FACULTY OF HUMANITIES

DEPARTMENT OF LIBRARY AND INFORMATION STUDIES

ASSESSMENT OF THE IMPACT OF INFORMATION LITERACY INTERVENTIONS FOR 4TH YEAR STUDENTS AT THE NATIONAL UNIVERSITY OF LESOTHO

By

Joalane Rose Moloantoa

ID No: 201703225

Supervisor: Prof. K.H. Moahi

A dissertation submitted in partial fulfilment for the requirement of the award of

Master's Degree in Library and Information Studies

DECLARATION

I declare that the dissertation titled **"*Assessment of the impact of Information Literacy Interventions for 4th year Students at the National University of Lesotho"*** which has been submitted to the University of Botswana as a partial fulfilment of the academic requirements for the award of the Master of Library and Information Studies is my original work. I further declare that the work has not been submitted elsewhere for another degree and that various sources used in this research report have been duly cited and acknowledged.

Joalane Rose Moloantoa **……/…../……**

(Candidate) (Signature and Date)

Prof. K.H. Moahi **……/……/……**

(Supervisor) (Signature and Date)

DEDICATION

I dedicate this dissertation to my beloved parents, Mojalefa and Matokelo Moloantoa who have sacrificed so much for my education. I also want to thank them for their endless support. May God bless you.

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ACRONYMS

ACRL- Association of College and Research Libraries

ALA- American Library Association

ANCIL- A New Curriculum for Information Literacy

ANZIL- Australian and New Zealand Institute for Information Literacy

CILIP- Chartered Institute of Library and Information Professionals

CPUT - Cape Peninsula University of Technology

IL- Information Literacy

ISP- Information Search Process

NUL- National University of Lesotho

SCONUL- Society of College, National and University Libraries

SPSS- Statistical Package for Social Sciences

DEFINITION OF TERMS

Computer Literacy: Having the necessary skills and understanding of information and communication technologies (ICTs), including the hardware, the software, systems, networks including both local area networks and the internet (Tsai, et al 2019).

Emerging technology literacy: The ability to adapt to, understand, evaluate, and make use of the continually emerging innovations in information of prior tools and resources, and to make intelligent decisions about the adoption of new ones (Huda, et al 2018).

Tool literacy: The ability to understand and use the practical and conceptual tools of current information technology relevant to education and the areas of work and professional life that the individual expects to inhabit (Barathi, et al 2017).

ABSTRACT

The study intended to identify the IL interventions being implemented by NUL and to determine their impact on students' IL competencies. The primary aim was to find out whether the strategies are achieving the results of producing students who are information literate. The study was conducted at the National University of Lesotho and was guided by three theoretical frameworks: the Seven Voices of IL, the Six Frames Model and the UNESCO model. These three frameworks were chosen because they each addressed specific objectives of this study. Pragmatist paradigm and mixed methods research were employed. A sample of 310 comprising 284 students, 12 librarians and 14 lecturers were sampled through purposive and proportional random sampling techniques. Data was gathered through both questionnaires and interviews and was analysed using both quantitative and qualitative methods (i.e. SPSS and thematic techniques). The key findings of the study were: (1) students, librarians and lecturers shared a degree of commonality on how they viewed IL (2) with respect to IL interventions, the majority of participants from the three groups indicated that the university organises the following IL interventions: library orientations, library instruction lessons/courses, assignments and tasks requiring research and evaluation, collaboration between librarians and lecturers, reference services, use of ICT in library services, communication skills course, workshop and training, etc. to promote information literacy skills among students; (3) with regard to impact of IL interventions on students' competencies, the students reported that they were able to understand information need, locate, evaluate, retrieve, organize, present and communicate information effectively, however according to lecturers, most students struggle to cite sources correctly while most plagiarize their assignments. Moreover most students were not sure whether the available IL interventions enable them to make effective use of data bases, indexing, abstracting and use information ethically. The study concludes that IL interventions in place at the university may not have the desired impact on students. Therefore the study recommends that the university should design a formal IL policy and integrate IL into the curriculum.

Key words: Information literacy interventions, Information literacy, Undergraduate students, National University of Lesotho.

CHAPTER ONE

BACKROUND TO THE STUDY

1.0 Introduction

This study sought to explore the information literacy (IL) interventions that are in place at National University of Lesotho (NUL). In essence, the study intended to identify the IL interventions at NUL and determine their impact on students' IL competencies. The primary aim was to find out whether the strategies are achieving the results of producing students who are information literate.

The first chapter gives a brief overview to the topic and sets a basis for the study. It begins by defining the concept of IL and theories, highlighting the importance of IL, and types of IL interventions available in tertiary institutions. Furthermore, the chapter discusses the background of the study, research problem, purpose of the study, objectives of the study, research questions, conceptual framework, and rationale of the study. The scope and delimitations of the study, as well as foreseen limitations of the study are also discussed in the chapter.

1.1 Definition and theories of information literacy

The concept of IL has attracted varied definitions and interpretations by different scholars and organization. The famous and worldwide definition of IL was provided by the Association of College and Research Libraries (ACRL), who defined it as a "set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information" (ACRL, 2000, p. 2). The ACRL explained that an information literate person should be able to:

- Determine the extent of information needed.
- Access the needed information effectively and efficiently.
- Evaluate information and its sources critically.
- Incorporate selected information into one's knowledge base.
- Use information effectively to achieve a specific purpose.

- Understand the economic, legal and social issues surrounding the use of information, and access and use information ethically and legally (ACRL, 2000, pp.2-3)

The above definitions have influenced, and have led to the development of a wide range of information literacy theories and models (Feekery, 2013; Ferguson 2009). Moreover, ACRL came up with a Framework for Information Literacy for Higher Education for a better improvement of IL in higher learning institutions (ACRL, 2016). "The ACRL's new framework gives a better understanding of the concept of meta-literacy, which gives a transformed idea of information literacy as a principal set of skills in which students are users and originators of information who can effectively take part in collaborative spaces. It defines IL as the set of integrated skills surrounding 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, 2016).

According to ACRL, (2016) the framework is organized into six frames, each one of them having a notion that is essential to information literacy, a set of knowledge practices, and a set of dispositions. According to ACRL, (2016) the six concepts that present the frames are 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. The framework acts as an instrument for administrating the progress of information literacy programs within higher education institutions while also promoting discussion about the nature of key concepts in information in general education and disciplinary studies (ACRL, 2016). The framework further inspires thinking about how librarians, faculty, and others can address core concepts and associated elements in the information field within the context of higher education (ACRL, 2016).

In the late 1990's, the Society of College, National and University Libraries (SCONUL) published its seven pillar model of information literacy which details the seven major information skills required by all students (SCONUL, 1999). The SCONUL's seven pillar model comprises the following:

- Recognise the information needed;
- Distinguish ways of addressing gaps;

- Construct strategies for locating;
- Locate and access;
- Compare and evaluate;
- Organise, apply and communicate;
- Synthesise and create (SCONUL, 1999, p.8).

Some scholars (e.g., Markless, 2009; Elmborg, 2012) have criticised the linear, skills-based approaches to information literacy on the ground that such approaches limit the use and development of information literacy skills in non-academic contexts, which are not explored in the models. Alternatively, Elmborg (2012) argues for a critical information literacy approach, which highlights the relationships between information and people, rather than a focus on skills development. Elmborg (2012) describes information literacy as "a set of complex linked processes that are mobile, flexible, and malleable, residing in various places and in constant flux" (p. 77).

Similarly, Secker and Coonan (2013) have canvassed for a holistic definition of information literacy, when developing their 'A New Curriculum for Information Literacy' (ANCIL) model, a curriculum for tertiary students. Secker and Coonan (2013, p. 22) defined information literacy as "a continuum of skills, behaviours, approaches and values that is so deeply entwined with the uses of information as to be a fundamental element of learning, scholarship and research". Secker and Coonan's holistic definition captures the shifting and expanding understanding of literacy as it encompasses competence, knowledge, and skills.

Australian and New Zealand Information Literacy Institute (ANZIL) model developed in 2004 for institutions of higher learning in Australia and New Zealand (Bundy, 2004) is another model being used in the teaching of information literacy. The ANZIL model borrowed much of its concepts from Competency Standards for IL in Higher Education developed by ACRL in 2000. It has six standards with performance indicators attached to each standard (Bundy, 2004). The ANZIL describes Information literacy (IL) as a prerequisite for participative citizenship, for social inclusion, for the creation of new knowledge, for personal, vocational, corporate and organisational empowerment, as well as for learning for life (Uzuegbu, 2014).

According to Uzuegbu (2014), information literacy means information competency and involves the ability to access, evaluate, organise, and use information from a variety of sources. He views it is a skill that cuts across computer literacy, library literacy, media literacy, network literacy, digital literacy, and visual literacy. These skills are of a great importance as they transform students to life-long learners. Yet, the information literacy skills must be accompanied with a sound knowledge of how information systems work; understanding the various information sources and channels for meeting certain information needs (Uzuegbu, 2014).

Bruce, Edwards and Lupton (2006) developed the Six Frames Model. In this model, the six frames are defined by six attributes: (a) the individual's view of IL, (b) view of information, (c) curriculum focus, (d) view of teaching and learning, (e) view of content, and (f) view of assessment (Bruce et al., 2006). The Six frames are described in table below.

Table 1.1 Six frames model

Frames	Description
Content frame	Information is objective, IL is focused on teaching content
Competency frame	Information enhances learning, IL is focused on a set of competencies or skills
Learning to learn frame	Information is internal, IL is an approach to learning
Personal relevance frame	Information has individual significance, IL skills depend on context of an individual
Social impact frame	Information has social significance, IL is embedded into society
Relational frame	Information may be objective, subjective or transformational, IL describes complex interactions

Bruce et al. (2006)

According to Mitchell (2007), the frames describe different environments in which the influential attributes (information, literacy, curriculum, learning, content, and assessment) help in defining the context. Bruce et al. (2006) point to the final frame identified as relational and state that "Information literacy is not a set of skills, competencies and characteristics, it is a complex of different ways of interacting with information".

Mitchell (2007) highlighted that the Six Frames model is not the same as other models because it pays attention to the results that information brings on an individual rather than on a process or set of skills. For instance, it comprises three ideas, the personal relevance, social impact, and relational, that stress the impact of information in bigger settings. Furthermore, it includes metacognitive roles (learning to learn), which emphasize the importance of management tasks that focus on regulation of the information experienced. She then came to a conclusion that the Six Frames model is a framework focused on a meta-model for IL which views the impact of IL in different settings as opposed to defining what IL should look like specifically (Mitchell, 2007).

Another model being used in the teaching of IL is the UNESCO model. The UNESCO model describes eleven stages of information literacy known as Information Literacy elements, which are listed below:

- Realizing that a need or problem exists that requires information for its satisfactory resolution.
- To know how to accurately identify and define the information needed to meet the need, solve the problem, or make the decision.
- To know how to determine whether the needed information exists or not, and if it does not, know how to create, or cause to be created the unavailable information (also referred to as "creating new knowledge").
- To know how to find the needed information if you have determined that it does, indeed exist.
- To know how to create, or cause to be created unavailable information that you need; sometimes called "creating new knowledge".
- To know how to fully understand found information, or know where to go for help if needed to understand it.
- To know how to organize, analyse, interpret and evaluate information, including source reliability.
- To know how to communicate and present the information to others in appropriate and usable formats and mediums.

- To know how to utilize the information to solve a problem, make a decision or meet a need.
- To know how to preserve, store, reuse, record and archive information for future use.
- To know how to dispose information that is no longer needed, and safeguard information that should be protected (Horton, 2007, p. 22).

Even though most of these stages go hand in hand with the skills and process approaches from ACRL, the fore mentioned store, reuse, record, preserve, and dispose in the final two stages gives a totally different view. The UNESCO standard talks about the necessity for awareness based literacy, however it's stages does not discuss them specifically. The most exceptional characteristic of this model is the setting of IL within the perspective of other literacies (Mitchell, 2007).

1.2 The importance of information literacy

The importance of information literacy to students' success in the 21st century education environment cannot be overstated. Information literacy is important in higher education, especially in the present information era when most academic libraries are changing into "hybrid libraries", introducing the new e-library features to their traditional library services (Syamalamba, 2011, p. 50). Information literacy is important for college students and faculties to survive in the new information environment of "always on" information. Syamalamba (2011) maintains that without training it will be hard for users to use electronic information sources successfully. It is therefore important for information users to have the necessary skills to gain access to the needed information fast and easily from electronic sources and other sources (Syamalamba, 2011). Moreover, information literacy skills are necessary in today's world, which is characterized by information explosion, to get important information as and when it is needed (Akpovire, et al 2019). Furthermore, research evidence has shown that information literacy skills are key to student success. A study by Laskin and Zoe (2017) in the United States revealed that dedicated information literacy instruction leads to improved student success. Laskin and Zoe (2017) also noted that students that participated in information literacy workshops have significantly higher outcome measures than those who did not participate in the programme. Hart and Davids (2010) argued that information literacy education develops life-long learning skills, which not only support students' tertiary studies but also empower them in their future careers.

Erich and Popescu (2010) have outlined a number of reasons why it is necessary to integrate the teaching of information literacy skills into the university curriculum. They include:

- information literacy is action-oriented, helping to solve problems and make decisions;
- information skills are transferable from one discipline to another, from one task to another;
- information skills are needed for lifelong learning;
- information literacy helps people handle information and new technologies effectively.

1.3 Types of information literacy interventions

Institutions of higher learning across the world have come up with different types of IL interventions to develop students' skills and competencies. These include the introduction of information literacy competency based education, information literacy strategies, development and use of ICT in library services, and collaboration between faculty and library staff (Mariti, 2006; Anafo & Filson, 2014; Alkhezzi & Hendal, 2017). For instance, many African universities such as the University of Botswana, the University of Nairobi, the University of Tanzania, the University of Zimbabwe, National University of Lesotho and a couple of Nigerian universities have integrated information literacy into their curriculum to address the issue of limited information skills (Selematsela & Krooden, 2014; Baro, Endouware, Ubogu, 2010). Kpolovie and Awusaku (2016) added that some universities have embarked in the computerization of their libraries to facilitate training in ICTs skills to students in order to enable them to compete effectively in the modern global economy.

At the global level, Vishala and Bhandi (2006) have outlined a number of Information Literacy programmes in place in different institutions of higher learning. They include:

- CSU Information Competence Initiative (California State University)

This programme describes the numerous information competence initiatives throughout the CSU system. It includes descriptions of projects system wide resources and related links.

- Information Literacy and the Library (Penn State University)

This programme delivers a good picture of local initiatives in defining and implementing information literacy instruction in higher education. It illustrates efforts by librarians to

collaborate with faculty in planning and participating in the development of instruction. Also provides a list of other information literacy programs, freshman year experiences, tutorials, position papers, and bibliographies.

- Information Literacy Group (University of Calgary)

It describes the University's information literacy program, including an action plan, the recent annual report, group minutes back to February 1996, definitions and competencies, and a survey of undergraduate library use strategies. Also provides a number of links to related Internet resources.

- Information Literacy Project (University of Arizona)

It provides a good view of comprehensive and systematic information literacy planning at a large public university. These pages incorporate project development documents, competencies, definitions, descriptions of projects from other universities, program components, and links to collected data.

- IUPUI Instructional Teams (Indiana/Purdue at Indianapolis)

The programme presents information about a systematic model of instructional collaboration between librarians and faculty developed and documented in 1998. The purpose of the Project for Standardized Assessment of Information Literacy Skills (SAILS) has been to develop an instrument for programmatic level assessment of information literacy skills that is valid and thus credible to university administrators and other academic personnel.

- SUNY Connect: Information Literacy (State University of New York)

The programme involves solid reports on multi-institutional collaboration in information literacy. It includes four reports on incorporating information literacy into the SUNY system, and on development of a web-based course.

- UWired (University of Washington)

This programme involves the many facets of a remarkable programme combining technologies, librarian/faculty collaboration, and information literacy. Components include items labelled as the vision, people, places, initiatives, history and evaluation (Vishala & Bhandi, 2006).

1.4 Information literacy among university students

The learning process is now increasingly based on the capacity to find and access knowledge, and to apply it in problem solving (Baro, Endouware & Ubogu 2010; Alkhezzi & Hendal, 2017). Learning to learn, learning to transform information into new knowledge and new knowledge into applications has become more important today than memorizing specific information (Baro, Endouware & Ubogu 2010). The new paradigm gives priority to information literacy skills; that is the ability to seek and find information, crystallize issues, formulate testable hypotheses, evaluate evidence, and solve problems (Ojedokun, 2007). Information literacy is a key competency that enables students to master content and extend their investigations, become more self-directed and assume greater control over their own learning.

Research indicates undergraduate students experience difficulty in locating items from the library collection and do not understand the processes for retrieving journal articles (Hartman, 2015). While this problem appears to be common among students, some studies (for example Baro & Fyneman, 2009) show that the level of information literacy vary between male and female students. In their study on students in the Faculty of Social Sciences at the Niger Delta University, Nigeria, Baro and Fyneman observed that male students were more digitally literate and were able to utilize the internet facilities provided in the university library, use different search engines and utilize resources in the e-library section more than the female students. In another study, Fister (2012) concludes that undergraduate students may be smart people, but they still find the process of research threatening. He explains that these students do not learn the basic information skills; they only end up using trial and error methods of research, this limits their capabilities to satisfy their needs. These studies suggest that most undergraduate students lack critical information literacy skills necessary for effective learning in the modern era.

1.5 The National University of Lesotho

National University of Lesotho was established in 1945 under the catholic administration but later on, the ownership changed and the institution was co-owned by three countries namely, Bechuanaland Protectorate, Basutoland and Swaziland (National University of Lesotho, 2016). NUL is located at Roma, 35 km away from Maseru, the capital city of Lesotho. Since the last two decades, NUL has achieved significant growth both in its faculties and student population (Molopyane, 2015). Currently, the university has seven (7) faculties which offer both undergraduate and postgraduate courses. In the 2015/2016 academic year, NUL had a total of 9544 students out of which 9367 were undergraduates (National University of Lesotho, 2016).

The aim of NUL is to produce competent graduates and professionals for careers in the public sector, private sector, and for self-employment (NUL Information Office, 2010). This aim is achievable through lifelong learning because life is not static but a dynamic process (Mariti, 2006). As a dynamic and growing institution, NUL is striving to meet the needs of the nation, by producing competent and highly skilled graduates, who could take-up a call for further development of their country (NUL Information Office, 2010). As a result, being a student at NUL is regarded as an incentive towards further learning. To support this vision, Mariti (2006) indicated that students who have attended classes at NUL were given a steady foundation on which to develop their careers and future life. The university recognizes that information literacy is an asset for lifelong learning.

NUL offers an integrated university education in which classroom, community life, and related educational practices merge to address the interests and needs of individual students (Mariti, 2006). As a result, NUL cannot only be regarded as a place of learning, but a field for developing the human, social, and cultural characteristics for its students (NUL Information Office, 2010).

Teaching at NUL is used as a basis for independent learning (Mariti, 2006). As a result, there has been a change from a teacher-centered approach to that of combining both student-centered and teacher-related approaches, so that what students practice in learning can be reflected in their future lives (Mariti, 2006). The aim is to highlight the importance of independent resource-based learning. In this regard, students at NUL are encouraged as much as possible to make use of the

resources available in the library. This is line with NUL's strategic objective, which states that learning should be learner-centred (NUL Information Office, 2010).

NUL serves a community of researchers, students and academics and through its library provides various information resources to address the needs of NUL community. NUL offers four-year junior degree programmes, as well as masters' and doctoral degrees (Mariti, 2006). There is no formal policy that relates to information literacy in any of these programmes. However, to create avenues for developing information literate students, an office was identified within the library and was configured into an information literacy laboratory (Moshoeshoe-Chadzingwa, 2005). Subsequently, the library was encouraged by the structural developments to formalize a policy on information literacy but the policy lost its status in May 2004, when the Council reversed the transformation process on technical and legal grounds (Mariti, 2006).

NUL is currently implementing a number of information literacy skills intervention prorammes to familiarize students with necessary skills required to excel in today's information era. Thomas Mofolo Library serves as the main resource center for promoting information literacy at NUL. The library provides audio-visual materials, microforms, bibliographic and full-text CD-ROM databases and online databases like the EBSCO-host database (Mariti, 2006). Mariti also stated that students at NUL are exposed as much as possible to working in the electronic environment. Furthermore, the library provides a number of information literacy programmes to students. The most significant is the library orientation programme where experienced library professionals teach students how to use the library. This programme is normally organized for new students at the beginning of the first semester of every academic year. The orientation programme is intended to familiarize the new students with library resources, where, how and when to access them. Since inception, the library orientation training has gradually developed with the increasing skills of library staff (Mariti, 2006). The library also arranges for bibliographic instruction teaching to assist students to use library resources. Library instruction covers all forms of assistance offered by the library to its clients (Mariti, 2006).

Moreover, there is a specific course on information literacy usually taught to first year students. In addition, NUL library information professionals have been involved in the teaching of

students in order to impact knowledge required to attain higher information literacy levels (Nkuebe, 2016). These library professionals offer information literacy lessons in different faculties starting from third year level and upwards. This is done in a way that, for every faculty students usually get an hour slot in a week to go the library to get information literacy lessons. They usually attend these lessons together with their lecturers so that they get updated. This is done for the entire academic year. Although the only course credited with the name of information literacy at NUL is offered at first year level, the university has accredited a number of computer literacy courses, which are offered in Mathematics and Science departments as well as a communication study unit. The English department also offers a communication skills course, which is a semester course for all first year students.

Even though the library offers IL interventions at NUL, lecturers also offer IL interventions through teaching as they weave in information literacy elements in their teaching methods. They promote student centered learning as they assess students by giving them tasks such as giving out different topics to students to go do assignments and research and then present on those topics afterwards. These tasks allow students to search for information independently using the different library resources, to evaluate the information sources, to be able to paraphrase, to pick out the important information, synthesize and to acknowledge sources. This intervention helps students to develop information literacy skills and to appreciate IL as well.

1.6 Conceptual Framework

This study employed three conceptual frameworks. The first conceptual framework is based on Cunningham and Williams (2018) recent work: The seven voices of information literacy. This framework was used to look at the views and understandings of information literacy of different stakeholders. Cunningham and Williams (2018) viewed IL as a concept embracing a wide range of understandings shared by various stakeholders: students, parents, teachers, librarians, IT personnel, administrators and school leadership. However, the current study only focused on three stakeholders being students, teachers and librarians.

The second framework is the Six Frames for Information Literacy Education coined by Bruce, Edwards and Lupton (2006). This model was used to identify information literacy interventions

at NUL. The model consists of six frames: (a) content frame, (b) competency frame, (c) learning to learn frame, (d) personal relevance frame, (e) social impact frame, and (f) relational frame (Bruce, et al., 2006).

Lastly, the third framework will be the UNESCO model detailed by Horton (2007), which describes the information literacy elements that students should be able to demonstrate or carry out. The model was used to address the impact of information literacy interventions by establishing from the respondents how well they do on the elements.

The theoretical framework entails the three variables derived from the three objectives of the study. The first variable is the view of IL, and shows how different stakeholder view IL. The second variable is IL interventions, derived from the second objective of the study. This variable relates to the first variable in that the views of IL influence the type of IL interventions and the teaching of IL. The third variable is the impact of IL derived from the third objective of the study. The various views which influence the type of IL interventions and teaching turns out to impact student's skills and competencies.

1.7 Research problem

The researcher's experience as a former student at the National University of Lesotho (NUL) showed that the majority of students entering NUL do not have the necessary knowledge and computer skills required for 21st century education. As noted by Mariti (2006), many students come from significantly disadvantaged communities and therefore, are sufficiently ill prepared for the demands of the higher education academic environment. Mariti (2006) also noted that some of these students did not have functional libraries in high schools, and have never accessed electronic resources. As a result many students experience enormous challenges in trying to access information or use electronic resources available at the NUL Library. To address some of these challenges, NUL has come up with a number of IL interventions as highlighted in the background. However, it is not known whether these interventions have any positive impact on students. Since the ability to find and use information effectively and efficiently is an important requirement in modern university education, the question of information literacy among students seemed very paramount. This prompted the researcher to explore whether the information

literacy interventions in place at NUL have had any significant impact on students' competencies with regard to access and effective use of information. It is also necessary to explore whether undergraduate students have adequate IL to make effective use of the information sources provided by the NUL Library.

1.8 Objectives of the study

The study sought to achieve the following objectives:

- To understand the conceptions of information literacy by 3 stakeholders at the National University of Lesotho
- To identify information literacy interventions in place at the National University of Lesotho.
- To assess the impact of those interventions on students' IL competencies at the National University of Lesotho.

1.9 Research questions

The study was guided by the following research questions:

- What is the view of different stakeholders on information literacy at the National University of Lesotho
- What information literacy interventions are in place at the National University of Lesotho?
- What is the impact of those interventions on students' information literacy competencies?

1.10 Rationale of the study

The main rationale of this study was to investigate the information literacy interventions being implemented by the National University of Lesotho for undergraduate students. In particular, the study intended to determine whether these strategies have significant impact on students' IL.

1.11 Significance of the study

This study is important as it highlights the impact of IL intervention programmes on students' competencies at NUL. It provides information on the efficacy of these programmes, as well as adds to the understanding of information literacy skills of NUL students.

Furthermore, the study is of great importance for policy formulation by university and library management. The findings of this study will help form the basis on which the university management can engage in information literacy programmes that will address the needs of students. It is trusted that it would assist in laying the foundation on which information literacy programmes and curriculum can be designed in relation to the presumed information literacy skills among undergraduate students at NUL. To other university libraries, the research will provide an important reference point for assessing the impact of IL interventions on students' competencies.

The study may also be beneficial to information professionals working in university libraries. It is hoped that the study will help point out the strengths and weaknesses of IL interventions for undergraduate students. It will also help create awareness among students on the importance of information skills and the role it plays in their research assignments.

Lastly, the study will help in adding to the already existing knowledge of information literacy skills among undergraduate students. Although there are IL studies in Lesotho (e.g. Mariti, 2006), none exists on the impact of IL intervention programmes on students' competencies. The current study will help bridge this gap in knowledge. It will also form a basis for further research in the area of information literacy interventions in universities and other institutions of higher learning.

1.12 The scope/delimitations of the study

The scope or delimitations are boundaries that researchers enforce before commencing a study to limit the study's scope (Mitchell & Jolley, 2014). The current study delimited itself to year 4 students of NUL. The study decided to focus on year 4 students because it is assumed that

students in these levels should have acquired skills and experience in learning how to search for and access information resources. Thus they constitute suitable and appropriate population for examining the impact of these information literacy interventions on students' skills and competencies.

1.13 Limitations of the study

Limitations of study refer to those conditions beyond the control of the researcher, which may affect the results of the study (Best & Kahn, 2006). According to Patton (2014), limitations refer to potential weaknesses or problems in a study. The current study was anticipated to have a number of limitations. Firstly, the library professionals, and teachers at NUL may withhold vital information and may not provide honest answers when responding to survey questions. Another limitation likely to be encountered in this study relates to the ability to achieve the desired student population sample. The desired population is the total number of undergraduate students at year 4 levels. Attaining this sample may not be feasible as some students may not be keen in participating in the study. Time and resource constraints also constitute part of the limitations of this study. All these might have significant impact on the results and findings of the study.

1.14 Summary

The preceding chapter presented the introduction of the study on information literacy skills interventions in place at the National University of Lesotho. It discussed the notion of information literacy and theories, as well as the importance of information literacy in higher education environment. In addition, the chapter highlighted the statement of the problem, the objectives and research questions of the study, conceptual framework, significance, and rationale of the study. The scope of the study and foreseen limitations of the study were also discussed in the chapter.

CHAPTER 2
LITERATURE REVIEW

2.1 Introduction

This chapter reviews both the conceptual and empirical literature of this study. A literature review is a serious synopsis of research studies and other works, which offer insights into the research problem and helps to put it in context (Cronin, Coughlan & Smith, 2015). The chapter is prearranged into the following sub-headings: the concept of IL, IL models and frameworks, IL education and interventions, IL interventions in higher education, the role of stakeholders in IL interventions, impact of IL on students' competencies, and challenges of IL interventions and lastly, the chapter summary.

2.2 Concept of Information Literacy

The concept of information literacy arose in the 1970s following the growth of new information technologies. Information literacy is a lifelong ability to access sources of information; locate information and critically evaluate information (Hart & Davids, 2010). Developing lifelong skills is essential to the mission of higher education institutions and should provide the basis for the continued growth of students in their later careers. IL is part of those skills that extend learning beyond formal classroom settings as individuals move out of the university into areas of responsibility (Kavulya, 2003).

Since its inception, IL has produced several definitions and interpretations. Sayed (2015 p.1) defines information literacy as the lifelong ability to access sources of information, find information and critically evaluate information, not only in the academic environment but also on the work and home fronts. Erich and Popescu (2010) define IL as the ability to find, use, evaluate and communicate information effectively. According to Davids (2010), IL means the ability firstly to identify and examine a need for information and then access, evaluate, organize, manipulate and present information in a variety of media including electronic sources such as the internet and online databases. Information literacy includes library user education, information skills training and education, and those areas of personal, transferable or 'key' skills relating to

the use and management of information in the context of learning, teaching and research issues in higher education (SCONUL, 2007).

The American Library Association (ALA) states that: "To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (ALA, 1989, p.1). Similarly, the UK's Chartered Institute of Library and Information Professionals (CILIP) cited in Hart and Davids (2010, p. 8) defines IL as "knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner".

ACRL's new framework for information literacy for higher education defines IL as the set of combined skills surrounding the reflective discovery of information, the understanding of how information is formed and appreciated, and the use of information in producing new knowledge and contributing ethically in communities of learning. Students, therefore, have a greater part and responsibility in generating new knowledge, in understanding the changing aspects of the world of information, and in using information, data, and scholarship in an ethical manner (ACRL, 2016).

Although many definitions of IL exist, they all contain certain foundational elements that define an information literate person. As Streatfield and Markless (2008) note, at the heart of information literacy is the ability to identify, evaluate, organize and use the information effectively and judiciously. It encompasses library user education, information skills training and education, and those areas of personal, manageable or 'key' skills relating to the use and manipulation of information in the context of learning, teaching and research issues in higher education (Streatfield & Markless, 2008). Clearly, information literacy is central to the mission of any institution engaged in education or research, and not just a matter for librarians.

2.3 Teaching Information Literacy Skills

Research shows that not all college students understand IL concepts. In fact, literature reveals that majority of college and university students lack basic IL skills (Yeboah, Dadzie & Owusu-Ansah, 2017; Stockham & Collins, 2012). For example, a study by Educational Testing Service

(ETS) found that college students and high-school students preparing to enter college are notably lacking in the skills needed to retrieve, analyse, and communicate information available online (Foster, 2006). In their study examining undergraduate students' perceptions of information literacy in the US, Gross and Latham (2009) found that the study group viewed information seeking as focused on product outcome rather than the underlying knowledge base and skills. They (study group) also reported having very little information literacy training and the term itself did not resonate with them (Gross & Latham, 2009).

According to Stockham and Collins (2012), one possible solution for bridging the gap between understanding the need for learning IL skills and the impact on information seeking is to ensure that classroom teachers incorporate basic IL concepts starting with young school children and continuing through secondary school. As Anandhalli (2018) notes, without the knowledge of ICT and IL skills, it is difficult for one to excel in the 21st education environment. Thus, the teaching of IL skills has become imperative in colleges and universities.

Integrating library use in the school curriculum is important for promoting IL of students. Benard and Dulle (2014) in their study of IL in secondary schools in Tanzania noted that school libraries were restricted to students for most periods in the school curriculum and this immensely affected library use. Onyebuchi and Ngwuchukwu (2013) noted in their study of IL in Nigerian primary schools that students whose schools had included library periods in their curriculum performed comparatively better than students whose schools did not have library periods. These findings suggest that it is imperative for school leaders and teachers to designate specific times in the school curriculum for library use by students to benefit from the rich resources of the library and expertise of the school librarian.

Bitso and Fourie (2014) conducted a study to examine the information seeking behaviour of potential geography teachers at the National University of Lesotho based on their experiences during teaching practice. The study used a questionnaire survey of the prospective geography teachers, which produced a 74.2% (46/62) response rate. The findings showed that teachers preferred traditional information sources such as books, personal knowledge and other teachers in host schools. Modern electronic sources such as the internet were hardly used, probably due to

unavailability and teachers' limited information literacy skills. Recommendations were that more needs to be done to improve availability of information resources and teachers' information literacy skills in least developed countries such as Lesotho.

2.4 The Role of Stakeholders in IL Skills Interventions

Lifelong learning and educational movements around the world have assigned certain responsibilities to learners, educational institutions and other stakeholders in education (World Bank, 2003; European Commission, 2018). Students for example, are supposed to use IL to enhance their learning capacity, and by perceiving the amount of information and skills they need both in their education and work life (Tuncer, 2013). Tuncer (2013) argues that the way for employees to fulfil their expected mission can only be possible by acquiring, in addition to many other skills, computer, information literacy and scientific research skills. With regards to teachers, Tuncer (2013) maintains that when teachers have a certain level of these skills they provide more brilliant academic services. In the same vein, effective IL skills interventions require active collaboration of major stakeholders.

According to Bruce (1995), achieving effective information literacy education requires the collaboration of various groups in the university community. Bruce (1995) also says co-operation between stakeholders in effective information literacy education depends upon collaboration between information specialists and discipline experts to achieve curriculum innovations that foster information literacy. Breivik cited in Bruce (1995) describes such co-operation as a partnership between stakeholders with pedagogical expertise, subject expertise and expertise in information organisation and technology. Such co-operation is likely to occur, and the objectives of information literacy education can be achieved, in contexts where innovative, student-centred, approaches to teaching and learning, and innovative user-centred approaches to information provision are valued (Bruce, 1995).

University leadership and its administrative arms must foster an appropriate climate to adopt and promote a vision of collaboration (Bruce, 1995). Such leadership may come from influential individuals as well as holders of high office. Such a vision needs to be supported by the commitment of information services, especially university libraries, and academic boards. Administrators should also commit themselves to providing the necessary infrastructure for

resource-based teaching and learning. Course coordinators and lecturers have a critical role to play in ensuring the information literacy of a university's graduates. At subject level, introducing information literacy objectives, accompanied by appropriate teaching-learning and assessment strategies, ensures that students are exposed to, and begin to value, information processes and sources (Bruce, 1995).

Champion (2011) surveyed the perceptions of various stakeholders on the 21st literacy education in Scotland. A total of 17 stakeholders and consultants were interviewed in the study. The findings reveal that there have been shifts in thinking about literacy in a range of professional circles, but measures to determine how these shifts in conceptions of literacy might be translated into changes in practice were needed. Joseph (2015) explored the importance and role of stakeholders in information literacy in the accounting curriculum. The finding confirmed the importance of stakeholders in effective information literacy education.

Burhanna and Jensen (2006) suggest that developing collaborations and partnerships among academic librarians and K-12 teacher-librarians will help students make a more successful transition from high school to university by equipping them with the essential skills required to meet the information literacy demands of their 1st year post-secondary studies and beyond. The term K-16 was coined in the United States to describe education from kindergarten through completion of an undergraduate degree (Hayden, 2013). Cahoy and Moyo (2009) argue that K-16 collaboration efforts are a result of the renewed higher education outreach efforts of the last ten to fifteen years. They maintain that the purpose of K-16 collaborations is to ensure that students are academically prepared and will be able to succeed in post-secondary education. The authors further contend that "collaborating to better understand and develop students' information literacy skills are integral to impacting student academic success" (Cahoy & Moyo, 2009, p. 21).

2.5 IL Skills Interventions in Higher Education

There are different IL programmes provided in universities and other institutions of higher learning to improve students' competencies. These include library orientation, library instruction courses, individual instruction or reference service, and use of library manuals and guides (Kavulya, 2003). Kavulya notes that library orientation is mandatory in almost all the

universities in Kenya and takes place during the first and second week when students report to the university. Library orientation aims to make students aware of the library facilities, information resources and services available to them (Kavulya, 2003). It includes activities such as the distribution of informational material that describe the library system, the resources, services, introductory lectures and tours conducted by staff and demonstrations on how to find and retrieve information using different tools such as catalogues and journal indexes (Kavulya, 2003).

Williams and Evans (2008) argue that during library instruction, the librarian covers the topics of how to detect source bias, how to judge a popular versus a scholarly source and how generally to evaluate resources for appropriateness to a topic. One exercise covers the difference between popular and scholarly sources. The other exercise reviews how to evaluate sources that one might consider using. Once students are engaging in preliminary research, they have to submit an annotated bibliography. This exercise demands ten scholarly sources, four books and six scholarly journal articles. The idea is to encourage students to be selective in using sources. Also several exercises are designed to review some basics of scholarly writing from academic integrity to structural components of a research paper.

Williams and Evans (2008) further state that the first exercise in IL module is the search term triangulation exercises. The exercise is designed to get students to begin to consider ideas for their paper topic. According to them, the aim is to get students to focus on specific words that they can use in searching the library catalogue and databases for information and to get them to think in terms of asking a research question and using the paper to answer it. The motivation for this exercise is the idea that all good research begins with a puzzle.

Hart and Davids (2010) explored the effectiveness of an information literacy intervention for first year engineering students at the Cape Peninsula University of Technology (CPUT). The intervention consisted of two workshops which targeted to teach the students to find information relevant to their essays and assignments through the university's OPAC and engineering databases and to reference and cite their sources. The research evaluated students' information skills before and after the two workshops with the use of a questionnaire consisting of a set of

questions based on some of the American College and Research Library (ACRL) standards. The findings provide awareness into how information literacy education at CPUT library can be improved. The study recommended among others that more time in the timetable must be allocated to information literacy education and that lecturers should be aware of the educational role of librarians.

Hart and Davids further explain that IL skills are best learned and experienced as students undertake their "real" work, which involves the need for collaboration between library and faculty. Research indicates that an effective information literacy programme must be introduced early and be reinforced often, with assignments of increasing complexity. However, the fact that academics hardly notice the need for information literacy education brings challenges which might be worsened by online delivery of courses (Gurney & Wilkes 2008; Russell, 2009).

Secker (2011) emphasised that including IL in the curriculum and student centred learning approach in higher education institutions is very crucial. Information literacy is seen as academic learning and therefore practiced through teaching methods. The study showed that faculties should collaborate with librarians in teaching or practicing information literacy in higher learning institutions so as develop student's IL skills. Teachers therefore help students to be information literate by allowing them to research information on their own using different information resources. The findings of the study concluded that what matters the most is how IL elements are included in teaching in order to make independent learners for a lifelong learning. On the other hand Freekery, Emerson and Skyrme (2012) point out that IL instruction is widely approved outside the library as faculties in higher institutions have accepted it as a concept and therefore teachers are doing their part by taking responsibility of developing students' information literacy skills in classes. The study recommended that there should always be a link between IL and learning and embracement of learner focused pedagogies such as collaborative learning between students and teachers (Secker, 2011; Freekery, Emerson and Skyrme, (2012). This is of the great importance as it will help students to be independent learners as they don't only depend on what they are being taught by their teachers but continue to gain IL skills through writing assignments and conducting research, finding and evaluating information and acknowledging information sources.

2.6 Impact of IL Skills on Students' Competencies

Kavulya (2003) argues that IL impacts skills leading to efficient and effective use of electronic resources linked to critical thinking. He goes on to say that IL skills helps students to know how best to select the right resources for different tasks and the ability to understand issues related to accessibility such as cost and location. IL develops competence in constructing strategies for locating and accessing information. This includes the proper articulation of information need, how to match information needs against resources, the principles of construction and generation of databases, search strategies, basic use of information communication technologies, use of databases, indexing, abstracting and citation indexes (Kavulya, 2003).

Shannon and Shannon (2016) conducted a study in Wright State University in the US to test whether and how well the presence of an embedded librarian improves the quality of student research. The study was informed by the observation that students in introductory-level courses in political science have very low levels of research skills and experience. They also noted that both students and faculty tend to have only a peripheral knowledge of the role librarians can play in helping develop their research skills. The researchers compared two international politics courses taught in consecutive fall semesters with different levels of librarian involvement in the class. They assessed the changes in quality and use of information sources in the final research papers, both from a bibliographic perspective (looking at the number, quality, and variety of sources used) as well as an information use perspective (looking at the relevance of cited material in supporting arguments). The findings reveal that embedding librarians into course instruction is an effective method for improving students' research skills.

Shao and Purpur (2016) examined the information literacy skills of college freshmen at a mid-size comprehensive university in the United States. The study specifically examined the association between students' information literacy skills and their writing abilities as well as their overall performance in a class. A major finding of the study is that information literacy skills were positively correlated with both student writing scores and final course grades. Consequently, the study recommended for well-integrated library instruction programmes and services to improve student information literacy skills.

Eisenberg (2008) argues that IL skills are the necessary tools that help students successfully navigate the present and future landscape of information. IL skills give students the ability to compare, evaluate and extract information obtained from different sources while avoiding bias and selecting accurate and reliable information sources (Kavulya, 2003). In addition, they enable students to organise, apply and communicate information effectively depending on the situation. This includes proper citation, proper use of language, respect for copy right and avoidance of plagiarism (Kavulya, 2003).

2.7 Challenges of Teaching IL

The teaching of IL skills, especially in institutions of higher learning is bedevilled by a number of challenges. For example, using Kenya as a reference case, Kavulya (2003) says that IL in Kenyan universities is hampered by failure to come up with realistic and achievable objectives. These include limited time allocated to the lecturer, demonstration and tour is inadequate to impart useful skills to new university students. He also notes that the timing of library orientation programmes in the first and second week of students' life in university is poor since students at this time have little motivation to participate and may not be in a position to appreciate the centrality of the library in academic life. There is also insufficient number of staff to cope with large numbers of students in a relatively short time. Kavulya (2003) further argues that having to attend to large groups within a short time makes the orientation superficial and incomplete.

Lwehabura and Stilwell (2007) identified a number of challenges facing the teaching of information literacy in Tanzanian universities. They include 1) lack of IL policy; 2) lack of proactivity by librarians; 3) the creation of collaboration between librarians and teaching staff to mainstream IL; 4) the availability of resources; 5) inadequate library staff; and 6) fostering a willingness to learn in students. Lwehabura and Stilwell (2007) point out that none of the four universities involved in their study had a formal, clearly stated or defined IL policy. They argue that without a defined IL policy, IL will continue to be offered out of concern by a few individuals, mainly librarians, who are interested in it. In such situation, it is unlikely that efforts to teach IL knowledge and skills will be effective. Lack of an explicit IL policy for providing guidance and directives on how information literacy activities should be conducted has resulted in some existing IL programmes not being allocated official time within university timetables

(Lwehabura & Stilwell, 2007). The authors further note that the teaching of IL is conducted without a formalized programme, with inadequate resources and attended by students on a voluntary basis only.

The problems associated with the lack of an IL policy has also been noted by Kavulya (2003), who observed that in the case of Kenyan universities, inadequate support by parent organisations, in terms of both policy and materials are among the barriers facing IL. Kavulya (2003) explains that as professionals who advocate IL developments, librarians have the challenge and responsibility to cooperate with other partners in their institutions to ensure that IL policy is formulated and adopted by their respective institutions. This step would do much to ensure that IL education and training activities are being undertaken under specific defined guidelines.

A perceived lack of proactivity among librarians is another problem that affects IL programmes (Lwehabura & Stilwell, 2007). While opportunities for initiating IL programmes may exist, if librarians are not active in spearheading IL initiatives, success will be limited. According to Hartman, et al (2015) librarians have failed to clearly define, defend intellectually and articulate forcefully the role of the academic library in the intellectual enterprise of the college and university. In the same vein, Kavulya (2003) observes that there is failure on the part of librarians to push IL to the fore as a function of the university library. Kavulya notes that librarians themselves identified this problem with 26% claiming it as a significant barrier to IL development. Bruce (2001) argues that librarians need to come out and make a strong stand about the nature and value of their work, including IL. To achieve this, he suggests that it is important for librarians in universities to become more energetic in initiating and spearheading various activities, including IL that they consider important within their institutions.

In light of the foregoing, Lwehabura and Stilwell (2007) argue that there are a number of challenges that need to be tackled for effective IL education. These include formulation of an IL policy, lack of proactivity by librarians, creation of partnerships between librarians and teaching staff to mainstream IL, the availability of resources, adequate library staffing, and fostering a willingness to learn in students.

According to Kuhlthau (2014), collaboration between librarians and teaching staff is crucial because instructional work in IL can be undertaken cohesively with teachers as experts in the content and context and librarians as experts in the resources and processes. In Curzon's opinion (2004), endeavours to change views of IL from that of a service programme offered by the library to its being regarded as an integral part of the educational strategy for the entire university, requires that librarians forge firm partnerships with teaching staff.

Hepworth (2010) argues that for IL to be accepted and absorbed by students, they need to appreciate that specific learning skills, strategies and attitudes prepare them for a professional work environment, as well as helping them to achieve their immediate learning objectives. Guitierrez, Wang and Herring (2011) suggest that librarians have to take responsibility for convincing students about the importance of IL. Thus among the challenges that need to be tackled by librarians is ensuring that students, as well as other members of the institution, understand and appreciate the importance of IL and raise their levels of interest in IL.

2.8 IL Models and Frameworks

Because of the huge body of research on IL, there are many theoretical models and standards that have been developed on the subject (IL) around the world (Kimani, 2014). Most of them have been established to cater for higher education. According to Bruce (2004), these theoretical models are used to measure information literacy skills for students in institutions of higher learning, and preparing and developing information literacy curriculum for students. Therefore, discussed below are some of the models and frameworks of information literacy.

2.8.1 ACRL Information Literacy Competency Standards for Higher Education

The American Library Association's Presidential Committee on Information Literacy formulated the ACRL Information Literacy Competency Standards for Higher Education in 1989. The five standards reviewed by the Association of College and Research Libraries (ACRL) Standards Committee were approved by the Board of Directors of the ACRL in January 2000. There are five Information Literacy Competency Standards and twenty-five performance indicators

(ACRL, 2000). The standards focus upon the needs of students in higher education at all levels. The five standards state that the information literate student:

- determines the nature and extent of the information needed
- accesses the needed information effectively and efficiently
- evaluates information and its sources critically and incorporates selected information into his or her knowledge base
- uses information effectively to accomplish a specific purpose
- understands the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.

The ACRL's five standards form the fundamental foundation upon which most conceptions and applications of information literacy in higher education are built. Furthermore, the ACRL model proposes outcomes and performance indicators that can be adapted to each institution's needs. These indicators serve as guidelines for the development of measures to assess the impact of IL interventions on students' competencies and abilities. Furthermore, several information literacy models can frame the teaching of the competencies listed by ACRL. One of such models is Kuhlthau's (2004) Information Search Model (ISP). The ISP describes information seeking as a sense-making learning process of different phases each with its own strategies. The model has been tested by researchers across the world and found to apply in a variety of contexts, including online environments (Kuhlthau, Heinström &Todd 2008). The ISP undertakes that the main aim of a library's information literacy education is to improve students' understanding into the process of information management and into how each of its phases unites (Harts & Davids, 2010). This clearly cannot be achieved in once-off workshops; rather a programme or series of workshops, perhaps accompanying a project, is implied.

2.8.2 A New Curriculum for Information Literacy (ANCIL)

A New Curriculum for Information Literacy (ANCIL) model is another model that emerged recently in the field of information literacy. ANCIL was created by Jane Secker and Emma Coonan (Feekery, 2013). It was designed as practical curriculum to meet the demands of undergraduate students gaining admission into higher education and position IL as an essential,

holistic academic teaching and learning (Secker & Coonan, 2013). Secker cited in Feekery (2013, p. 23) explains how the ANCIL model works:

> The four learning bands radiate outwards from the learner at the centre. Starting with the development of practical skills, they expand through increasing complex processes establishing an evolving subject context within which to deploy the skills, high-level cognitive operations including critical evaluation, synthesis, and creating new knowledge and culminate in the conscious, reflective framework that is key to managing one's own learning.

The ANCIL model captures a broader view of IL. It identifies the importance of extending IL beyond information retrieval and towards supporting students to use information to learn (Feekery, 2013). Situating the learner at the centre of the model ensures that efforts to promote IL development are learner-focused (Feekery, 2013). The model recognises the learner's engagement with key competencies. Central and unique to the ANCIL model is transition, both into and out of the university and into the work place, and from dependent to independent learning (Martin, 2013; Secker & Coonan, 2013).

2.8.3 The Seven Pillars of Information Literacy

The Seven Pillars of Information Literacy Skill model was developed by the Society of College National University Libraries (SCONUL) Advisory Committee on Information Literacy in 1999. Since then, the model has been adopted by librarians and teachers around the world as a means of helping them to deliver information literacy skills to their learners. The model is conceived as a three dimensional circular 'building', founded on the information landscape which comprises the information world as it is perceived by an individual at that point in time (SCONUL, 2011).

The model has seven skill levels which include:

***Identify 1*:** ability to recognize a need for information;

***Scope 2*:** ability to distinguish the way in which the information gap may be addressed;

***Plan 3*:** ability to construct strategies for locating information;

***Gather 4*:** ability to locate and access information;

***Evaluate 5*:** ability to compare and evaluate information obtained from different sources, the ability to organize;

Manage 6: apply and communicate information to others in ways appropriate to the situation;

Present 7: ability to synthesize and build upon existing information, contributing to the creation of new knowledge (SCONUL, 2011).

Each pillar is further defined by a number of statements relating to a set of skills/competencies and a set of attitudes/understandings (SCONUL, 2011). It is expected that as a person becomes more information literate they will show more of the features in each pillar and thus, move towards the top of the pillar.

2.8.4 Australian and New Zealand Institute for Information Literacy (ANZIIL, 2004)

This model was developed in 2004 for institutions of higher learning at all levels in Australia and New Zealand, The ANZIIL model has six standards with performance indicators attached to each standard (Bundy, 2004). Most of its work was borrowed from the Competency Standards for IL in Higher Education developed by ACRL in 2000. Below are the six standards:

***Standard One*:** The information literate person recognizes the need for information and determines the nature and extent of the information needed;

Standard Two: The information literate person finds needed information effectively and efficiently;

***Standard Three*:** The information literate person critically evaluates information and the information seeking process;

Standard Four: The information literate person manages information collected or generated;

Standard Five: The information literate person applies prior and new information to construct new concepts or create new understandings;

Standard Six: The information literate person uses information with understanding and acknowledges cultural, ethical, economic, legal, and social issues surrounding the use of information (Bundy, 2004).

2.8.5 The Big 6 Skills (Eisenberg and Berkowitz, 1990)

The Big6 is an IL model or an information problem solving strategy which links information, problem solving and critical thinking. Moreover it is a process model of how people of all ages solve an information problem (Wolf, Brush & Saye, 2003 cited in Walton, 2009). The Big 6 skills model is one of the most well-known and used approach to teaching information and communication technology (ICT) skills, it is normally taught to students as a guide for their research (Walton, 2009). According to Eisenberg and Berkowitz (1990), the Big6 Skills model has six stages that students apply in their information problem solving process:

- Task Definition: (determining the purpose and need for information)
  - Define the problem.
  - Define the information requirements of the problem.
- Information Seeking Strategies: (examining alternative approaches to acquiring the appropriate information to meet defined needs)
  - Determine the range of possible resources.
  - Evaluate the different possible resources to determine priorities.
- Location and Access: (locating information sources and information within sources)
  - Locate sources (intellectually and physically).
  - Find information within resources.
- Use of Information: (using a source to gain information)
  - Engage (e.g., read, hear, view) the information in a source.
  - Extract information from a source.
- Synthesis: (integrating information drawn from a range of sources)
  - Organize information from multiple sources.
  - Present information.
- Evaluation: (making judgments based on a set of criteria)
  - Judge the product (effectiveness).
  - Judge the information problem solving process (efficiency).

Essentially, Thomas (2004) noted that the big Six skills model ties cognitive levels (Bloom, 1956) to various stages of the information process by identifying needs (knowledge level); relating the resources to the aspects of the problem (comprehensive level); selecting channels

and sources (application level); identifying salient elements within and across information sources (analysis level); restructuring and communicating information (synthesis level); and making judgments about the information obtained in relation to specific needs (evaluation level).

2.8.6 Information Search Process (ISP) (Kuhlthau, 1993)

This is another well-known model by Kuhlthau (1993). Information Search Process (ISP) model shows users' approach to the search process and how users' confidence increases at each stage. The ISP model is built on two decades of empirical research, showing three ways of understanding or knowledge being; the affective (feelings), the cognitive (thoughts) and the physical (actions) common to each stage (Kuhlthau, 2018). Below is the six stages defined:

- *Initiation*: When a person becomes aware of lack of knowledge or understanding and a feeling of uncertainty and apprehension are common;
- *Selection*: When a general area, topic or problem is identified and initial uncertainty often gives away to a brief sense of optimism and readiness to begin the search;
- *Exploration*: When inconsistent, incompatible information is encountered and uncertainty, confusion and doubt frequently increase;
- *Formulation*: When a focused perspective is formed and uncertainty diminishes and confidence begins to increase;
- *Collection*: When information pertinent to the focused perspective is gathered and uncertainty subsides as interest and involvement deepens;
- *Presentation*: When the search is completed with a new understanding enabling the person to explain his/her learning to others or in some way putting the learning into use.

2.8.7 The Six Frames Model

The Six Frames Model was established as a theoretical tool to help teachers in the IL education field reflect on, and analyse the changing implicit or explicit theoretical impacts on their contexts. The Six Frames model are defined by six attributes: (a) the individual's view of IL, (b) view of information, (c) curriculum focus, (d) view of teaching and learning, (e) view of content, and (f) view of assessment (Bruce, et al 2006). These frames were made by bringing together various ways of thinking about information literacy (Roy & Vartak, 2016) and the idea of seeing

problems through recognizable frames (Bolman & Deal, 1997). The Six Frames elements are presented below:

- The Content Frame
- The Competency Frame
- The Learning to Learn Frame
- The Personal Relevance Frame
- The Social Impact Frame
- The Relational Frame

The Content Frame

The Content Frame views IL as knowledge about the world of information. According to Bruce et al (2006), users of the Content Frame usually adopt a discipline orientation. Their focus is on what learners should know about IL. Assessment of IL typically quantifies how much has been learned.

The Competency Frame

The Competency Frame views IL as a set of competencies or skills. This Frame suggests that information adds to the performance of the related skill. Users of the Competency Frame usually adopt a behavioural or performance orientation. They ask what learners should be able to do, and at what level of competence (Bruce et al., 2006). A programme of instruction is usually followed to acquire the required competencies. Assessment of IL typically seeks to specify what level of skill has been achieved.

The Learning to Learn Frame

This frame suggests that IL is a way of learning. It believes information is subjective and internalised by learners. Users of the learning-to-learn frame usually adopt a constructivist orientation. They ask what it means to think like an information literate professional, for example an architect, engineer, journalist or landscape designer. They are also interested in what will help learners construct knowledge appropriately, and develop learning processes that foster the development of professional thinking patterns. Assessment of IL seeks to determine how information processes have informed learning or learners approach to the problem at hand.

The Personal Relevance Frame

The Personal Relevance Frame states that IL is learned and is different for different people/groups. Users of the Personal Relevance frame usually adopt an experiential orientation. In relation to IL education they need learners to develop a sense of what IL can do for them. They are interested in the kinds of experiences that are required to enable learners to engage with the subject matter (Bruce et al., 2006).

The Social Impact Frame

The Social Impact frame suggests that information has social significance. This frame believes that IL is embedded into society. Users of this frame usually adopt a social reform orientation. Their interest is in how IL impacts society, in how it may help communities inform significant problems.

The Relational Frame

The Relational frame posits that information may be objective, subjective or transformational. It believes that IL describes complex interactions. Users of the frame are oriented towards the ways in which learners are aware of IL or specific relevant phenomena associated with IL. They are interested in designing experiences that help learners discern more powerful ways of seeing the phenomena in question.

2.8.8 The UNESCO Model

The UNESCO model describes eleven stages of information literacy known as the Information Literacy elements. They are:

- Realizing that a need or problem exists that requires information for its satisfactory resolution.
- To know how to accurately identify and define the information needed to meet the need, solve the problem, or make the decision.
- To know how to determine whether the needed information exists or not, and if it does not, know how to create or cause to be created the unavailable information (also referred to as “creating new knowledge”).

- To know how to find the needed information if you have determined that it does, indeed exist.
- To know how to create, or cause to be created unavailable information that you need; sometimes called "creating new knowledge".
- To know how to fully understand found information or know where to go for help if needed to understand it.
- To know how to organize, analyse, interpret and evaluate information, including source reliability.
- To know how to communicate and present the information to others in appropriate and usable formats and mediums.
- To know how to utilize the information to solve a problem, make a decision or meet a need.
- To know how to preserve, store, reuse, record and archive information for future use.
- To know how to dispose information that is no longer needed, and safeguard information that should be protected (Horton, 2007).

Even though most of these stages go hand in hand with the skills and process approaches from ACRL, the fore mentioned store, reuse, record, preserve, and dispose in the final two stages gives a totally different view (Mitchell, 2007).

2.8.9 The Seven Voices Model

The Seven Voices model developed by Cunningham and Williams (2018) presents the different conceptions of information literacy held by seven stakeholder groups. These Seven Voices are: student, parent, teacher, library, IT, administration and leadership. The stakeholders have different conceptions of IL. For example, *Students* view IL *as a process of using IT tools; a set of information skills*; and fair and ethical use of information. *Parents conceive IL as a process of using IT tools; IL is a set of information skills*; knowing how to stay safe online; and a way of learning. For *Teachers*, IL means *a process of using IT tools; a set of information skills*; IL is content reading to extract relevant information; understanding the nature of information. *Librarians* view IL *as a process of using IT tools; a set of information skills*; critical thinking about information; and a way of learning that can be independent collaborative/lifelong learning. For *IT* IL means *a process of using IT tools; a set of information skills*; IL in combination with

IT literacy skills is a way of learning how to learn. *Administrations* view IL as *a process of using IT tools; a set of information skills*; IL is information context agility. Lastly, for Leaderships IL means *a process of using IT tools; a set of information skills*; critical inquiry for action embedded in the curriculum; and a cognitive agility. There is a degree of commonality among the seven stakeholders in understanding IL as a process of using IT tools and as information skills.

Cunningham and Williams explain that all stakeholder groups perceived their information context (IC) to be characterised by three dimensions: the environmental, social human and affective. These three dimensions are related and form part of the whole perceptual orientation and experience of the information context. According to Cunningham and Williams, the perceptions of information context play an important role in shaping stakeholders understanding of information literacy (Cunningham and Williams 2018).

Cunningham and Williams further maintain that a degree of interaction is apparent between the ranges of conceptions of IL held by the school community and adopt Wagner's (2014) seven survival skills as essential for the 21st century student:

- Assessing and analyzing information
- Critical thinking and problem solving
- Effective oral and written communication
- Curiosity and imagination
- Collaboration across networks & leading by influence
- Agility and adaptability
- Initiative and entrepreneurialism

2.9 Critique of the Models

The above mentioned IL models have similarities, strengths and weaknesses. In terms of similarities, all the IL models designate several skills that the information literate person ought to possess. They also share the same principle that IL skills are a continuum (Catts & Lau, 2008).

They further demonstrate the ability to identify an information need and the ability to locate, evaluate, retrieve and apply information and to communicate new knowledge (Kiman, 2014; Bilawar & Pujar, 2011).

With respect to their strengths, the researcher highly appreciates the IL models as they have contributed to the theoretical foundation of IL development. The theories are used to link the planning and teaching of IL at all levels of education in the world. They are also used to benchmark information literacy skills among students in higher education (Kiman, 2014; Salleh *et al*., 2011). The SCONUL's Seven Pillars of Information Literacy which was developed in 1999 was also revised and updated in 2011. The revision was intended to moderate the gaps in other IL models. For example, the model has combined ICT skills which in other IL models such as ISP, ANZII and the Big6 are not clearly indicated. Moreover, the Seven Voices model developed by Cunningham and Williams (2018) is one of the most recent model of IL which entails that the perceptions of information context play an important role in shaping stakeholders understanding of information literacy in the 21st century. For example, one of its IL definitions is IL as a process of using IT tools other than other models which were implemented before technology.

Even though the models have strengths, we can't ignore the fact that they also have weaknesses. The digital era renders some of the IL models weak and inadequate. This is because they were developed before the technologies, social media, open access platforms, mobile apps, and digital repositories and so on, that are now used to circulate information (Martin, 2013; Mackey & Jacobson, 2011). Moreover, these models have not been revised except for one model, to reflect the current trends in information technologies, and emerging technologies. Most of the IL

models have been defined by experts in a narrower form because of not being holistic in nature (Byupustakawan, 2008). For example, the Information Search Process (ISP) and the Big6 skills are based on an imposed query given to students in a classroom environment. They are also centered on a sole individual, ignoring the potential social contexts in the information seeking process. The ISP and Big6 models are also centered on specific kind of research process or information problem solving related to classroom assignments, while IL skills ought to be for lifelong learning, students have to acquire such skills beyond colleges and universities (Byupustakawan, 2008). In addition the ACRL's IL Competency Standards for Higher Education and ANZIIL Framework also have a limitation in that they both look at information as static and found in distinct units. However, today's information interactions are more collaborative (Martin, 2013).

2.10 Theoretical Framework

Having looked at various frameworks, this study will use a combination of three theoretical frameworks: the Seven Voices of IL, the Six Frames Model and the UNESCO model. These three frameworks are chosen because they each address specific objectives of this study. For example, the Seven Voices is relevant to the first objective because it will help the researcher to appreciate and understand the views that different stakeholders have about information literacy. The Six Frames is relevant to the second objective, as it will be used to identify and evaluate the information literacy interventions in place at NUL. Lastly, the UNESCO model is relevant to the third objective and will be used to assess the impact of information literacy interventions on students' IL competencies at NUL.

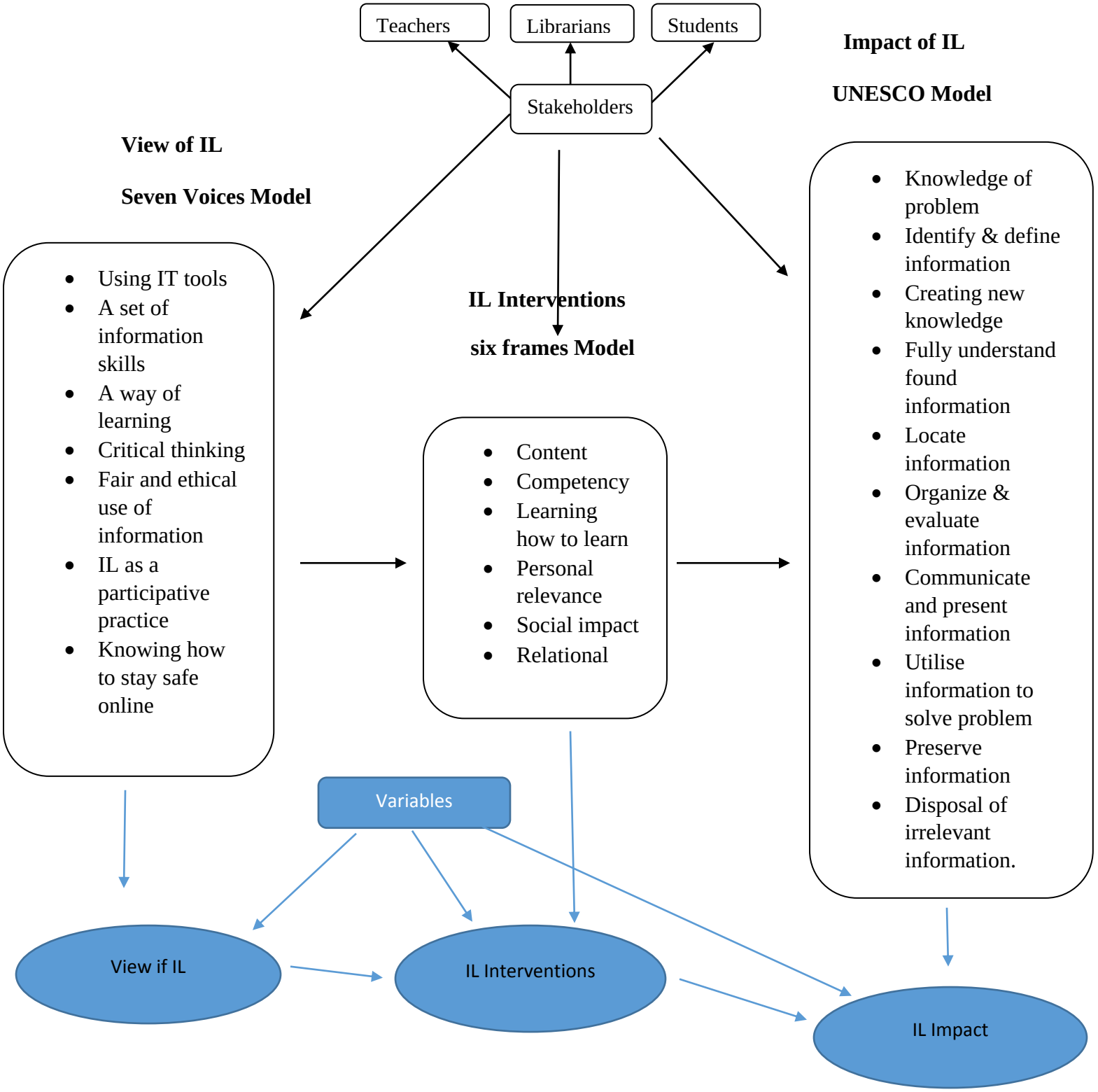
Teachers
Librarians
Students
Stakeholders
Impact of IL
UNESCO Model
View of IL
Seven Voices Model
IL Interventions
six frames Model
Using IT tools
A set of information skills
A way of learning
Critical thinking
Fair and ethical use of information
IL as a participative practice
Knowing how to stay safe online
Content
Competency
Learning how to learn
Personal relevance
Social impact
Relational
Knowledge of problem
Identify & define information
Creating new knowledge
Fully understand found information
Locate information
Organize & evaluate information
Communicate and present information
Utilise information to solve problem
Preserve information
Disposal of irrelevant information.
Variables
View if IL
IL Interventions
IL Impact

Figure 1: Conceptual framework

Figure 1 highlights the three important stakeholders in the teaching of IL: teacher, librarian and students. It suggests that stakeholders have different views or conceptions of IL. Cunningham & Williams, (2018) conducted a study and found out that even though it is difficult to have one definitive definition of IL, different stakeholders have their own views of what IL is. From their study of seven (7) stakeholders that included leaders, administrators, IT, librarians, teachers, parents and students, they identified twenty seven (27) views about IL which they summarized into five (5) views being; IL as a process of using IT tools, IL as a set of information skills, IL as a way of learning, IL as critical thinking, and then there were five others in the last group which included IL as content reading to extract relevant information, which can be subsumed under IL as a set of information skills, and the other one was IL in combination with IT literacy skills and learning how to learn of which will be subsumed under IL as a way of learning. The researcher picked the last three (3) being IL as a participative practice, fair and ethical use of information and knowing how to stay safe online to be on their own because they don't fit anywhere under the fore mentioned groups. However in this study, the stakeholders that the researcher felt were important for the purpose of the study would be librarians, teachers (lecturers) and students.

Some of the stakeholders see IL as knowing how to use IT tools, these are people who believe in IL as a set of computer skills such as being able to search for information using a database. Some see IL as a way of learning, this means they see information as subjective. They believe learners internalize and conceptualize information as a way of learning. Moreover some see IL as an information skill. This means they believe that, in order for one to be information literate they need to have IL skills such as being able to search, find or locate and use information and also being able to assess it. Some see IL as critical thinking about information. These are people who don't take information for granted but evaluate and think about it critically. Some see IL as fair and ethical use of information. These are people who consider ethics when coming to information. For example they acknowledge people every time they use their information to avoid copying or plagiarism (Cunningham & Williams 2018; Bruce, et al 2006).

These various views influence the type of IL interventions and the teaching of IL, which in turn, impact students' IL skills and competencies. According to Bruce, et al (2006) IL interventions can be classified under six frames of IL interventions or teaching. These frames are determined by people's conceptions of IL which are the views of IL, views of information, curriculum focus, views of teaching and learning, views of content and the views of assessment. The frames include content based IL teaching, this is about teaching IL principles within a discipline based subject. An assessment is usually made in order to rate what has been learned. For example, a teacher teaches or transmits knowledge to students and provides an exam to test the students' understanding or IL. Competency based IL teaching, this is whereby a teacher uses a sequence instruction to teach the use of electronic tools. They believe in IL as a set of computer skills. Assessment of IL is done to determine the level of skills or competencies that students have acquired. Learning to learn based IL teaching is believing in using real life problems in which the need to assess, evaluate, and use information from different sources is important. This is done because the interest is in what will help learners create knowledge in a good manner and develop professional thinking patterns. For example a teacher can give out a real problem and in order for learners to solve such a problem, they need to go find information and research about the problem. Personal relevance based IL teaching believes in relevance and meaning. It is project based and enables students to engage with relevant information resources and reflect on the process. Social based IL teaching adopts a social reform orientation. The main concern is in how IL impacts society and information is viewed within social contexts. In this frame, the content shows how IL can be important on social issues or problems. Learners are assessed in terms of their understanding of how IL could impact the social problem. Relational based IL teaching believes IL is about different ways of interacting with information such as viewing it as objective, subjective or transformational. An example can be helping learners to discover new ways of seeing or finding information (Bruce, et al 2006).

In order to determine the impact of IL interventions on students, the researcher used the UNESCO Model. According to Horton, (2007) UNESCO has identified a number of skills and competencies students should have to be information literate. The skills and competencies are as follows:

- Realizing that a need or problem exists that requires information for its satisfactory resolution.
- To know how to accurately identify and define the information needed to meet the need, solve the problem, or make the decision.
- To know how to determine whether the needed information exists or not, and if it does not, know how to create or cause to be created the unavailable information (also referred to as "creating new knowledge").
- To know how to find the needed information if you have determined that it does, indeed exist.
- To know how to create, or cause to be created unavailable information that you need; sometimes called "creating new knowledge".
- To know how to fully understand found information or know where to go for help if needed to understand it.
- To know how to organize, analyse, interpret and evaluate information, including source reliability.
- To know how to communicate and present the information to others in appropriate and usable formats and mediums.
- To know how to utilize the information to solve a problem, make a decision or meet a need.
- To know how to preserve, store, reuse, record and archive information for future use.
- To know how to dispose information that is no longer needed, and safeguard information that should be protected (Horton, 2007).

Figure 1 further shows the relationship between the three variables derived from the objectives of the study. The first variable being view of IL which is derived from the first objective of the study (understanding the conceptions of information literacy by 3 stakeholders at NUL) shows different ways of viewing IL which are: using IT tools, A set of Information skills, A way of learning, critical thinking, fair and ethical use of information, IL as a participative practice and knowing how to stay safe online Cunningham & Williams, (2018). The second variable being IL interventions, derived from the second objective of the study (identifying information literacy interventions in place at NUL) relates to the first variable in that the fore mentioned views of IL

influence the type of IL interventions and the teaching of IL which according to Bruce, et al (2006) are: content based teaching, competency based teaching, learning how to learn based teaching, personal relevance based teaching, social impact based teaching and relational based teaching. The third variable is the impact of IL derived from the third objective of the study (assessing the impact of interventions on students' IL competencies at NUL). These various views which influence the type of IL interventions and teaching turns out to impact students' skills and competencies due to the available IL interventions and the teaching of IL that is in place (Bruce, et al 2006).

2.11 Chapter Summary

This chapter presented a critical discussion of existing literature on IL within the educational context. It reviewed literature related to conceptual and empirical studies on IL skills among undergraduate students.

It looked at the various definitions of IL and different models of IL available for promoting IL education. The models of IL enclosed show similar skills that a student, as an information literate person ought to possess. Furthermore, it discussed how the teaching of IL skills could benefit students both during their university education and life after school. In this chapter, IL skills interventions in higher education, the impact of IL skills on students' competencies, role of stakeholders in IL skills interventions, and challenges in teaching IL skills were also discussed. Some of the empirical studies reviewed, had incompatible results about the level of IL Skills among undergraduate students. This might have been due to different research methodological approaches used. Moreover, the preceding studies mostly used one research approach such as qualitative or quantitative research approach resulting into limited information on the areas that were investigated. The empirical studies also focused on IL skills related to print information and they did not take into consideration emerging technologies such as social media, digital libraries, IT tools, and others therefore IL skills related to electronic information were not sufficiently covered. For example, it was pointed out that, most college students lack basic IL skills needed to retrieve, analyze and communicate information available online. The reviewed empirical studies also focused on assessing IL skills of the undergraduate students of a particular field or discipline. Consequently, the findings lacked completeness and generalizability. The gap that has informed the researcher's decision to carry out the study is that, the reviewed studies mostly look

at IL interventions and student's IL skills and don't necessarily look at the impact of IL interventions.

Some of the gaps identified from the relevant literature that will receive attention throughout this research include:

- The role that university library and librarians could play in developing the IL skills of students in universities such as NUL.
- The importance of collaboration among the various stakeholders (university administrators, librarians, IT, lecturers, students, and parents) in ensuring effective IL skills interventions in NUL.

The next chapter will discuss the methodology of the study.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1Introduction

This chapter presents the research methodology of the study. Methodology is the cornerstone of any research project because it links methods of the research to the research outcomes. According to Creswell (2014), methodology governs the choice and use of research methods, instruments, procedures and techniques used in collecting and analyzing data. Research methodology discusses techniques and instruments that are employed to carry out research or acquire knowledge. The chapter therefore, discusses how data was collected, interpreted and analyzed in order to establish the information literacy interventions at the National University of Lesotho and their impact on students' IL. It deals with the methods of data collection, research population, sample size and method of sampling. A discussion on data analysis and ethical consideration is also given.

3.2 Research Paradigm

A paradigm is a background assumption upon which methodology is based upon. It is a theoretical model within which the research is being conducted (Birley & Moreland, 1998). Weaver and Olson, (2006, p. 460) define paradigm as "patterns of beliefs and practices that regulate inquiry within a discipline by providing lenses, frames and processes through which investigation is accomplished". According to Weaver and Olson (2006), the most commonly utilised research paradigms include positivist, post positivist, interpretive, critical social theory, and the pragmatist philosophy. The current study is situated under the pragmatist philosophy.

Pragmatism originates from the work of Peirce, James, Mead, and Dewey (Creswell, 2014). As a worldview, pragmatism arises out of actions, situations, and consequences rather than antecedent conditions (as in post positivism) (Patton, 1990). Instead of focusing on methods, researchers emphasize the research problem and use all approaches available to understand the problem (Mahato, Angell, Teijlingen & Simkhada, 2018). Pragmatists agree that research always occurs in social, historical, political, and other contexts. Thus, for the mixed methods researcher, pragmatism opens the door to multiple methods, different worldviews, and different

assumptions, as well as different forms of data collection and analysis. As a philosophical underpinning for mixed methods studies, Morgan (2007) and Tashakkori and Teddlie (2010) convey its importance for focusing attention on the research problem in social science research and then using pluralistic approaches to derive knowledge about the problem. Amaratunga, Baldry, Sarshar and Newton (2002) cited in Pansiri (2005) argue that through methodological triangulation the flaws of each individual method will be compensated for by the counter-balancing strengths of another and, by combining methods, observers can achieve the best of each, while overcoming their unique deficiencies.

In this study, a methodological mixed methods research was employed in investigating information literacy interventions at the National University of Lesotho. By adopting the pragmatist method, the researcher hoped to gain a better understanding of the research problem in order to give more detailed answers to research questions of the study. Furthermore, the approach enabled the researcher to explore different perspectives of students, lecturers and librarians regarding the impact of information literacy interventions on students' competencies at NUL.

3.3 Research design

Research design refers to the overall strategy that a researcher chooses to integrate the different components of the study in a coherent and logical way, to ensure that the research problem is effectively addressed (Labaree, 2013). Trochim (2016) defines research design as the structure of the research that brings together all the major elements in a research project to try and address the research questions in order to come up with solutions or recommendations. Studies reveal a number of research designs: quantitative methods, qualitative methods, and mixed research methods. This study adopted mixed methods research.

Mixed methods research as the name suggests is an inquiry that combines the attributes of quantitative and qualitative methods. It involves collecting, analysing and integrating quantitative and qualitative methods. Creswell and Plano-Clark (2011, p. 256) defined mixed method designs as "those that include at least one quantitative method (designed to collect numbers) and one qualitative method (designed to collect words) where neither of the two

methods is inherently linked to any particular paradigm". Saunders, Lewis and Thornhill (2012) identify various reasons for adopting mixed method such as to elaborate the findings, develop interpretations, triangulate the findings, investigate contradictions, and to expand the depth of the study.

Mixed methods research was chosen for the study because it gave the researcher a more comprehensive insight into a research problem that could not be provided by quantitative or qualitative approach alone (Mahato, Angell, Teijlingen, Simkhada, 2018). By combining both methods, the researcher gained insight of the research problem from different perspectives (students, lecturers and librarians) and was able to get answers on information literacy challenges among students at NUL. Johnson, Onwuegbuzie and Turner (2007) recommended the use of mixed methods (methods triangulation), contending that by utilizing mixed methods, the bias inherent in any particular data source and method will be canceled out when used in conjunction with other data sources and methods. In terms of what Johnson et al. (2007) say, the use of mixed research methods strengthens the collection of data for comprehensive analysis of the research problem and increases the validity of the findings. In this case, it enabled the researcher to collect, analyse, and merge results to better understand the research problem in order to assess the impact of information literacy interventions on students at NUL.

3.4 Population

Population is the total number of individuals or objects being analyzed or evaluated for which obtained results should be generalised (Saunders, Lewis & Thornhill, 2012). Put simply, population refers to a group of people, things or event of interest that are investigated in a study. In this study, the population included all 4th year students at NUL, librarians and lecturers in the university. The researcher found these stakeholders the most important stakeholders in the area of information literacy in the university. Librarians and lecturers are believed to be having a better experience on IL. They are information literacy service providers and they deliver or teach students IL. Moreover, 4th year students were selected in the study because they are believed to be the most vulnerable students in IL as they are at the stage whereby they seek more information to run their projects and for a lifelong time because IL is a tool advancement of lifelong learning. According to NUL Strategic Plan (2018/2019) there are 1429 registered

students spread across seven faculties. These are: faculty of Agriculture (97 students), faculty of Education (292 students), faculty of Health Sciences (120 students), faculty of Humanities (248 students), faculty of Law (53 students), faculty of Science (126 students) and faculty of Social Sciences (493 students). There are 12 librarians, and 860 lecturers (NUL Strategic Plan, 2018/2019)

3.5 Sample size

A sample is a subset of the population, which represents the entire population a researcher wants to study (Hanlon & Larget, 2011). A sample of the population is important and helpful in the sense that it provides the researcher with a good number of participants that represented the target population by providing vital and important information pertaining to the research topic. A sample of 312 comprising 286 students, 12 librarians and 14 lecturers from the seven faculties was used in the study.

According to Gay (1996), a sample size guide for a descriptive study should be between 10% and 20% of the population. However this is also determined by the number of the population one will be having. Looking at the fact that some of the faculties have smaller numbers such as 53 and 97 and if the 10% could be used we would get smaller sample such as 5 and 9, the researcher therefore used a 20% of the population so as to be as representative as possible. The composition of the students' sample according to faculties is as follows:

- Faculty of Agriculture **- 97/100*20= 19**
- Faculty of Education - **292/100*20= 58**
- Faculty of Health Sciences - **120/100*20= 24**
- Faculty of Humanities - **248/100*20= 50**
- Faculty of Law - **53/100*20= 11**
- Faculty of Science - **126/100*20= 25**
- Faculty of Social Sciences - **493/100*20= 99**

Table 3.1 Sample Size of the Students

Faculties	**Population**	**Sample**
Faculty of Agriculture	97	19
Faculty of Education	292	58
Faculty of Health Science	120	24
Faculty of Humanities	248	50
Faculty of Law	53	11
Faculty of Science	126	25
Faculty of Social Science	493	99
Total	**1429**	**286**

Since a sample size guide for a descriptive study is between 10% and 20% of the population as articulated by Gay (1996), the researcher therefore used a 20% principle to achieve a proportionate random sample of students in the seven faculties. As shown in table 3.1 the faculty of Agriculture had a population of 97 students which was divided by 100 and multiplied by 20% and gave a sample of 19. The faculty of Education had a population of 292 students which was divided by 100 and multiplied by 20% and gave a sample 58. Moreover, the faculty of Health Sciences had a population 120 students which was divided by 100 and multiplied by 20% and produced a sample of 24. The faculty of Humanities had a population of 248 students which was divided by 100 and multiplied by 20% and gave a sample of 50. The faculty of Law had a population of 53 students which was also divided by 100 and multiplied by 20% and gave out a sample of 11. The faculty of Science had a population of 126 students which was divided by 100 and multiplied by 20% which gave out a sample of 25. Lastly, the faculty of Social Science had a population of 493 students which was the largest population amongst all the faculties. It was also divided by 100 and multiplied by 20% which produced a sample of 99 hence all the students population added up to a total sample of 286.

In the case of librarians, the sample size was achieved through Census method whereby the sample size is twelve (12). And in the case of lecturers the sample size was achieved through purposive sampling method whereby two lecturers were selected purposively from each of the seven faculties and this produced a sample size of fourteen (14).

3.6 Sampling procedures

Multiple sampling procedures namely census, proportionate random sampling and purposive sampling techniques were used to select participants in the study. Census method was used to select librarians. Census method is a sampling technique in which all the members of the population are enumerated and included in the study. There are currently 12 librarians offering IL related services at NUL. The census is suitable for a small population and also gives opportunity to the investigator to have an intensive study of the research problem. Proportionate random sampling method was used to select 4th year students in the seven faculties using Gay (1996) principle. This sampling technique was used to achieve representativeness of students in different faculties. In this study, the questionnaires were administered to 4th year students while they were at the workshop which was organized for completing students at NUL. The researcher asked students to participate in the study when they were on break such as during tea time, during lunch time and after the workshop sessions in the afternoon. On the other hand, other students were given the questionnaires after writing their supplementary examinations. The researcher went to different faculties and asked students to participate in the study while they were still in large groups from the examination rooms. Lecturers on the other hand, were selected through purposive sampling method. Purposive sampling is a sampling technique in which the researcher relies on his/her own judgment when choosing members of the population to participate in the study (Saunders, Lewis & Thornhill, 2012). It is a non-probability sampling method where findings are used to generalize the whole population. Two lecturers were selected purposively in each faculty, adding up to a total number of fourteen (14). The researcher went to each of the seven (7) faculties asking two lecturers from each faculty to participate in the study.

3.7 Instrumentation

Questionnaire and interviews constitute the two major instruments of data collection for the study. The researcher used the questionnaire mainly for quantitative data and the interviews mainly for qualitative data.

The structure of the questionnaire was as follows:

- **Section A:** This section was used to solicit information on the demography of the participants. Demographic information questions relate to gender, age, educational and faculty.

- **Section B:** This section solicited participants' views and understanding of information literacy. In particular, questions focused on participants' views, knowledge and awareness of information literacy.

- **Section C:** The purpose of this section was to solicit information from the participants on information literacy interventions in place at the National University of Lesotho.

- **Section D:** The section solicited data on the impact of information literacy interventions on students' competencies.

Moreover, the interviews were conducted to gather qualitative data. The researcher asked librarians and lecturers to participate in the study individually. Nine librarians were interviewed out of twelve, while thirteen lecturers were interviewed out of fourteen. The interviews took place in their offices respectively during work hours and each interview took approximately one hour to be completed. The descriptions of the instruments are discussed below.

3.7.1 Questionnaire

Questionnaire is a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents (Silber & Foshay, 2009). The questionnaire contained ratings where the respondents were requested to indicate their responses within the parameters of the ratings given (Silber & Foshay, 2009). Questions in the questionnaire were closed-ended questions as they are easy to fill, save time and keep the respondents focused on the topic. The self-administering nature of questionnaire made the researcher to select it as she found it most appropriate for the study, see appendix 4. Researcher involvement and influence would be minimized as the participants could complete these during their own time. The majority of the questions were presented in a Likert - type scale with *strongly disagree* forming the one end of the continuum and *strongly agree* on the other end. The

Likert scale is the most widely used scale and is convenient when the researcher wants to measure a construct (Maree, 2008).

3.7.2 Interview

An interview is defined as a specialized pattern of interaction, for a specific purpose, and focusing on specific content (Creswell, 2014). The interview method involves questioning or discussing issues with people (Blaxter, Hughes & Tight, 2006). This makes it easy to seek clarification on issues which are not easy to understand. Interviews can be conducted face-to-face by the researcher with the participant. Interviews are ideal in the sense that they allow immediate follow up and probing to obtain more data and clarity (Blaxter, Hughes & Tight, 2006). According to Creswell (2014), interviews are commonly used in qualitative research. This instrument was used to gather the opinions of librarians and lecturers on information literacy interventions at NUL and impact on students, see appendices five (5) and seven (7).

3.8 Data Collection Procedures

The researcher personally collected the data from the field. The researcher followed the procedure of obtaining a letter of introduction from the supervisor and from the Office of Research and Development (University of Botswana) that was presented to the National University of Lesotho, seeking permission to conduct the study at their institution.

In the case of librarians, in order to achieve a census sample, the researcher went to the participant's offices in Thomas Mofolo library, knocked on their doors individually and asked for assistance from other librarians to make appointments with those who were not available in offices. Data was collected through interviews. The researcher managed to interview only 9 librarians out of a sample of 12 as other librarians were not available.

In addition, in order to achieve a purposive sample of lecturers, the researcher went to different faculties, knocked on lecturers' offices to ask them to participate in the study. This enabled the researcher to get an expert opinion regarding information literacy issues from every faculty in the university. The researcher managed to interview 13 lecturers out of a sample of 14. This was because the researcher couldn't find one more lecturer in the faculty of law as most of the lecturers were engaged in the preparation of results and senate meetings while others were on leave.

The researcher used proportionate random sampling method to achieve student's sample. There were seven faculties and the researcher went to all of the faculties to ask students to participate in the study randomly. The questionnaire was distributed to 286 students. However, since some of the respondents had disappeared and did not bring back the questionnaires, the researcher only managed to collect 257 questionnaires out of the 286 questionnaires.

3.9 Pilot study

The questionnaire was pre-tested with few students from the University of Botswana to check the clarity and ambiguity in the manner the questions were asked. Also, the instruments were given to the supervisor to check whether they properly captured what they were intending to address. Pre-testing enables the researcher to detect errors or ambiguities in the instruments for possible corrections before the main study.

3.10 Data analysis

Two data analysis methods: quantitative and qualitative were employed in the study. Quantitative data gathered through questionnaire was analyzed using Statistical Package for the Social Sciences (SPSS), which is software package for computer analysis of survey data. The descriptive statistics was used to describe the data. According to Agresti and Franklin (2009), descriptive statistics refers to methods for summarizing the data in form of frequencies, graphs and numbers such as averages and percentages. Accordingly, graphs, charts, figures and tables were used to display the results. Data analysis focused on the analysis and presentation of the primary data collected during the study and the interpretation of the data guided the researcher in drawing inferences and conclusions for the research. According to Agresti and Franklin (2009), the SPSS software and descriptive statistics are ideal for quantitative data as they save time in data processing and can also manipulate complex data. Furthermore, they can perform highly complex data manipulation and analysis with simple straightforward instructions from a menu. The researcher therefore used SPSS for quantitative data because it allows to enter data into a software and analyses with charts, tables and graphs. Also, in this study, the researcher found SPSS suitable as it is good for large population (Agresti and Franklin, 2009).

The interview data from librarians and lecturers was analyzed using thematic approach. Thematic analysis is a method for identifying, analyzing, and reporting patterns (themes) within

data (Braun & Clarke, 2006, p. 6). Qualitative data was transcribed and organized into categories so as to identify patterns within each group. From the emerging patterns, themes were formulated to serve as basis for discussion and inferences.

3.11 Reliability, validity and trustworthiness

Validity refers to the extent to which an instrument measures what it purports to measure (Kimberlin & Winterstein, 2008). An instrument is said to be valid when it measures what we think it is measuring (Manning & McMurray, 2010). Several types of validity tests may be used by the researcher to determine the truthfulness of the research instrument. These include content validity, criterion validity, and construct validity (Jackson, 2014). In this study, validity was ensured through content validity. Content validity is a type of measurement validity that requires that a measure represents all aspects of the conceptual definition of a construct (Neuman, 2014). Content validity addresses the following question: Is the full content of a definition represented in a measure? To enhance the content validity of the instrument, Neuman (2014) advised that three steps must be observed. Firstly, the researcher must specify the content in a construct's definition. Secondly, the researcher must sample from all areas of the definition. Thirdly, the researcher must develop one or two indicators that tap all of the parts of the definition.

Reliability on the other hand, refers to the ability of an instrument to produce consistent and replicable results over time (Manning & McMurray, 2010). Cohen, Manion and Morrison (2007) describe reliability as a synonym for consistency and replicability over time, over instrument and over group respondents. An instrument is said to be reliable or consistent if the measurement produces same result each time the same variable is measured (Manning & McMurray, 2010). In this study, reliability was ensured through pre-testing of the instrument discussed above.

Trustworthiness is a critical element in any research project. Scholars like Yilmaz (2013) and Sutton and Austin (2015) emphasize that researchers should try as much as possible to make the findings of the study be as compatible as possible to the stories related by the respondents such that they are worth paid attention to. As suggested by Guillemin and Gillam (2004), the researcher scrutinized the data rigorously in order to ensure trustworthiness.

3.12 Ethical considerations

Creswell (2014) advises that all codes of ethics should be considered by the researcher at the beginning. In terms of what Creswell says, ethical issues were observed in the study. Firstly, permissions were sought from the University of Botswana Institutional Review Board to conduct the research. A similar permission was also sought from the Ministry of Education in Lesotho. An informed consent form was drafted to seek for participants' permission to take part in the study, see appendixes 2 and 3. The researcher acknowledged the rights of the participants in this research. The names of the researcher and reasons for the research were made known to the respondents. The respondents were informed that their identity would not be recorded or made traceable. Anonymity and confidentiality of the participants were guaranteed and lastly, respondents were asked to participate in the study on a voluntary basis.

3.13 Dissemination of Findings

The researcher intends to dissemination the findings of the study by a formal presentation in the form of a publication together with the supervisor. This gives more opportunity to share research.

3.14 Summary

This chapter discussed the research methodology proposed for the study. It indicated that mixed research methods was adopted for the study and proceeded to explain what mixed approaches entail. Furthermore, the rationale for adopting the approach was provided. The chapter also contained discussion on study sample, sample procedure, data collection instruments, and data analysis methods. In particular, the chapter highlighted how quantitative data and qualitative data gathered in the study was analysed.

CHAPTER FOUR
PRESENTATION OF RESULTS

4.1 Introduction

This chapter presents and discusses the findings of the study. The findings are based on the responses of students gathered through a questionnaire, and responses of librarians and lecturers gathered through interview at NUL. The study sample consisted of 286 fourth (4^{th}) year undergraduate students. Out of this number, 257 questionnaires were completed and returned, making a response rate of 89.9%. In addition, out of the 14 lecturers targeted in the study, 13 were interviewed while 9 out of 12 librarians were interviewed.

The purpose of this study was to investigate how information literacy interventions at NUL impact students' IL skills and competencies. This chapter reports the results and findings for each of the following three specific study objectives:

- To understand the conceptions of information literacy by 3 stakeholders at the National University of Lesotho
- To identify information literacy interventions in place at the National University of Lesotho.
- To assess the impact of those interventions on students' IL competencies at the National University of Lesotho.

The results and findings are presented according to the research objectives restated above. The chapter begins by presenting the response rates.

4.2 Response Rates of Survey Questionnaires

The study used a total sample of 312 participants comprising 286 fourth year students from the seven faculties of NUL, proportionally sampled using the sample formula devised by Gay (1996), 14 lecturers from the seven faculties and 12 librarians. The students' responses are shown in the table below:

Table 4.1: Distribution of Questionnaires to Respondents

Faculties	Number Distributed	Number Returned	Percent
Faculty of Agriculture	19	17	89.5%
Faculty of Education	58	55	95%
Faculty of Health Sciences	24	24	100%
Faculty of Humanities	50	49	98%
Faculty of Law	11	11	100%
Faculty of Science	25	25	100%
Faculty of Social Sciences	99	76	77%
TOTAL	**286**	**257**	**89.9%**

89.9% response rate

Table 4.1 indicates that, out of 286 questionnaires distributed, 257 questionnaires were completed and returned successfully, resulting in a response rate of 89.9%. The high response rate is attributed to the effort made by the researcher to maximise the response.

4.3 Response Rates of the interviews (Lecturers and Librarians)

The study also targeted fourteen (14) lecturers, two (2) from each of the seven (7) faculties at NUL, using purposive sampling. Out of fourteen (14) participants, thirteen (13) agreed to participate in the study. Out of the thirteen (13) that participated, eight (8) were females and five (5) were males. Two lecturers were interviewed in each of the 6 faculties, and only one lecturer in the Faculty of Law. The reason for this was that most lecturers in that faculty were engaged with student results preparations and Senate meetings while others were on leave. The study further targeted twelve (12) NUL librarians using census sampling technique. Out of twelve (12) librarians that were targeted, only nine (9) participated in the study. Six (6) were females while three (3) were males. Out of the twelve librarians, three (3) did not participate in the study because they were on leave.

4.4 Demographic Data

The demographic data of the students are shown in table 4.2

Table 4.2: Students' demographic profile

		Frequency	Percent
Gender	Male	99	38.5
	Female	158	61.5
	Total	**257**	**100.0**
Age	16 -20 years	1	0.4
	21 - 25 years	160	62.3
	26 - 30 years	72	28.0
	31 + years	24	9.3
	Total	**257**	**100.0**
By Faculty	Agriculture	17	6.6
	Education	55	21.4
	Health Sciences	24	9.3
	Humanities	49	19.1
	Law	11	4.3
	Science	25	9.7
	Social Sciences	76	29.6
	Total	**257**	**100.0**

The results in table 4.2 show that 99 (38. 5%) of the participants were males while 158 (61.5%) were females. Out of 257 students that participated in the survey, 1 student (0.4%) was aged 16-20 years, 160 (62.3%) were 21-25 years, 72 (28.0%) were 26-30 years, and 24 (9.3%) were 31 years and above. The results further show that participants came from various faculties. For example, 17 (6.6%) were from the Faculty of Agriculture, 55 (21.4%) were from Faculty of Education, 24 (9.3%) were from Health Sciences, 49 (19.1%) Humanities, 11 (4.3%) Law, 25 (9.7%) Sciences, and 76 (29.6%) were from Social Sciences.

Table 4.3 Lecturers' Demographic Profile

Faculty	Females	Males	Frequency	Percent
Agriculture	2	0	2	15.4%
Education	0	2	2	15.4%
Health Science	1	1	2	15.4%
Humanities	1	1	2	15.4%
Law	1	0	1	7.7%
Science	2	0	2	15.4%
Social Science	1	1	2	15.4%
TOTAL	**8**	**5**	**13**	

The results in table 4.3 shows that two (2) lecturers from the faculty of Agriculture were females and two (2) from the faculty of Education were males. In addition, there was one (1) female and one (1) male lecturers who participated from the faculty of Health Science. Also there was one (1) female and one (1) male lecturers who participated from the faculty of humanities. One (1) female lecture participated from the faculty of Law and there was no male participant. Moreover, two (2) females participated from the faculty of Science while one (1) female and one (1) male lecturers from the faculty of Social Sciences also participated.

Table 4.4 Librarians' Demographic Profile

Females	Males	Frequency
6	3	9

The results in table 4.4 show that there were six (6) female librarians who participated in the study and three (3) male librarians who participated.

4.4.2 Profile of Interview Participants (Lecturers and Librarians)

To reflect the mixed methods research approach adopted for the study, 13 lecturers teaching in various faculties at NUL and 9 librarians serving at the University library were interviewed. The responses of interview respondents will be presented and discussed alongside with the quantitative data from students' questionnaires.

4.5 Results on Objective 1: Understanding of Information Literacy

The first objective of the study sought to understand how the three groups of participants or stakeholders (students, lecturers and librarians) view and define information literacy. The table below presents the results from students.

4.5.1: Quantitative Data (Students)

Table 4.5: Students' Understanding of Information Literacy

I view IL as :	A	NS	D	TOTAL %	M	SD
Knowing how to use IT tools	129(50.2%)	91(35.4%)	37(14.4%)	257(100.0)	2.60	1.114
Understanding when there is an information need, how to search, extract and use information	239(93%)	11(4.3%)	7(2.7%)	257(100.0)	2.00	0.606
A way of learning; this includes the skills to evaluate information and to access electronic information	197(76.6%)	53(20.6%)	7(2.7%)	257(100.0)	2.16	0.749
A fair and ethical use of information; this includes referencing and citing relevant sources of information and acknowledging authors	206(80.1%)	44(17.1%)	7(2.7%)	257(100.0)	2.08	0.748
Critical thinking; am I able to understand and evaluate the information I get?	225(87.5%)	26(10.1%)	6(2.3%)	257(100.0)	2.03	0.672
A participative practice; am I able to actively incorporate formal	185(72.3%)	63(24.6%)	8(3.1%)	256(100.0)	2.23	0.734

resources of information into my learning?						
Knowing how to stay safe online; this includes protecting information such as using password	150(58.3%)	90(35%)	17(6.6%)	257(100.0)	2.39	0.982

A- Agree, NS- Not Sure, D- Disagree, M- Mean, SD- Standard Deviation.

It is important to note that in table 4.5, the strongly agree and agree were combined together and also the strongly disagree and disagree were combined together. The majority of students (93%) viewed information literacy as understanding when there is an information need, how to search, extract and use information as indicated by 11.7% and 81.3% that strongly agreed and agreed with the statement respectively. However, even though the researcher combined the two (strongly agree and agree) it is important to note that most students were on agreeing more than strongly agreeing. Furthermore, the students also viewed information literacy as being able to understand and evaluate information they receive (87.5%); fair and ethical use of information (80.1%); A way of learning, that is, skills to evaluate information and to access electronic information (76.6%). A significant percentage of students were not sure whether information literacy involves knowing how to use IT tools (35.4%) and how to stay safe online (35%).

Furthermore, the students were asked to indicate the attributes that define an information literate person. The results are shown in Figure 2 below.

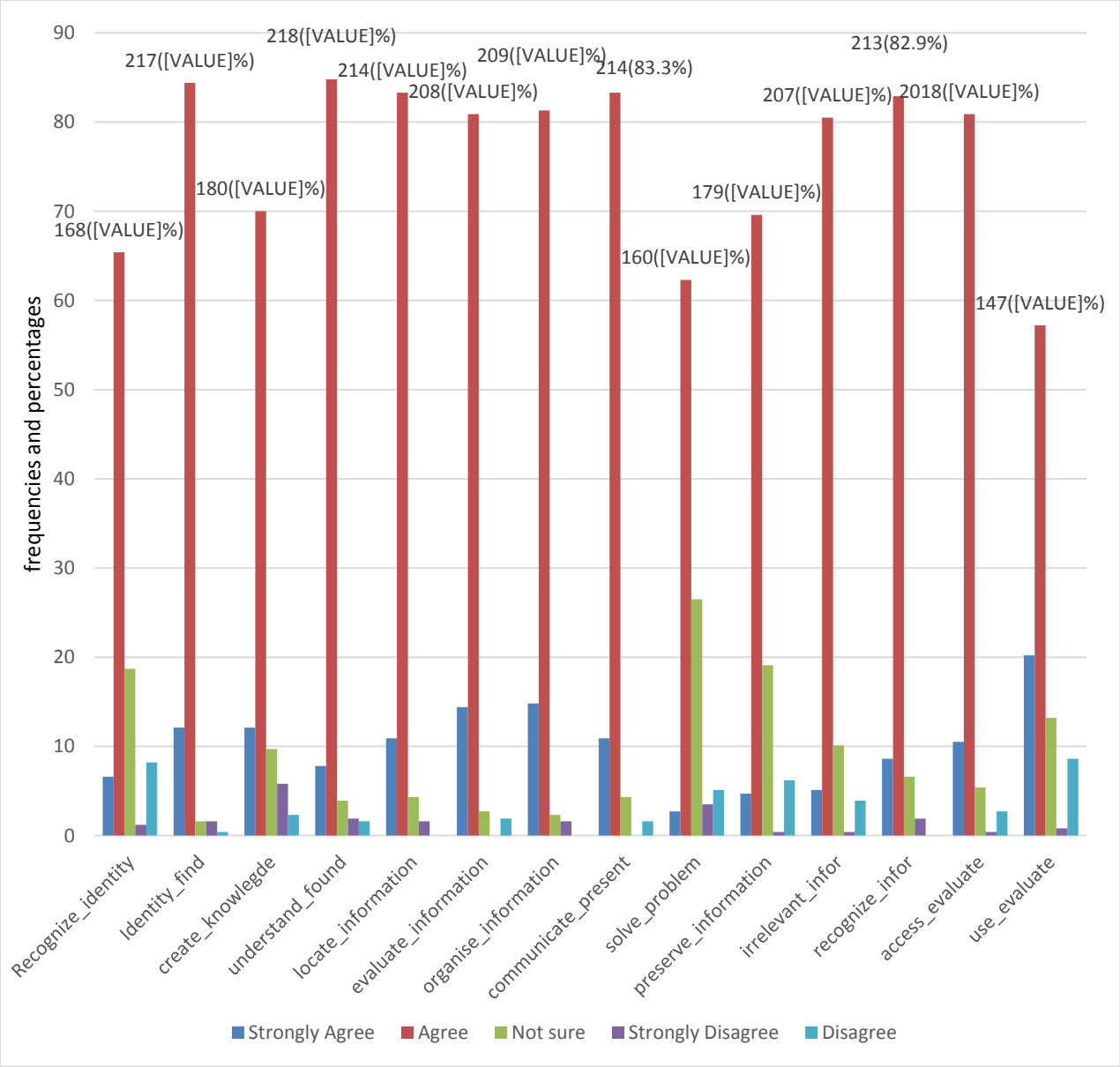

Figure 2: Attributes of an Information literate Person

In presenting the results in the figure 2, the researcher combined strongly agree and agree categories. The students indicated that an information literate person is one who is able to accomplish the following: identify and find the needed information (96.5%); know how to organize information (96.1%); evaluate information (95.3%), locate information (94.2%); know how to communicate and present information (94.2%); recognize when information is needed and how to locate, evaluate and use it effectively; fully understand found information and to

make use of it (92.6%); (91.5%); Access, evaluate, organize and use information from a variety of sources (91.4%); Dispose irrelevant information (85.6%); recognize and identify an information problem (72%).

4.5.2: Interview Data

The interview results showed that participants (librarians and lecturers) had different views and understanding about information literacy.

When asked to explain what they understand by information literacy, they gave the following answers:

Theme One: IL as information process

Librarians

knowledge of how to use information (librarian participant 1); ability to identify relevant information sources (librarian participant 2); knowing where to find information (librarian participant 4); knowledge and understanding of where and how to get information, (librarian participant 5); guiding information users to find the relevant information sources electronically and capacity to identify relevant information sources (librarian participant 6); knowing how to search, evaluate and understand information (librarian participant 7); ability to locate, evaluate and use information effectively and guiding users to find and retrieve information online (librarian participant 8)

Lecturers

When asked to explain what they understand by information literacy, lecturers' answered as follows: knowledge of information (lecturer participant P1); ability to use information and ability find information (lecturer participant 2); ability to access information from different sources (lecturer participant 4); knowledge and understanding of different information sources (lecturer participant 5); knowledge of information and how to access it (lecturer participant 7); knowledge of where to access information (lecturer participant 9); ability to find and understand information (lecturer participant 10); ability to access, evaluate and interpret information (lecturer participant 11); ability to interpret and understand information (lecturer participant 12).

Theme Two: IL as learning and research direction

Librarians

IL as lifelong learning and ability to use information ethically (librarian participant 3); using information ethically (librarian participants 4); IL as lifelong learning and instructional course (librarian participant 5); IL as an instructional course (librarian participant 9).

4.6 Results on Objective 2: Information literacy Interventions

The second objective of the study sought to identify the information literacy interventions in place at NUL. The views of students, lecturers and librarians were used to address this objective.

4.6.1 Quantitative Data (Students)

The quantitative data from students are presented in the table and figure below.

Table 4.6: Information Literacy Interventions

Information literacy interventions at NUL include:	A	Not sure	D	Total (%)	M	SD
Library orientation	253(98.4%)	2(0.8%)	2(0.8%)	257(100.0)	1.54	0.599
Library instruction courses	252(98.1%)	0(0.0%)	5(1.9%)	257(100.0)	1.77	0.642
Assignments or tasks requiring research evaluation	247(96.1%)	6(2.3%)	4(1.6%)	257(100.0)	1.82	0.620
Reference services	247(96.1%)	5(1.9%)	5(2%)	257(100.0)	1.82	0.594
Library manual and guide	244(94.9%)	11(4.3%)	2(0.8%)	257(100.0)	1.89	0.526
Information literacy workshops/seminar	216(84.1%)	36(14.0%)	5(1.9%)	257(100.0)	2.04	0.686
Use of ICT in the library services	212(82.5%)	33(12.8%)	12(4.7%)	257(100.0)	2.10	0.671
Teaching collaboration b/w librarians and lecturers	223(86.8%)	33(12.8%)	1(0.4%)	257(100.0)	1.88	0.644
IL integrated in courses	57(22.1%)	87(33.9%)	113(44%)	257(100.0)	3.34	1.015

Librarians teaching IL	217(84.5%)	22(8.6%)	18(7%)	257(100.0)	1.97	0.819
Specialist teachers of IL	96(37.4%)	116(45.1%)	45(17.5%)	257(100.0)	2.83	0.922
Subject teachers teaching methods and learning activities developing IL	116(45.2%)	119(46.3%)	22(8.6%)	257(100.0)	2.66	0.750

A- Agree, NS- Not Sure, D- Disagree, M- Mean, SD- Standard Deviation.

Looking at the results in above, it is important to note that the researcher combined strongly agree and agree and also strongly disagree and disagree. The students indicated that the following IL interventions were in place at NUL: library orientation (98.4%); library instruction courses (98.1%); assignments and tasks requiring research evaluation (96.1%); reference services (96.1%); collaboration between librarians and lecturers (86.8%); and use of ICT in library services (82.5%). In contrast, the majority of students indicated that IL integrated in courses was not part of IL interventions at the university as exemplified by 33.9% that were not sure and 44.0% that disagreed with the statement. Similarly, 46% of the students were not sure whether teachers' teaching methods and learning activities at NUL develop IL.

4.6.2 Interview Results

In line with the second objective of the study, participants (librarians and lecturers) were asked to describe the interventions in place at NUL to promote information literacy. Varied responses were obtained from both librarians and lecturers. The dominant themes that emerged from answers include: library orientation, demonstration lessons, communication skills course, workshop and training, information literacy lessons/courses, user education, and subscription for information databases.

While library orientation, information literacy lessons, user education and subscriptions for information databases featured prominently in the librarians' responses, communication skills course, demonstration lessons and workshops and training through the Centre for Teaching and Learning (CTL) was dominant in the lecturers' answers, however seven (7) lecturers claimed they were not sure of the available IL interventions.

Theme One: Teaching and Delivering IL Services to Students (Librarians)

NUL is doing library orientation so as to promote information literacy. This is done at the beginning of every academic year for all first year students. This is because most of them come from significantly disadvantaged secondary schools which didn't have proper libraries therefore these students enter the university not having the library knowledge of how to access materials both e-resources and hard copies. So the orientation enhances their ability to find information on their own as they enter NUL. Moreover, NUL library offers reference services and library manual guides, (Librarian participant 1).

Another librarian said: *"NUL promotes information literacy through library orientation, that is, more like user education for new students and by conducting IL classes for senior students, it further subscribes to information databases in the library. Moreover NUL recognizes a library day so as to promote IL. On this day librarians take their services to NUL community and present them to students to make them aware of the importance of information"* (librarian participant 2). Similarly, (librarian participant 3) said: *"the library conducts IL lessons for first year and senior students in the library. IL lessons for first years are conducted only in the beginning of the academic year while for senior students (3rd years) the faculties cooperate with the library to conduct lessons in a single day every week for the whole of the academic year".* Moreover (librarian participant 4) continued to say: *"NUL is doing user education to promote IL, again the NUL management subscribes to information databases so that students access relevant and the needed information".* (Librarian participant 5) stated: *"in my opinion, NUL is doing user education letting students know where and how to access information".* Furthermore, another librarian said *"NUL is doing user education to promote information literacy, it organizes orientations for new students every beginning of every academic year so as to familiarize them with the library, help them use computers and how to use databases such as science direct, emerald and so on, to locate relevant materials at the right places guided by the library professionals"* (library participant 6). Another one said *"NUL is promoting IL by providing IL lessons or orientations to all first year students in the library and IL lessons or classes that are conducted by the library professionals to 3rd year students together with their lecturers"* (librarian participant 7). Lastly, (librarian participant 9) indicated *"NUL Is doing IL orientations for new students every academic year".*

(Lecturers)

"I am not sure if there are any IL interventions, however the English department teaches a compulsory course of communication skills for all first year students" (lecturer participant 1). Moreover another lecturer said *"NUL library offers IL orientation for new students and we also attend IL lessons with our 3rd year students in the library, moreover as lecturers we give our students tasks such as assignments and projects to carry out on their own, thus searching for information from relevant sources and writing so as to develop IL skills"* (lecturer participant 2). Another lecturer indicated, *"NUL offers Centre for Teaching and Learning (CTL). The Centre holds workshops that teach/train lecturers on how to guide their students on finding relevant materials and information sources. It also makes students aware of the available data bases and how to make use of them"* (Lecturer participant 3). Another said: *"There is a communication skills course for first years. There are IL lessons/orientations for first years. There is a Centre for teaching and learning that also provide IL for students and lecturers. In addition, there is also a computer skills course or program that is offered at first year level to equip students with computer literacy"* (Lecturer participant 6). (Lecturer participant 9) also indicated *"NUL gives students demonstration lessons that help them access relevant and acceptable information. This is done through (CTL)".* Furthermore, another said: *"NUL has Centre for teaching and learning. The Centre offers counseling to students, i.e. they help students with accessing information"* (Lecturer participant 12).

On the kind of support the NUL management provides towards promoting information literacy, one lecturer stated: *NUL supports IL by creating the Centre for Teaching and Learning (CTL). NUL has also introduced a degree course in Library and Information Studies that will start in the next academic year 2019/2020. This course will train students on IL* (Lecturer participant 2). Corroborating the above assertion, another participant said: *NUL supports IL through CTL, subscribing for data bases, IL orientations, internet, computers, and so on* (Lecturer participant 3). According to another participant, *NUL provided "Thuto System". This is the support system for information literacy. It supports E-learning that allows students to access information themselves*" (Lecturer participant 5). Other measures being provided by the NUL management to promote information literacy in the university include: Online IL support services (Lecturer participant 6), mobile library (e-books) (Lecturer participant 7), library orientations, computer

skills programme or course that is offered at first year level, software scanner (to check plagiarism) (Lecturer participant 8), among others.

Theme Two: IL integration into the Curriculum

To ascertain how IL was being taught to students at NUL, participants were asked the following questions: Librarians were asked whether information literacy was integrated into the NUL curriculum. While lecturers were asked whether they include information literacy as an explicit learning outcome for their courses.

(Librarians)

The majority of librarians indicated that IL was not integrated into the curriculum. For example, librarian participant 1 responded in this manner: *"No it is not integrated into the curriculum. There are no courses that are called IL that are graded, we only have lessons of IL that are offered by librarians but they are not assessed".* Librarian participant 2 said: "*No, IL is not a formal course, however we have information literacy classes in the library even though they are not graded*." Librarians participants 3 and 8 responded thus: "*No it is not integrated*

(Lecturers)

In contrast, the majority of lecturers said they include information literacy as an explicit learning outcome for their courses even though it's by choice that they include it. For example, lecturer participant 3 said: *"Yes I do include I.L into my course. I give students assignment, term papers, I tell them what my expectations are. So students go out of their way to search for information and write the given assignments. In that way they gain I.L skills."* Lecturer participant 4 responded thus: "*Yes I do include information literacy in my courses. The objective of the courses are meant to make students to be able to access, understand information, analyze, synthesize, evaluate and create something new (new knowledge). This is what we practice and have in our course outlines."* Similarly, lecturer participant 7 said: *I do include I.L into my courses by embedding I.L skills by giving students assignments and supervising them on projects. In this way, they gain I.L skills by being able to search for information from sources on their own."* However, some lecturers could not say in a categorical manner whether they include information literacy as an explicit learning outcome for their courses. For example, lecturer participant 1 said *"I am not sure if I do"* while lecturer participant 12 simply said *"I cannot tell"*. These results suggest there is no explicit university policy for teaching I.L at NUL as

lecturers decide whether to include it in their courses or not, or assume that students develop it in the course of learning.

4.7 Results on Objective 3: Impact of Information literacy Interventions

The third objective of the study sought to determine the impact of information literacy interventions on students' competencies. This study relied on the opinions of students, lecturers and librarians to address this objective.

4.7.1 Quantitative Data (Students)

Table 4.7: Impact of Information Literacy Interventions

Impact of IL interventions on students include	A	Not sure	D	Total%	M	SD
Available IL interventions enable me to think critically	188(73.7 %)	39(15.3%)	28(10.9 %)	255 (100.0)	2.41	0.930
Help me to select accurate and reliable information sources	247 (96.8 %)	8 (3.1%)	0 (0.0%)	255 (100.0)	1.95	0.334
Allow me to know how best to select the right information for different tasks	231 (90.6 %)	24 (9.4%)	0 (0.0%)	255 (100.0)	206	0.356
Enable me to gain the ability to understand issues related to accessibility of information	246 (96.4 %)	9 (3.5%)	0 (0.0%)	255 (100.0)	2.00	0.266
Enable me to know how to match information needs against information resources	199(78 %)	55 (21.6%)	1 (0.4%)	255 (100.0)	2.20	0.495
Enable me to develop proper understanding of information need	247 (96.8 %)	8 (3.1%)	0 (0.0%)	255 (100.0)	1.99	0.273
Promote basic use of ICT by students	154 (60.4 %)	88 (34.5%)	13(5.1%)	255 (100.0)	2.46	0.797
Expand my research skills and experience	238(94.4 %)	14 (5.6%)	0(0.0%)	252 (100.0)	1.98	0.367
Enable me to organize, apply and communicate information effectively	245 (96.4 %)	9 (3.5%)	0(0.0%)	254 (100.0)	1.88	0.423
Enable me to make effective use of data bases, indexing, abstracting and citation	152 (58.8 %)	78 (30.6%)	25 (9.8%)	255 (100.0)	2.56	0.962

Enable me to use information ethically	93 (36.4 %)	117 (45.9%)	45 (17.6%)	255 (100.0)	2.95	1.086
Help to recognize when information is needed and how locate, evaluate and use it effectively	243 (95.3 %)	12 (4.7%)	0 (0.0%)	255 (100.0)	2.01	0.287
Help me to access, access, evaluate and use information from variety of sources	203 (79.6 %)	44 (17.3%)	8 (3.1%)	255 (100.0)	2.20	0.699

A- Agree, NS- Not Sure, D- Disagree, M- Mean, SD- Standard Deviation.

It is important to note that in table 4.7, the strongly agree and agree were combined together and also the strongly disagree and disagree were combined together. The results above confirmed that IL interventions had a variety of impacts as perceived by students. These include ability to select accurate and reliable information (96.8%); ability to understand issues related to information accessibility (96.4%); select the right information for different tasks (90.6%); proper understanding of information need (96.8%); research skills and experience (94.4%); organize, apply and communicate information effectively (96.4%); and help to recognize when information is needed and how to locate, evaluate and use it effectively (95.3%). In contrast, 45.5% of students were not sure whether IL interventions enable them to make effective use of data bases, indexing, abstracting and citation and use information ethically respectively. It is important to note that the researcher combined strongly agree results together with agree results.

4.7.2 Interview Data

When asked to describe the impact or benefits IL interventions have on students, librarian participants gave contradictory answers. While some said the interventions have had significant positive impact on students, others said the impact was unimpressive. Again, some participants said they could not identify any impact. Likewise, lecturers were also interviewed on the impact. Similarly, some said the interventions have had significant positive impact on students, others said the impact was unimpressive and some participants said they could not identify any impact.

Theme One: Positive Impact (Librarians)

(Librarian participant 2) said *"usually before IL orientation and IL classes/lessons start, the majority of students don't come to the library for searching information and materials, but after these lessons students become more active and they usually visit the library"* Moreover another

librarian said *"the interventions help students to find information easily and independently and where to get the right information"* (librarian participant 4). On the other hand, another librarian indicated *"I can say orientation makes a difference somehow because it helps students to know where to access information and how to use online resources"* (librarian participant 6), Moreover (librarian participant 8)

(Lecturers)

"Through communications skills course, students are able to re-channel their communication skills" said (lecturer participant 1). Furthermore, another lecturer said *"I can personally say the impact is positive as I have seen improved student performance in accessing relevant information materials online, especially in using 'thuto system' as a way of learning because we are now actively exchanging digital information through online platform"* (lecturer participant 2). Moreover (participant lecturer 3) indicated *"there is a positive impact because before the workshops and training provided by (CTL) students were not as active with information searching as they are now. They can now use the Thuto system actively than before".* On the other hand (lecturer participant 12) added *"I think student IL skills have improved since the (CTL) started IL training, even though we still experience plagiarism challenge with the majority of our students".*

Theme Two: Negative Impact (Librarians)

when talking on behalf of user education said *"I don't think this user education is that effective because we are not grading IL or making any assessment, therefore students IL skills are not so effective or impressive, most students are struggling to access information using the library resources",* similarly (librarian participant 9) claimed the impact is not so effective because most students do not use the library databases and they plagiarize, again most of them do not attend IL orientations and IL lessons, *" this could be because these lessons are not compulsory"* he said.

(Lecturers)

One lecturer said the impact was not impressive because students are not able to cite sources correctly and most of them seem to have poor research skills. According to him, most of them

plagiarize (Lecturer participant 6). Similarly, another said the impact was not much because students are not able to identify critical sources of information on the internet (Lecturer participant 9). In fact, one participant put his answer thus: *"No positive impact because students are lazy to use such resources, it's a problem to access relevant information resources. They continue to use Google to search for information and they do their work at the last minutes"* (Lecturer participant 10). Again, (lecturer participant 13 indicated *"I can't see much impact because our students have poor writing skills, it's a problem when it comes to citing sources, they plagiarize a lot and some put false citations in their work, while some don't acknowledge authors at all. For some it is a problem to access and select accurate and reliable information".*

Theme Three: Those who couldn't identify an impact (Librarians)

To illustrate, the responses include: (librarian participant 1) indicated *"I can't describe any impact because I have never assessed students' information literacy skills",* (Librarian participant 3) also claimed there is no IL impact on students that she knows of. (Librarian participant 5) also claimed he is not aware of any impact so far. Moreover, (librarian participant 7) also said he can't describe any impact.

(Lecturers)

A significant number (5) of participants said they could not mention any impact of IL interventions on students. They claimed they are not aware of any impact because there is no specific assessment done as stated by the following participants: Lecturer participant 4, Lecturer participant 5, Lecturer participant 7, Lecturer participant 8 and Lecturer participant 11.

4.8 Suggested Solutions

The participants were also asked to suggest possible solutions to promote information literacy at NUL, both on the questionnaire and in the interview sessions for staff. This was an open-ended question where respondents were free to express their own views. However some of the respondents left this section blank without giving any recommendations.

Table 4.8: Suggested Solutions or recommendations by students (questionnaires)

Solutions	Number of students	Percent
IL should be included into NUL curriculum, be graded and become a formal course	84	43%
Improve ICT infrastructure (more computer labs)	31	16%
Adequate internet and WI-FI in campus	54	28%
Specialized personnel in the field of IL	17	8%
IL orientations & lessons done at every level of study	7	3%
Total	193	

Table 4.8 above, shows that out of 193 students that responded to this question, 84 suggested that there is need to integrate information literacy into the curriculum at NUL, while 31 students suggested there should be improvement in the ICT infrastructure so that more computers are purchased in the library and there should be an increase of computer labs at NUL. Furthermore 54 students stressed that the bandwidth of the internet should be increased and the WI-FI should be improved on campus. On the other hand, 17 students stated or suggested NUL should employ qualified staff who are specialized in information literacy for the improvement of IL status in the university, 7 students suggested IL orientations and lessons should be for all students at all levels and not only for first year students because IL is a lifelong learning skill.

4.9.2 Suggested solutions or recommendations by librarians

When asked what could be done to improve information literacy status at NUL, librarians suggested the following solutions:

Theme One: IL integration into the curriculum (Librarians)

"The best recommendation would be to make IL compulsory and to include it into the curriculum so that every student is fully aware of the importance of information" (librarian participant 1). Another librarian said *"IL should be taken seriously and be formalized. It should be a compulsory course because if it's not, students are not forced to attend lessons therefore they don't attend. I think this is because they don't see any importance since they are not assessed or graded, but if IL is formalized and included into the curriculum it will benefit a higher percentage of NUL students as they will start taking it seriously"* (librarian participant 3), while librarian participant 4 added "*IL should be integrated into the curriculum because according to me what is offered now is only user education not information literacy. As long as those IL lessons are still not compulsory students will keep on dodging them and will never take them serious. I think it would be better if it becomes formal and taught in classes by qualified staff who specialize in information literacy who will grade it at all levels and not only at first year level because it is a lifelong learning".* Similarly, (librarian participant 7) and (librarian participant 8) also suggested that IL should be integrated into the curriculum. *"The timing of the orientation is very limited, the two weeks that we take to orient new students put us under pressure as librarians. It would be better if NUL management consider to extend this time to a period of a semester. Again attending large groups of all first year students within a short period of time makes orientation unsuccessful"* (librarian participants 6).

(Lecturers)

(Lecturer participant 4) recommended that there should be a formal IL program which will be adapted to different needs of different programs and courses. Lecturer participant 10, lecturer participant 12 and lecturer participant 13 were also in agreement that IL should be integrated into the curriculum and that there is a need for qualified staff who specialize in information literacy. Lecturer participant 11 also suggested IL should be included into the curriculum. (Lecturer

participant 6) also said NUL should consider integrating IL into the curriculum and it should be offered at every level.

Theme Two: IT improvement (Librarians)

(Librarian participant 5) suggested *"NUL management should consider increasing more computer labs because computers are few while students are too many. The internet bandwidth should also be improved as our internet is currently very poor"* he added.

(Lecturers)

(Lecturer participant 2) suggested there should be more e-learning platforms at NUL. "*I think computer labs should be added because we have limited computers when we have too many students in the university"* (Lecturer participant 3) said. Moreover, (lecturer participant 4) recommended NUL should upgrade the internet coverage server system capacity as the bandwidth seemed to be currently poor. He also added there is need for logistics like software programs and training aids in the use of the soft-wares. (Lecturer participant 5) also suggested NUL should allow students to get computer skills beyond first year level as the computer skills course is currently offered at first year level only, while Other participants added that there should be improvement of the ICT infrastructure, internet should be improved to reflect the current technological developments and upgrade the speed, and there should be more computer labs and more space for WI-FI in campus, (lecturer participant 7, lecturer participant 8 and lecturer participant 9).

Theme three: IL policy formulation (Lecturers)

(Lecturer participant 11) suggested that NUL should consider creating a formal IL policy because it's not every lecturer that includes IL into their courses, *"we include IL into our teaching by choice, other lecturers see it important to do so while others don't even care. For example, myself I don't see any importance to include IL into my courses because I am not an information literacy lecturer or specialist, besides there is no formal policy that tells us to do so"*, she said.

Theme Four: Awareness and campaigning (Librarians)

One librarian stated *"I think the library as the information hub should make more awareness campaigns and market their resources and the importance of available information resources as the statistics shows that the resources are not being used much"* he further suggested that they could campaign through the school radio (Dope FM) and through the students email addresses to let them know of the new available resources. *"In my view, this can make a positive impact"* he said, (librarian participant 2).

Theme Five: IL Teaching and Training (Lecturers)

(Lecturer participant 1) suggested and encouraged that communication skills course should be reviewed to accommodate various streams within departments in the faculties and it should also be taught throughout the university at all levels rather than for new students only. (Lecturer participant 4) also suggested that IL training and workshops should consider including all the stakeholders such as management, lecturers, librarians, IT people and students. He further recommended that, there should be trained personnel who specialize in information literacy to teach students IL. He lastly suggested NUL should go for educational system which is learner centered where students will be independent on finding information for themselves and interdependent, *"we need production of relevant information not pedagogy culture which is teacher centered"* he said.

4.10 Summary

This chapter analysed and presented the findings of the study. The findings revealed the views of IL held by the three stakeholder groups. In both cases, data was presented and analyzed based on the objectives of the study. The data established that participants have different views on IL and IL interventions. The analysis also unearthed the solutions and recommendations suggested by participants for the better development and improvement of IL at the University of Lesotho.

CHAPTER FIVE:
DISCUSSION, SUMMARY AND RECOMMENDATIONS

5.1 Introduction

The previous chapter presented the analysis of both quantitative and qualitative data collected during the study. This chapter presents the discussion and interpretation of results, the summary of the key findings and recommendations for further research.

5.2 Discussion and Interpretation of Results

This section discusses and interprets the results of the study. The discussion and interpretation will be conducted in terms of the adopted framework of the study. In addition, literature will be engaged to determine how the current findings relate to or differ with existing literature.

5.2.1 Views and Understandings of Information Literacy by Stakeholders

The findings of this study are in line with that of Cunningham and Williams (2018), which found that different stakeholder groups hold a variety of conceptions of information literacy. The researcher wanted to find out how different stakeholders viewed and understood IL at NUL. In a nutshell, it was found that the students in this study viewed or conceptualized IL as, a set of information skills, as a participative process, and as fair and ethical use of information. The librarians on the other hand, viewed IL as the ability to identify relevant information sources, as lifelong learning, knowing where to find information and use it ethically, as knowledge and understanding of where and how to get information, as guiding information users to find the relevant information, knowing how to search, evaluate and understand information, ability to locate, evaluate and use information effectively; and instructional courses for library users. Lecturers viewed IL as knowing where to find information and use it ethically, knowledge and understanding of where and how to get information, knowing how to search, evaluate and understand information and ability to locate, evaluate and use information effectively. Also IL was viewed as a way of learning or as lifelong learning. Whilst many of the aspects identified by the study subjects were somewhat similar, the lecturers identified the use of IT tools, which students and the library did not pick up on. The librarians identified what they did as IL, for

example, guiding information users to find relevant information and instructional courses for library users.

The results suggest that the three groups have basic knowledge of the meaning of information literacy as these views closely conformed with the famous definition of the concept by ACRL (2000), which defined IL as "a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information" (p. 2). Similarly, the stakeholders' views also relate to the UK's Chartered Institute of Library and Information Professionals' (2004) definition, which defined IL as "knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner". This shows that students, librarians and lecturers had satisfying knowledge of what IL is, and according to the results, it is concluded that IL is well understood at NUL. The above notwithstanding, the more comprehensive response by the librarians' shows their more advanced understanding of information literacy, as it is one of the services they are required to offer in an academic environment. The lecturers also demonstrated a somewhat advanced level of understanding similar to that of librarians. The students on the other hand understandably were not as comprehensive in their response, demonstrating a narrow understanding of IL. This is indicative that students must be made to understand the concept of IL and why it is important for them to be information literate.

5.2.2 Information Literacy Interventions at NUL

The findings of this study revealed that a number of information literacy interventions exist at NUL. The majority of participants from the three stakeholders groups (students, librarians and lecturers) indicated that the university organises the following activities: library orientations, library instruction lessons/courses, assignments and tasks requiring research and evaluation, collaboration between librarians and lecturers, reference services, use of ICT in library services, communication skills course, workshop and training, etc. to promote information literacy skills among students. For example, it was gathered that through library orientation organized for new students at the beginning of every academic season, the university is able to equip new students with knowledge on how to make effective use of the library, that is, search, locate and retrieve

materials in the library. This exercise is very crucial to students since most of them come from secondary schools which did not have proper libraries.

The current findings are in agreement with previous findings by Kavulya (2003) and Williams and Evans (2008) who established that library orientation, library instruction, workshops, and information literacy module were among IL interventions used by universities and institutions of higher learning to enhance students' skills and competencies. However, one lecturer respondent noted that most students do not attend these activities since they take place outside the classroom teaching. In view of this observation, scholars and information literacy educators have advocated for timely and compulsory information literacy programmes in schools. Hart and Davids (2010) argued that IL skills are best learned and experienced when students undertake real academic work, which involves the need for collaboration between library and faculty. They further suggested that effective information literacy programmes must be introduced early and be reinforced often, with assignments of increasing complexity. The need to allocate more time in the timetable to information literacy education was also suggested (Hart & Davids, 2010). The need for compulsory IL intervention programme was also echoed by Secker (2011), who suggested that including IL in the curriculum in higher education institutions is very crucial for improving students' information literacy.

Bruce, et al (2006) stated that the various views and conceptions of different stakeholders influence the type of IL interventions and the teaching of IL that individuals practice. According to Bruce, et al (2006) IL interventions are classified under six frames of IL interventions or teaching which are; content based IL teaching, competency based IL teaching, learning to learn based IL teaching, personal relevance based IL teaching, social based IL teaching and relational based IL teaching.

The results of this study revealed that, as far as students were concerned, there was no content based IL teaching intervention at NUL as 44.0% of the students disagreed that IL was integrated into the curriculum while 33.9% of the students were not sure. The students' responses suggested that there was competency based IL teaching intervention at NUL. They indicated that there was library orientation (98.4%), library instruction courses (98.1%), IL workshops and seminars (84.1%) and librarians teaching IL (84.5%). Moreover, the students' responses suggested that

there was learning to learn based IL teaching at NUL as (96.1%) of them were in agreement that they are given assignments or tasks requiring research evaluation. In addition, the results suggested that there was personal relevance based IL teaching as they responded that NUL library offers reference services (96.1%) and also library manuals and guides (94.9%).

Similarly, for the librarians, content based IL teaching was not part of IL interventions at NUL as the majority disagreed that IL was integrated into the curriculum. Moreover, the results indicated that there was competency based IL teaching at NUL as librarians stated that NUL offers library orientation for new students and IL teaching by librarians, while some stated that NUL offers user education. In addition, librarians did not mention anything to do with learning to learn based IL teaching, however their responses suggested that there is personal relevance based IL teaching as they mentioned that NUL library offers reference services and library manuals and guides. Furthermore their responses did not encompass social based IL teaching and relational based IL teaching.

For the lecturers, content based IL teaching was also not part of IL interventions at NUL because the majority stated that IL was not integrated into the curriculum. Further, the results from lecturer interviews suggested that NUL practices competency based IL teaching as they reported that students are taught the use of electronic tools and computer skills in the library during orientation and IL lessons. They further mentioned that NUL offers IL workshops and seminars through the Centre for Teaching and Learning (CTL). Furthermore for lecturers, learning to learn based IL teaching was part of IL interventions at NUL as the majority of them indicated that students are given assignments to go search for information from different sources on their own. However, there was no indication of personal relevance based IL teaching, social based IL teaching and relational based IL teaching at NUL.

The researcher is in agreement with Bruce, et al (2006) who stated that the various views of IL by stakeholders influence the type of interventions and the teaching of IL. There is some correspondence between the librarians' views of IL, and the interventions that they identified at NUL. For example, the librarians viewed IL as guiding information users to find the relevant information sources. Thus, the IL interventions they spoke of fit the competency based IL teaching as this intervention uses a sequence instruction to teach IL. Their identification of guiding students to find relevant information as one intervention lend itself to personal relevance

based IL teaching. For lecturers, IL is about learning to learn, and therefore they believed that students would learn both subject content and IL as they prepare their assignments or written work which requires research. The implication of these results is that the various IL interventions available at NUL are not comprehensive, the researcher is in agreement that the available interventions at NUL don't include IL integration into the curriculum as evidenced by the results. Without IL being integrated into the curriculum or being formalised, it will be difficult for NUL to achieve high information literacy skills among its students. Furthermore, in as much as IL is important for lifelong learning, it should also be understood from the point of view of its impact on social issues and problems; thus students must also be taught to understand the role of IL beyond its academic purposes (social based IL); they must also appreciate the role and importance of information and how it relates to individual, community, social, economic and political spheres of life (relational IL).

5.2.3 Impact of IL Interventions on Students' Competencies

Students were asked about their views regarding the impact of IL interventions using the UNESCO model. The results revealed that the majority of students at the National University of Lesotho were positively impacted by the IL interventions in place. Though students showed higher level of a positive impact, a certain proportion of them were not positively impacted. This was evidenced by the fact that (45.5%) of the respondents were not sure whether IL interventions enable them to make effective use of data bases, indexing, abstracting and citation and use information ethically respectively.

The lecturers' response to the question on the impact of IL interventions of students pointed to the fact that not many were able to use it effectively and ethically. Even though students claim to have had a variety of positive impacts, librarians and lecturers see it differently. For example, some of the librarians reported that they don't think the interventions are that effective because the majority of students are struggling to access information using library resources. Other lecturers reported that many students do not cite sources correctly and most plagiarize their assignments. The discrepancy between students, lecturers and librarians' views on IL interventions impact could be due to over-inflated claims by students. This could be because students are reporting on their own self efficacy. According to Aharony and Gazit (2018) IL self-

efficacy refers to an individual's prediction or thinking that they have acquired certain abilities, and may result in them over inflating their ability when that is not necessarily the case (Aharony and Gazit, 2018). For instance, one lecturer respondent said the IL interventions are insignificant because students are not able to identify critical sources of information on the internet. Another lecturer said the students plagiarize their assignments, refuting the claim that students use information ethically. The results from students' questionnaire could be said to be an inaccurate portrayal of the state of information literacy among students at the university. This finding corroborates prior studies (Anofo & Filson, 2014; Yeboah, Dadzie & Owusu-Ansah, 2017) who found that students tend to overrate their information literacy skills and competencies. For instance, Anofo and Filson (2014) noted that despite claims of being information literate, a large majority of students' respondents in their study did not know how to search for information from the library catalogue. In addition, students failed to distinguish between library catalogue and bibliographic database. These findings led them to conclude that most students lack information literacy. In contrast, responses from librarians and lecturers indicate that students have not acquired the requisite information literacy skills. More importantly, it shows that IL interventions in place at the university have not had the desired impact on students.

The conclusion therefore is that the IL interventions in place at NUL do not have the essential ingredients to promote effective information literate students at the university. It is important to note that most of the IL interventions at NUL are programmes that take place outside the real academic work (see Sections 4.4.1 and 4.4.2) as highlighted by Hart and Davids (2010), and therefore, have not had optimum positive impact on students' information literacy and competencies. This study posits that integrating IL into the curriculum as part of IL interventions is vital for promoting effective information literacy among students at the university. A number of studies (e.g. Derakhshan and Singh, 2010; Secker, 2011; Freekery, Emerson and Skyrme, 2012) have shown that for students to be information literate, information literacy should be included in the national and university curricula. In contrast, the findings of the current study, particularly from librarians and lecturers suggest that this has not been the case at NUL. At present, NUL does not have an explicit policy that regulates how information literacy should be taught at the university. As gathered from the study, the choice to include information literacy as an explicit learning outcome for courses offered in the university resides with individual

lecturers. In such situation, some lecturers integrate IL in their courses while others do not. The implication is that students' ability to acquire information literacy will be hampered. Without an explicit policy and proper implementation plan, it will be difficult for NUL to achieve high information literacy among its students.

As Streatfield and Markless (2008) noted, measuring the impact of IL programme is about identifying and evaluating change. Since impact could be positive or negative, they emphasize that it is important to know what is producing results as well as what is not working well. This will assist in making proper evaluation of the impact of IL programmes for better results. According to Streatfield and Markless (2008), effective IL programmes must create the following effects:

- Enabling independent learning, especially on-line learning
- Changes in levels of student competence and confidence
- Changes in student behavior
- Effects of information literacy-based changes in the curriculum
- Student attitudes to virtual learning environments and information literacy
- The comparative efficacy of different levels and types of information literacy interventions

Therefore, in order to promote information literacy education, Dadzie (2007) recommends that universities need to develop or tailor their IL programmes to meet the specific needs and environment of universities. In addition to this, she adds that universities must be committed to IL to make it a campus-wide programme. This will not only promote lifelong learning but will also enable students to acquire the requisite IL skills. According to Kavulya (2003), IL skills give students the ability to compare, evaluate and extract information obtained from different sources while avoiding bias and selecting accurate and reliable information sources. Furthermore, they enable students to organise, apply and communicate information effectively depending on the situation. This includes the ability to make proper citations, proper use of language, respect for copy right issues, and avoidance of plagiarism.

5.2.4 Suggested solutions

The three stakeholder groups (students, librarians and lecturers) were asked to suggest possible solutions to promote information literacy at NUL. The results of the study established that the majority of the students suggests that it's important that IL should be integrated into the curriculum at NUL. This corroborate the librarians' and lecturers' responses whereby the majority suggested that IL should be integrated into the curriculum at NUL as the results revealed that most students don't attend orientations and IL lessons since they are not compulsory and therefore students attend on voluntary basis. See section 4.9.2 theme one. The respondents also suggested a number of possible interventions: that computer skills course should be offered beyond first year level, ICT infrastructure be improved, IL policy be developed and implemented, adequate internet and WIFI be provided, specialized personnel in the field of IL be hired or developed, that the library should create awareness and campaign of IL services, extend the time of IL orientations and lessons, and offer them at every level of study in the university.

The above findings are similar to those of Lwehabura & Stilwell, (2007), who reported that the teaching of IL conducted without a formalized programme, with inadequate resources and attended by students on a voluntary basis becomes unsuccessful. The authors stated that it's very important to integrate IL into the universities and colleges curriculum. Kavulya (2003) reported that the timing of library orientation programmes in the first and second week of students' life in university is inadequate since students at this time have little motivation to participate and may not be in a position to appreciate the centrality of the library in academic life. He also added that having to attend to large groups within a short time makes the orientation superficial and incomplete (Kavulya 2003). The findings also confirm those of Lwehabura & Stilwell, (2007), who reported that lack of an explicit IL policy for providing guidance and directives on how information literacy activities should be conducted has resulted in some existing IL programmes not being allocated official time within university timetables, they argued that without a defined IL policy, IL will continue to be offered out of concern by a few individuals, mainly librarians. Bruce (2001) pointed out that librarians need to come out and make a strong stand and awareness campaigns about the nature and value of their work, including IL. Lwehabura and Stilwell (2007) identified a number of challenges facing the teaching of information literacy in Tanzanian

universities, and one of the challenges was lack of and shortage of resources that leads to effective IL skills in students, such as computers and internet. The above results are also similar to those of Tuncer, (2013), that in order for students to be literate they need to acquire skills such as computer skills. He further added that collaboration of major stakeholders was critical for effective IL interventions (Tuncer, 2013). In order to avoid challenges which cause failure to developing successful IL interventions, Guitierrez, Wang and Herring (2011) suggest that librarians have to take responsibility for convincing students on the importance of IL. Thus among the challenges that need to be tackled by librarians is ensuring that students, as well as other members of the institution, understand and appreciate the importance of IL and raise their levels of interest in IL. Furthermore, the university management should take into consideration the recommendations that are offered by participants in studies.

5.3 Summary of the Key Findings

With regard to the view and understanding of information literacy by the three stakeholders at NUL, the findings of the study revealed that undergraduate students, lecturers and librarians at National University of Lesotho hold some similar conceptions of information literacy; they all viewed it as as the ability to access, interpret, understand and use information effectively. This makes it very clear that they all have basic knowledge and idea of what information literacy is, as these views are all common to that of the famous definition of the concept of information literacy from ACRL (2000). However, it is clear that students do not have as comprehensive an understanding as the lecturers and librarians, and this is understandable when we consider the types of IL interventions that all the respondents have identified.

On IL interventions, the study discovered that a number of information literacy interventions exist at NUL. This was supported by the fact that majority of participants from the three stakeholders groups (students, librarians and lecturers) indicated several IL activities that the university organises. Even though NUL organises several IL interventions, the results revealed that IL was not integrated into the curriculum. A broader understanding of IL was not imparted to students, because the IL interventions were limited to the steps of information seeking (competency based IL), and very few on content based IL. Some lecturers understood IL as learning to learn, and opted to include learning activities that focused on IL development. The relational and social based IL interventions were not identified at all, and these are the

approaches that would help students build a more comprehensive view of what IL is and its importance for academic life and beyond.

With regard to impact of IL interventions on students' competencies, the results established that even though the majority of students reported that they have adequate IL skills, most of them struggle to cite sources correctly while most plagiarize their assignments. Moreover the results revealed that most students were not sure whether the available IL interventions enable them to make effective use of data bases, indexing, abstracting and use information ethically. When interviewed, the majority of staff (lecturers and librarians) reported that the interventions have had unimpressive impact on students while others said they could not identify any impact since there is no assessment done on students.

Most lecturers complained that the impact was not pleasing as most students do not cite sources correctly and most of them plagiarize therefore using information unethically. Similarly they indicated that students do not use library databases rather they use sources such as Wikipedia and Google. Some felt that the impact is not positive because students are lazy to use the available resources and most of them do their work at the last minute. Librarians on the other hand complained that most students do not attend orientations and IL lessons as they are not compulsory hence the unimpressive impact on students' IL. This suggests that IL interventions in place at the university have not had the desired impact on students. This might be attributed to lack or the absence of formal IL policy and IL not being integrated into the curriculum at NUL.

With regard to the suggested solutions and recommendations by participants, the results established that there are areas that need to be improved for better development of students' information literacy at NUL. The participants suggested several recommendations and amongst them, the majority suggested that IL should be integrated into the curriculum. These results suggest that there are gaps that need to be filled in the area of information literacy at NUL.

5.4 Contribution to knowledge

This study made use of three conceptual frameworks. The first conceptual framework is based on Cunningham and Williams (2018) recent work: The seven voices of information literacy. The second framework was the Six Frames for Information Literacy Education coined by Bruce,

Edwards and Lupton (2006) which was used to identify information literacy interventions at NUL. And the third framework was the UNESCO model detailed by Horton (2007) which looked at the impact of IL interventions on students' IL skills and competencies. The first model was used to look at the views and understandings of information literacy for the three stakeholders (teachers, librarians and students). The results of the study suggested that the various views of these stakeholders were influenced by the type of IL interventions in place at NUL, which in turn impacted students' IL skills and competencies. The conceptual framework adopted by this study enabled the researcher to achieve the study's objectives of studying the views/conceptions of IL held by the respondents; the types of IL interventions in implementation at NUL; and the impact of these on the IL of NUL students. The study determined that whilst there could be six types of IL interventions (ranging from the simple to the complex) according to Bruce et al (2006), only three of them, competency based, learning to learn, and personal related interventions were in place, and even then to a limited extent as shown in the study.

5.5 Implications of the study

The study intended to assess the impact of IL interventions for 4th year students at NUL. In regard to the findings of the study the implications are that the three (3) stakeholders (students, librarians and lecturers) at NUL have a rudimentary understanding and idea of what information literacy is. Moreover, the implication of the results of the study is that there is a limited number of IL interventions at NUL. The IL interventions are limited in a number of ways that include the timing of the IL instruction by library staff, the lack of integration into the curriculum, the optional nature of including IL as a learning objective in the various courses offered, the ad hoc nature of reference services, and the lack of a focus on understanding information and information literacy beyond academic purposes. Furthermore, IL interventions in place at NUL have not had the desired impact on students' IL skills and competencies and this could be due to lack or the absence of formal IL policy and IL not being integrated into the curriculum at NUL. All of the above show that NUL has several gaps to fill in the area of information literacy.

5.6 Recommendations

5.6.1 Short Term Recommendations

- In the short term, the university should make library orientations and lessons compulsory. Lecturers and librarians were of the view that the impact on students' IL skills and competencies were not impressive as students struggle to cite sources correctly and have poor research skills. Again students have a problem in accessing relevant information sources as the majority don't use the library databases. This could be attributed to students not attending library orientations and lessons due to the fact that they are not compulsory and graded. NUL management should therefore make such orientations and IL lessons compulsory and should provide resources to support IL assessment in such areas.
- Secondly, the University should provide IL orientation at all levels throughout the University. The findings of the study have revealed that IL orientations are only offered at first year level for incoming new students. NUL management and the library professionals should therefore consider offering IL orientations throughout the entire university at all levels every academic year because IL is a developing area and there are always new features in the field of information, these can be new information sources, new databases, new software, new ways of accessing or retrieving information materials etc.

5.6.2 Medium Term Recommendations

- In the medium term, NUL library should make IL awareness campaigns. Librarians and lecturers in the study reported that some of the students do not attend library orientations and lessons, and some do not use library databases, rather they use Google. This could be attributed to lack of awareness of the importance of the library information services. As some of the participants stated, NUL library should therefore consider ways to create awareness and market their resources. The campaigns could be done through the university radio (Dope FM) and through students' e-mails to let them know of the new available resources and services.

- Secondly, NUL should go for trained personnel who are specializing in IL. The lecturers and librarians in the study are in agreement that most students don't have adequate IL skills and competencies such as searching for relevant information and citing sources. This could be attributed to the fact that IL orientations and IL lessons are only conducted by librarians who may be qualified as librarians but do not have specialized skills and effective training in information literacy. NUL management should therefore consider developing their library staff to offer IL modules and to collaborate with academic staff (lecturers) on IL interventions.

- Thirdly, the University should consider offering computer skills course beyond first year level and this should be continuous. The study participants reported that a computer skills course or program is being offered at first year level only, therefore denying students to develop computer literacy skills as they continue with their studies. NUL should therefore allow students to get computer skills beyond first year level.

5.6.3 Long Term Recommendations

- In the long term, there should be improvement of the ICT equipment, internet bandwidth and WIFI in the University. The study suggests that most NUL students don't use the available databases in search of relevant and acceptable information when writing their assignments and researches. This could be attributed to the limited bandwidth of internet, lack of WI-FI around the campus and to the fact that the students have to do with limited computer labs, as the results have revealed that there is only one computer lab in the library and a total of six labs in the entire campus. The university administration should therefore procure more computers and also improve WI-FI and network connectivity. The availability of more computers and stable internet coverage will enable students to have all the resources they need for their learning readily available.

- Secondly, the University should design IL policy. The results of the study have established that lecturers include IL in their courses individually and by choice. This could be attributed to the fact that there is no formal IL policy at NUL that gives staff direction on how to promote IL, hence some of the lecturers don't find it important to

include it in their teaching. NUL management should therefore develop a formal IL policy so that every lecturer starts including IL in their courses in order to promote IL in the university.

- Thirdly, the University should design a formal IL curriculum. The study discovered that even though a number of interventions exist at NUL, They have not positively impacted students' IL skills and competencies and this could be attributed to the absence of IL in the curriculum. Based on such evidence, there is need to design a formal IL curriculum so that it becomes compulsory and graded for the better promotion of IL at NUL, and can be offered at all levels of study, not just at first year level.

- Lastly, NUL should consider integrating IL into the curriculum. It is clear from the results that IL is not integrated into the curriculum at NUL. It is therefore important that the university administration moves for the integration of IL into the curriculum by developing policy and guidelines. Further, the university should consider the new ACRL Framework for teaching IL in higher education. This framework is a tool for guiding the development of information literacy programs in higher education institutions, it basically introduces the core ideas of teaching information literacy (ACRL, 2016). By reading this framework and discussing it, the library and faculties can collaborate to consider how to integrate the framework concepts or frames into the courses and academic programs. The administration should also deliver resources to support a significant assessment of information literacy at all levels in the university (ACRL, 2016).

5.7 General Limitations of the Study

While this study makes an important empirical contribution to information literacy in higher education, it has limitations:

- The results of the study cannot be generalized to the entire population at National University of Lesotho since the study focused only on fourth year undergraduate students.

- Furthermore, since the sample size for the study was small and limited to fourth year undergraduate students, the study might not have captured adequate variables required to be investigated.

5.8 Recommendations for Further Research

Based on the limitations of the study discussed above, the following areas are recommended for further research:

- Using a bigger sample, a similar study should be conducted to assess the impact of information literacy interventions among undergraduate students at the National University of Lesotho taking into consideration all levels of study of the students in the University.
- There is also a need to assess the capacity of the University of Lesotho Library towards information literacy development.

5.9 Conclusion

This study intended to assess the impact of information literacy interventions for 4th year students at the National University of Lesotho. It sought to understand the conceptions of information literacy by 3 stakeholders at the National University of Lesotho, to identify information literacy interventions in place at the National University of Lesotho and to assess the impact of those interventions on students' IL competencies at the National University of Lesotho. The study therefore succeeded in finding out the views and understandings of the three stakeholders (teachers, librarians and students) at NUL, it further succeeded in identifying the available IL interventions at NUL and lastly the results of the study revealed that there was limited positive impact on students' IL skills and competencies. This could be due to lack of IL policy and formalized IL courses in the University. It is hoped that the recommendations of the present study will bring change in the area of IL at NUL for a positive impact in the future.

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APPENDICES

Appendix 1: time plan for the project

Schedule of activities	Time
Chapter one: introduction. Discussing a topic, writing the first draft, writing the second draft, writing the final draft and submission of the final draft	24th October 2018 to 15th February 2019
Chapter two: Literature review. Writing the first draft, writing corrections, writing corrections again and submitting the final draft.	26th February to 18th April 2019
Chapter three: Methodology. Writing the first draft, writing the second draft, drafting data collection instruments, making corrections, submission. Defending the research proposal	8th May to 6th June, 2019
Chapter four: Data Analysis, Presentation and interpretation of Results. Data collection and coding. Writing first draft, making corrections and submission of the final draft	10th June to 23rd August, 2019
Chapter five: Discussion of the Findings, Summary and Recommendations. Writing the first draft, doing corrections and submitting the final draft	15th August to 30th August, 2019
Preparation of the first draft of dissertation, making final corrections and submitting the final draft of dissertation to the department of LIS, school of graduate studies and to the	13th September to 27th September 2019

external and internal examiners.	

Appendix 2: Informed Consent Form

PROJECT TITLE: ASSESSMENT OF IMPACT OF INFORMATION LITERACY INTERVENTIONS FOR 4TH YEAR STUDENTS AT THE NATIONAL UNIVERSITY OF LESOTHO.

Principal Investigator: Ms Joalane Rose Moloantoa
Phone number(s): +26773543608 / +26656106527 / +26658912534

What you should know about this research study:

- We give you this informed consent document so that you may read about the purpose, risks, and benefits of this research study.
- You have the right to refuse to take part, or agree to take part now and change your mind later.
- Please review this consent form carefully. Ask any questions before you make a decision.
- Your participation is voluntary.

PURPOSE

You are being asked to participate in a research "assessment of impact of information literacy interventions for 4th year students at the national university of Lesotho". The purpose of the study is to contribute to investigating information literacy interventions and their impact on undergraduate students at NUL, and for fulfilment of the requirements for the Master's Degree in Library and Information studies. You were selected as a possible participant in this study because the researcher believes you have reliable information required to meet the purposes of the study. Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

PROCEDURES AND DURATION

If you decide to participate, you will be invited to the interview at the time and place you will find it comfortable for you to participate. The interview is estimated to take one hour.

RISKS AND DISCOMFORTS

To the best of the researcher's knowledge, there will be no risk or harm that will occur in the process. The anticipated risks associated with participation in this research will be minimal.

BENEFITS AND/OR COMPENSATION

There will be no compensation for participation in this study.

CONFIDENTIALITY

The data from this investigation will be stored and locked in my cabinet, and be disposed immediately after the approval of the dissertation. The data collected will only be used in this study. Only I and my supervisor will have access to the collected data. None of these will be used for commercial use.

VOLUNTARY PARTICIPATION

Participation in this study is voluntary. If you decide not to participate in this study, your decision will not affect your future relations with the University of Botswana, its personnel, and associated institutions**.** If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without penalty. Any refusal to observe and meet appointments agreed upon with the central investigator will be considered as implicit withdrawal and therefore will terminate the subject's participation in the investigation without his/her prior request. In this event the subject will be paid what if owed to him/her or forfeit a proportionate amount of relative payment mentioned earlier in this document. In the event of incapacity to fulfill the duties agreed upon the subject's participation to this investigation will be terminate without his/her consent and no compensation will be offered under these circumstances.

AUTHORIZATION

You are making a decision whether or not to participate in this study. Your signature indicates that you have read and understood the information provided above, have had all your questions answered, and have decided to participate.

_____ _____

Name of Research Participant (please print) Date

_____ _____

Signature of Staff Obtaining Consent Date

(Optional)

YOU WILL BE GIVEN A COPY OF THIS CONSENT FORM TO KEEP.

If you have any questions concerning this study or consent form beyond those answered by the investigator, including questions about the research, your rights as a research participant; or if you feel that you have been treated unfairly and would like to talk to someone other than a member of the research team, please feel free to contact the Office of Research and Development, University of Botswana, Phone: Ms Dimpho Njadingwe on 355-2900, E-mail: research@mopipi.ub.bw, Telefax: [0267] 395-7573.

Appendix 3

UNIVERSITY of BOTSWANA

Office of the Deputy Vice Chancellor (Academic Affairs)

Office of Research and Development

Corner of Notwane and Mobuto Road, Gaborone, Botswana

Pvt Bag 00708 Gaborone Botswana

Tel: [267] 355 2900
Fax: [267] 395 7573
E-mail: research@mopipi.ub.bw

29th July 2019

Ref: UBR/RES/IRB/SOC/GRAD/210

Joalane Rose Moloantoa
P O Box 940,
Mafeteng 900, Lesotho

RE: TO WHOM IT MAY CONCERN

This letter serves to confirm that Ms. Joalane Rose Moloantoa is pursuing her master's degree in Library and Information Studies in the Faculty of Humanities, University of Botswana. She has proposed to conduct a study titled **"Assessment of the Impact of Information Literacy Interventions for 4th Year Students at the National University of Lesotho".** The office of Research and Development at the University of Botswana has been tasked with the responsibility of overseeing research at UB and facilitating the ethics review process for students and staff at UB. Since Ms. Joalane Rose Moloantoa will be collecting data in Lesotho she is required to obtain ethical clearance from an Ethics Committee (EC) or Institutional Review Board (IRB) in Lesotho.

The UB IRB is satisfied with the process for data collection, analysis and the intended utilization of the findings from her research. We will appreciate your assistance and consideration of her application for ethics review.

Sincerely,

The Secretariat, University of Botswana Institutional Review Board
Office of Research and Development

UNIVERSITY OF BOTSWANA
Office of Research & Development
2019 -07- 29
P/BAG UB 00708 GABORONE
TEL:+267 3552900/2902 FAX: +267 3957573
Email: research@mopipi.ub.bw

THE NATIONAL UNIVERSITY OF LESOTHO

Telephone: +266 52213907
+266 22340264
+266 22340601
Fax: +266 22340000
Website http//www.nul.ls

P O Roma 180,
Lesotho.
Africa.

OFFICE OF THE REGISTRAR

17th June 2019

REF: REG/ADM-1.37
LML/hyml

Ms. Rose Moloantoa
University of Botswana
Faculty of Humanities
Department of Library & Information Studies
Private Bag UB 00703
Gaborone
Botswana

Dear Ms. Moloantoa

Re: Request to conduct Research at the National University of Lesotho

The National University of Lesotho (NUL) is in receipt of your application to conduct research at this institution. The title of the study is "**Assessment of the Impact of Information Literacy Interventions for 4th year undergraduate students at the National University of Lesotho".**

After careful consideration of all relevant facts, the University has agreed to allow you to continue with your assignment as requested. It is hoped that the research outcome will be beneficial to both the institution of Higher learning and the country at large.

By copy of this letter the Deans faculties of Agriculture, Education, Law, Humanities, Health, Sciences and Science and Technology, Social Sciences, Librarian and the 4th year students are requested to assist you with all the necessary information you need to carry out your assignment.

Yours sincerely

L. MAQALIKA-LEROTHOLI
Registrar

Cc: Deans of faculties: Agriculture, Education, Law, Humanities, Health, Sciences and Science and Technology, Social Sciences, Librarian and the 4th year students.

Appendix 4

Questionnaire (Students)

Dear respondent,

My name is Joalane Rose Moloantoa, a Masters student in Library and Information Studies Programme at the University of Botswana.

I am conducting a research on the information literacy interventions at National University of Lesotho. The purpose of the research is to investigate how information literacy interventions in the university impact student skills and competencies. I therefore request for your participation. Please note that the data collected will be used solely for academic purposes. It will take you only 12-15 minutes to complete this questionnaire. The questionnaire is completed anonymously, thereby providing **full confidentiality**.

Instructions

- *Do not write your name.*
- *Tick where it is appropriate*
- *Feel free to express your opinion where possible*

Section A: Demographic information

Kindly tick the relevant box that represents your answer

1. Your Gender: Male [ ] Female [ ]

2. Your Age: 16-20 [ ] 21-25 [ ] 26-30 [ ] 31 and above [ ]

3. Faculties:

a) Faculty of Agriculture [ ]
b) Faculty of Education [ ]
c) Faculty of Health Sciences [ ]
d) Faculty of Humanities [ ]
e) Faculty of Law [ ]
f) Faculty of Science [ ]
g) Faculty of Social Sciences [ ]

Section B: Understanding of information literacy

4. Which of the following best describes your view of information literacy?

Keys: Strongly Agree (SA), Agree (A), Not Sure (NS), Strongly Disagree (SD), Disagree (D)

	I view information Literacy as:	SA	A	NS	SD	D
1	Knowing how to use IT tools					
2	Understanding when there is an information need, how to search, extract and use information					
3	A way of learning; This includes the skills to evaluate information and to access electronic information					
4	A fair and ethical use of information; this includes referencing and citing relevant sources of information and acknowledging authors					
5	Critical thinking; am I able to understand and evaluate the information that I get?					
6	A participative practice; am I able to actively incorporate formal resources of information into my learning?					
7	Knowing how to stay safe online; this include protecting information such using safe passwords					

5. Which of the following best define an information literate person?

Keys: Strongly Agree (SA), Agree (A), Not Sure (NS), Strongly Disagree (SD), Disagree (D)

	An information literate person is able to:	SA	A	NS	SD	D
8	Recognize or identify an information problem					
9	Identify or to find the needed information					
10	Know how to use information to create new knowledge					
11	Fully understand found information and to make use of it					
12	Locate information					
13	Evaluate information; (knowing whether the found information is useful or not)					
14	Know how to organize information; (putting information together)					
15	Know how to communicate and present information					
16	Know how to use information to solve a problem					
17	Preserve information; (to keep information as it is, without destroying it)					
18	Dispose irrelevant information and usage of the important one					
19	Recognise when information is needed and how to locate, evaluate and use it effectively					
20	Access, evaluate, organise and use information from a variety of sources					
21	Use and evaluate information in an ethical manner; include providing citations, references and to acknowledge authors.					

Section C: Information literacy interventions and Implementation at NUL

Keys: Strongly Agree (SA), Agree (A), Not Sure (NS), Strongly Disagree (SD), Disagree (D)

	Information literacy interventions at NUL include	SA	A	NS	SD	D
22	Library orientation					
23	Library instruction courses					
24	Assignments or tasks requiring research and evaluation					
25	Reference services offered by library staff					
26	Library manual and guides					
27	Information literacy workshops/seminars					
28	Introduction to use of ICT in library services					
29	Teaching Collaboration between librarians and lecturers teaching					
30	Information literacy integrated in courses; (are there any information literacy courses/ is it included in the curriculum?					
31	Librarians teaching information literacy					
32	Specialist teachers of information literacy					
33	Subject teachers teaching methods and learning activities developing information literacy					

Section D: Impact of information literacy interventions

Q4	Impact of information literacy interventions on students include	SA	A	NS	SD	D
34	The available IL interventions enable me to think critically or evaluate the value of the information that I find					
35	Help me to select accurate and reliable information sources					
36	Allow me to know how best to select the right information for different tasks					
37	Enable me to gain the ability to understand issues related to accessibility of information					
38	Enable me to know how to match information needs against information resources					
39	Enable me to develop proper understanding of information need					
40	Promote basic use of ICTs (by students)					
41	Expand my research skills and experience					
42	Enable me to organise, apply and communicate information effectively					
43	Enable me to effective use of databases, indexing, abstracting and citation indexes					
44	Enable me to use information ethically such as (citing information sources and avoiding plagiarism)					
45	Help me to recognise when information is needed and how to locate, evaluate and use it effectively					
46	Help me to access, evaluate, organise and use information from variety of sources					

47. What other recommendations or measures would you suggest to promote IL at NUL?

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Thank you very much for sacrificing your time. I appreciate your cooperation.

Contacts: jayymoloantoa@gmail.com

Cell: +26656106527 / +26658912534 (Ls)

+26773543608 (Bw)

Appendix 5

Interview Guide (Lecturers)

1. What is information literacy?
2. Do you include information literacy as an explicit learning outcome for your course? If yes, what form does this take, if not, for what reasons?
3. Do students access information themselves, or do you provide the bulk of their information sources? Why?
4. How well do you think students in your course(s) are able to access acceptable/relevant information sources? What are the reasons for this opinion?
5. Does NUL offer any information literacy intervention programmes? If yes, what are the programmes?
6. How would you describe the impact or benefits of those programmes to students? (Use appendix 4 to answer this question).
7. In your opinion, do you think there is a need to integrate information literacy into the curriculum?
8. What kind of support does NUL management provide towards promoting information literacy?
9. What are the major challenges hindering the teaching of information literacy at NUL?
10. What could be done to improve information literacy skills and status of students at NUL?

Thank you for your participation

Appendix 6

UNESCO Standards

Do you think students have the following attributes?

a) Ability to recognize or identify a problem [ ]

b) Ability to identify & define the selected information [ ]

c) Know how to use information to create new knowledge [ ]

d) Ability to fully understand found information [ ]

e) Ability to locate information [ ]

f) Know how to organize and evaluate information [ ]

g) Know how to communicate and present information [ ]

h) Know how to utilize information to solve a problem [ ]

i) Being able to preserve information [ ]

j) Ability to dispose irrelevant information and usage of the important one [ ]

k) Know how to use and evaluate information in an ethical manner [ ]

l) Other……

……

Appendix 7

Interview Protocol (Librarians)

1. What is your understanding of the concept, information literacy?
2. Is information literacy integrated into NUL curriculum?
3. If yes to Q2, describe the information literacy programmes in place at the university.
4. How would you describe the impact of those programmes on students' competencies? (Use appendix 6 six to answer this question).
5. What role does NUL play in promoting information literacy?
6. As a librarian, how are you involved in promoting information literacy?
7. Is there any cooperation between faculty and the library?
8. How are NUL students helped by the library? What IL services do you provide?
9. From your experience, what are the major challenges encountered by NUL students in using online library resources?
10. What would you recommend should be done to improve the information literacy status of students at NUL?

Thank you for your participation

Appendix 8

UNESCO Standards

Do you think students have the following attributes?

a) Ability to recognize or identify a problem [ ]

b) Ability to identify & define the selected information [ ]

c) Know how to use information to create new knowledge [ ]

d) Ability to fully understand found information [ ]

e) Ability to locate information [ ]

f) Know how to organize and evaluate information [ ]

g) Know how to communicate and present information [ ]

h) Know how to utilize information to solve a problem [ ]

i) Being able to preserve information [ ]

j) Ability to dispose irrelevant information and usage of the important one [ ]

k) Know how to use and evaluate information in an ethical manner [ ]

l) Other……

……

APPENDIX 9: BUDGET PLAN

Item No	Description	Quantity	Unit Price(Pula) and (Maluti)	Total Price (pula)
	Stationary			
1	Ream of Paper	4	P130	P520
2	Unit of ball point pen	1	P73	P73
3	Stapling machine	1	P80	P80
4	Binding/photocopying	5	P1790	P1790
5	Box of Staples	1	P70	P70
	Subtotal			**P2823**
	Travel and Transport Costs (to collect data in Lesotho)			
6	Botswana to Maseru back to Botswana	1	M500	M500
7	Maseru to National University of Lesotho	2	M130	M260
8	Maseru back to Botswana	1	M500	M500
	Subtotal			**M1260**
	Food & Accommodation			
9	Campus accommodation (to collect data at NUL Campus)	8	M100	M800
10	Lunch/day	8	M30	M240
11	Super/day	8	M30	M240
12	Morning Breakfast/day	8	M22	M176
	Subtotal			**M1456**
13	10 % Contingency & other logistics			M780
	GRAND TOTAL			**M2716 and P2823**

Exchange Rate: 1BWP = 1.34LSM