary, conclusions and recommendations.

5.2. RESTATEMENT OF AIM AND OBJECTIVES

The aim of the study was to identify the impact of Information Literacy Education Programme (ILEP) offered at Tshwane University of Technology (TUT) library services on the academic achievement and success of first-year entering students who have attended the programme with specific reference to Polokwane Campus library. The study sought establish the contribution of ILEP attendance on academic achievement and success of first-year entering students at TUT, Polokwane Campus. The study was guided by the objectives below.

- To understand the students' perspectives of the concept "Information Literacy";
- To measure the students' information literacy competencies and skills after having attended the ILEP;
- To determine the students familiarity with library information resources after having attended ILEP;
- To understand the students' motivation for library usage after attending the ILEP; and
- To examine students' experiences and attitudes towards the ILEP at TUT, Polokwane Campus.

5.3. MAJOR FINDINGS

5.3.1. Distribution of participants by gender

The findings revealed that there was gender disparity among the participants from Humanities and Management Sciences faculties. Out of 192 (100%) participants who participated in the study, 109 (57%) were females while 83 (43%) were males.

5.3.2 Age range of participants

With regard to age range, the findings revealed that out of 192 participants, 95%'s age range is between 18 – 25 whereas 5% ranges from 26 – 36%.

5.3.3 Availability of libraries in previous schools

The findings revealed that 8 (4%) showed that they had libraries at their previous schools whereas 184 (96%) did not have libraries in their previous schools. Due to lack of school libraries from their previous schools, all the 192 (100%) respondents in both Faculties showed that they have never attended any Information Literacy training before at their schools.

5.3.4. Impact of ILEP on the academic achievement and success of students

The findings revealed that, generally, ILEP has the positive impact on the academic success and achievement of first year entering undergraduate students. The results showed that before the students attended the ILEP at TUT, Polokwane campus, they had no idea of information resources such as journals, databases, library catalogue and other library resources. However, in the focus group interviews, that is, after they have attended the ILEP, students were able to show that they used some of these resources that they were not familiar with in their first assignment. The students also responded positively regarding their experience with the ILEP to an extent that they will encourage other students to attend the programme.

5.3.5. Students perspective of the concept IL

The findings before they attended ILEP revealed that, the students had a different understanding of the concept IL. This indicate that they were not aware of different themes of IL as perceive in library and information services environment. The majority of the participants, that is, about 122 (64%) indicated that information literacy is the ability to read and write. This proves that participants are lack knowledge of what information literacy skills in terms of library application, as indicated by Webber and Johnston (2000: 381) where they comment that previous research has identified lack of information on how students experience and define information literacy.

5.3.6. IL skills and competencies of students

The findings revealed that all the participants lacked the information literacy skills and competencies in accessing relevant information for their assignments and research projects. As participants attended the information literacy training they realised that there is more to learn for them to be independent scholars because they are now able to identify their information needs, search, evaluate and apply relevant information they gathered.

5.3.7. Students' familiarity with information resources in the library

The findings for this aspect are that 91% of the participants indicated that they are not familiar with the journals "to a very large extent". This shows that the majority of them do not know what journals are. With regard 53% (102) of the participants they are "to a large extent" familiar with books, 36% (70) showed that they are again familiar to a large extent with Encyclopaedia while 25% (48) are to a large extent familiar with dictionaries. These shows that the students are familiar with common information sources that were used at high schools, but not with information sources used at tertiary institutions like scholarly journals.

5.3.8. Students motivation to attend information literacy

It was found that students view information literacy important only when they are encouraged by their teachers or lectures to attend. The study also showed that once they attend they become more interested in learning more about databases and plagiarism.

5.3.9. Perspective of students towards ILEP

The researcher found out that ILEP is very important for the participants' academic success and these will help them adjust themselves with the academic environment. Furthermore, it was observed that the majority of the participants recognised the importance and benefits of ILEP. Again, the findings revealed that the participants are ready to encourage other student to attend ILEP because they will benefit from it academically and will be able to access relevant information for their assignments.

5.4. RECOMMENDATIONS

Information literacy training should be offered to the students from the early stage of their schooling so that as moving on towards higher level of studies they should not encounter problems with understanding, searching, evaluating and using information for their academic projects. It will be helpful for them to look for information from different sources and enhances their academic success and achievement due to the application of information retrieving skills they learnt at an early stage.

The recommendations emanate from the results and conclusion of the study within the overall objectives framework. The study therefore recommends the following:

5.4.1. Compulsory teaching of IL education

Teaching of information Literacy should be compulsory to all first year entering students across all faculties offered at Tshwane University of Technology and this will attach some form of accreditation to them to encourage participation. This is viewed

as the most effective way for enabling students to develop their information literacy skills and which will make an impact on the academic success and achievement.

- TUT is in the process of introducing a dedicated module in information literacy to all first year entering students and embed it into students' course materials for credit bearing in the near future i.e. 2018. This should happen in 2018 as proposed. Nevertheless, much literature suggests that embedding information literacy into the curriculum and teaching it within the context of a discipline are often the key to success in information literacy programmes.

5.4.2. Online Information Literacy instruction programme

According to Ewald et al. (2000:35) the advantages of online information literacy programme are that students in this environment chose a time for learning that best suits their needs and motivational levels. They further indicated that informational material of IL can be presented on the web and the librarian can participate in the discussions of students' research questions, it is easy for instructors to communicate with student at once. Again, pace of instruction is set by students and the instructional materials and exercises may be repeated as needed.

- Information literacy should be introduced online with the help of face to face lecture modes.

5.4.3. Information Literacy training assessment

Information Literacy assessment is essential because if it is done the trainer will be in a position to gauge the level of understanding to the students so that what is not clear to them should be attended to. The assessment can support and promote the learning of the students. The researcher therefore recommend the following:

- The university library should also carry out a needs assessment on information literacy training to help determine the existing gaps in the current information literacy programme training.

5.4.4. Inadequate equipment and venues

Infrastructure for teaching and training IL play a vital role in training the students. Engledinger (1998:2) state that is an important area that seems to get little attention and notice when the college and university and university administrators, librarians and faculty discuss the needs for development of information literacy among their charges. The researcher concur with the statement above because at present the infrastructure where I am working is not adequate enough for training students because it can only accommodate only 15 students per session. Support for the infrastructure will make it possible to produce information literate graduates. The researcher therefore recommend the following:

- University management should buy more computers and build more computer laboratories for students. Alternatively, the students should be provided with tablets so that they are on par with the advancement of technology and to have access of internet and databases the library subscribes to 24 hours.

5.5. CONCLUSION

The growth of the internet and proliferation of information in both electronic and printed format call for independent learners in higher institutions of learning who have skills and competencies to handle information effectively and efficiently. Those skills and competencies are referred to as information literacy. However, it appears the academics are not University libraries re identified as custodians of those information literacy skills and competencies. This study looked into the impact of information on academic success and achievement of first entering undergraduate students at TUT, Polokwane campus. This study provides the research findings based on the research objectives as outlined above.

The study found that the majority of the students never attended any information literacy training and they rely more on Google and internet as relevant for accessing information for any project they are engaged in. Most students show that the transition gap from high school to tertiary is very huge because they have to adopt to new ways

of learning using the library. Furthermore, the students need to navigate the library services that are offered and different information sources that are available for them to accomplish their studies.

In as far as the concept of information literacy is concerned the research observed that the concept is new to the students and they need to attend the information literacy training so that they become independent scholars who have information literacy skill of locating, use and evaluate information. On the question of familiarising themselves with different information sources the student should participate in any interventions that the library offer aiming at them to be information literate for success in their academic endeavour.

The study found that majority of the participants are not information literate. For the participants to possess the needed skills it is the responsibility of the library, to work collaboratively with the academic departments to provide opportunities for students to learn how to become skilled researchers. Therefore as skilled researchers, they will become more successful learners throughout their journey at tertiary institutions. In this manner students' success rate will be improved and the academic achievement will make their institutions to realise that information literacy taught by the library is one of the important skills needed. Furthermore after the attendance of information literacy training the students will be independent scholars in essence there will be a very huge impact of their academic achievement at success.

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APPENDIX A

QUESTIONNAIRE ON THE IMPACT OF INFORMATION LITERACY TRAINING

The purpose of this questionnaire is to collect data about the impact of Information Literacy training on the academic achievement and success of first year entering undergraduate students in the Faculties of Humanities and Management Sciences at TUT Polokwane campus. Please take a minute or two to complete the questionnaire. We would like to evaluate and assess if the Information Literacy programme offered by the TUT library is helpful to your performance and success. Therefore, by completing this questionnaire, you will assist us in improving our programme. Please be sincere and honest in your responses and please answer all questions.

SECTION A: Demographic information of the students

1. What is your gender?

Female	Male

2. Your age

Between 18 – 25	
Between 26 – 35	
Between 36 – 45	
Above 46	

SECTION B: PREVIOUS SCHOOL

3. Did your previous school where you matriculated have any library?

Yes	
No	
Not sure	

SECTION C: ABILITY TO USE LIBRARY RESOURCES

4. Students' perceptions towards Information Literacy

What do you understand by the concept "Information Literacy"? Please indicate how well you agree or disagree with the following statements about what you understand by Information Literacy, by ticking in the box that describes your response using the following scale: 1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree.

Information Literacy is the ...	1	2	3	4	5
Ability to recognize the information need or gap					
Ability to identify resources that will meet the information need or gap					
Ability to search and retrieve information from the information resources					
Ability to evaluate and use retrieved information					
Ability to use a computer					
Learning of specific hardware and software applications					
Ability to locate books in the library					
Ability to read and write					

5. Students Information Literacy competencies and skills

To what extent are you able to perform the following activities related to your studies? Please tick the box that describes your response using the following scale: 1 = To no extent at all; 2 = To some extent; 3 = Average; 4 = To a large extent; 5 = To a very large extent

Question	1	2	3	4	5
Are you able to retrieve information relevant to your assignments?					
Are you able to recognise the subject matter for your required information?					
Are you able to identify information resources likely to meet your information needs					

Can you be able to evaluate information that you have retrieved					
Can you use information that you retrieved to write assignments without plagiarising?					
Are you able to distinguish between significant keywords in order to get relevant documents?					
Are you familiar with the Boolean operators in order to develop a sound search strategy?					
Do you regard yourself as an information literate student?					

SECTION D: ABILITY TO USE LIBRARY RESOURCES

6. To what extent are you able to search for information from the following resources? Please tick the box that describes your response using the following scale: 1 = To no extent at all; 2 = To some extent; 3 = Average; 4 = To a large extent; 5 = To a very large extent

Library resource	1	2	3	4	5
Books					
Dictionaries					
Encyclopaedia					
Journals					
Newspapers					

7. Students familiarity with library information sources (OPAC, databases and search engines)

Library resource	1	2	3	4	5
Library web catalogue					
Ebscohost					
Emeraldinsight					
JSTOR					
Science Direct					
Google					
Google Scholar					

Your comments are welcome

.....

Thank you for completing this questionnaire

APPENDIX B: FOCUS GROUP INTERVIEW SCHEDULE

The purpose of this interview is to collect data about the impact of Information Literacy on the academic achievement and success of first year entering undergraduate students in the Faculties of Humanities and Management Sciences at TUT Polokwane campus. This interview will allow the participants to share their knowledge of Information Literacy (IL) with the researcher.

During the interview, the researcher would like to evaluate and assess if students are familiar with different themes in Information Literacy. This is done in order to confirm if Information Literacy programme offered by TUT Polokwane library is helpful to the students' academic performance and success. The interview questions which were be asked d after the students attended the Information Literacy training are in tabled below.

What are the best words in which you will describe ILTP that you have attended?
What are your information gathering skills for the assignments?
What are the search processes you used?
What motivate you to attend future information literacy training?
Will you encourage other students to attend information literacy training sessions? Please provide reasons for your answer

APPENDIX C: COVERING LETTER TO THE PARTICIPANTS

COVER LETTER - SURVEY QUESTIONNAIRE

PROJECT TITLE: THE IMPACT OF INFORMATION LITERACY TRAINING ON THE ACADEMIC ACHIEVEMENT AND SUCCESS OF THE FIRST ENTERING STUDENTS AT TSHWANE UNIVERSITY TECHNOLOGY, POLOKWANE CAMPUS LIBRARY

Primary investigator: Ms M C Molepo M. Inf. (Masters in Information Studies)

Study leader: Ms M C Molepo, Department of Media, Communication and Information Studies, University of Limpopo, Turfloop Campus

Supervisor, Dr. S. T. Bopape – Programme of Information Studies: Department of Media, Communication and Information Studies – School of Languages and Communication Studies – Faculty of Humanities, University of Limpopo – Turfloop Campus

Dear Research Participant,

You are invited to complete a survey questionnaire that forms part of my formal M Inf. studies.

This study is about finding out if Information Literacy training has an impact on the academic achievement and success of the first year entering students at Tshwane University of Technology, Polokwane Campus.

If you decide to take part in the study, you will be required to complete the provided questionnaire. The Questionnaire will be distributed and returned during the Information Literacy training session. The questionnaire will take a small portion of the training time in the library training room.

It is vital for the library to offer IL training so that student-library users are empowered with information skills to be able to use any library resources and anywhere in the world and on their own as independent scholars, i.e. without the help of the librarian.

Your participation in this study is merely by the researcher's choice of the two faculties which are Humanities and Management sciences. The data you provide will help the researcher in obtaining relevant results to do with the impact of information literacy. Once more, the results of this study might be shared with the LIS management in order to improve on the method of information literacy training and with the management who are responsible for the success rate of the students. Your identity will not be revealed.



APPENDIX D: Copy of Ethical Clearance Certificate

UNIVERSITY OF LIMPOPO

RESEARCH DEVELOPMENT AND ADMINISTRATION

The Faculty of Higher Degrees Committee and the Research Ethics Committee of the University of Limpopo have approved the formal study proposal. The ethics clearance number is TREC/11/2016: PG. Also, Tshwane University of Technology LIS Director has granted the researcher the permission to proceed with the research using the students as participants during information literacy training. All parts of the study will be conducted according to internationally accepted ethical principles.

The primary investigator, Ms M C Molepo, e-mail molepomc@tut.ac.za; Tel: 015 287 0783) – Information Training Librarian for TUT Polokwane Campus Library who is the researcher for this study. The Supervisor, Dr S T Bopape – Programme of Information Studies: Department of Media, Communication and Information Studies – University of Limpopo Tel. 015 268 4015; e-mail: solomon.bopape@ul.ac.za. Should you have any questions regarding the ethical aspects of the study, you can contact the chairperson of Turfloop Research Ethics Committee, Prof T. Mashego, during office hours at Tel. 015 268 2212. Alternatively you can contact The Research Office Manager: Research Development and Administration, Ms. N. Monene during office hours at Tel. 015 268 2212 and e-mail noko.monene@ul.ac.za

The information that you provide will be only for the purpose of this research. The results of the questionnaire will be published in a scientific journal without the identity of any research participant. The identity of the participants in the questionnaire will not be part of the study.

APPENDIX E: CONSENT FORM

Please sign the underneath informed consent if you agree to participate in the study;

CONSENT FORM

I hereby confirm that I have been adequately informed by the researcher about the nature, conduct, benefits of the study. I have also received, read and understood the above written information. I am aware that the results of the study will be anonymously processed into a research report. I had sufficient opportunity to ask questions and of my own free will declare myself prepared to participate in the study.

Research participant's name: _____ (Please print)

Research participant's signature: _____

Date: _____

Researcher's name: Molepo M C

Researcher's signature: Molepo M C

Date: _____