

**AN ASSESSMENT OF THE ATTITUDES OF UNDERGRADUATE STUDENTS TOWARDS  
INFORMATION LITERACY TRAINING: SEFAKO MAKGATHO HEALTH SCIENCES UNIVERSITY  
(SMU) LIBRARY AS CASE STUDY**

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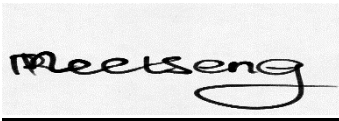
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## DECLARATION OF OWN WORK

I, **Mmakgoshi Precilla Reetseng** declare that the mini dissertation, “An assessment of the attitudes of undergraduate students towards information literacy training: Sefako Makgatho Health Sciences University library as a case study”, which I hereby submit for the degree Masters of Information Technology at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at this or any other tertiary institution.

I obtained the applicable research ethics approval to conduct the research described in this work. I declare that I have observed the ethical standards required in terms of the University of Pretoria’s code of ethics for researchers and the policy guidelines for responsible research. I also declare that all the information sources used have been cited and included in this document as references.



Signature

2016/04/22

Date

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## ABSTRACT

Information literacy skills training should be utilised by libraries as a strategy for transforming non-library users into constant users by teaching them appropriate skills that can impact on their knowledge and attitudes towards the utilisation of library resources. Although libraries do provide training aimed at making students conscious of the range of library resources and services and how to use them in their studies and career development, it has regrettably been observed that the skills and services are not well utilised by many.

Students in many institutions still rely heavily on the librarian even after receiving training. This has also been observed at the Sefako Makgatho Health Sciences University (SMU) library. This study titled, *An assessment of the attitudes of undergraduate students towards information literacy training: Sefako Makgatho Health Sciences University (SMU) Library as case study*, therefore addressed the following research problem: To what extent does the information literacy skills training offered at the Sefako Makgatho Health Sciences University (SMU) Library affect students' attitudes towards information literacy training and use of information retrieval systems?

The study was aimed at offering 2015 first year students at the Sefako Makgatho Health Sciences University and the librarian responsible for information literacy skills training an opportunity to express their perceptions and feelings about the library's information literacy skills training programme and the use of information retrieval systems. The study also aimed at determining barriers that students experience in independently and effectively utilising library services and systems and identifying possible gaps in the training. The study also looked at aspects of the training that influenced students positively.

A case study of first year students from the Schools of Medicine, Pathology and Pre-Clinical Sciences, Oral Health Sciences and Health Care Sciences at SMU was conducted using a mixed methods approach, collecting and analysing quantitative and qualitative data. It employed questionnaires (for quantitative data), focus group interviews (for qualitative data) and an interview with the librarian responsible for information literacy training (qualitative data). Data were collected from the 14<sup>th</sup> October to the 06<sup>th</sup> November 2015. A total of 394 questionnaires were distributed, 225 questionnaires were returned and 219 were sufficiently completed to be useful. Four focus group interviews were held with 18 first year students; all schools were represented.

Students contributed ideas and voiced their opinions about the value of information literacy skills training for their studies, future career and their everyday life. They shared perceptions on their satisfaction with the skills learned and had the opportunity to rank the skills they have improved as a result of the training.

Students confirmed that the training programme was indeed valuable and required for various aspects of their life, studies and career. They learned the skills needed when searching for information. Their effort and time for searching, locating, finding, accessing, evaluating and using information from the shelves, catalogue, internet and databases had also been decreased.

Some of the gaps identified by students were that they struggled with acquiring new skills as they had no prior exposure to libraries and computers, the classes were overcrowded and uncontrollable, the scope covered was too wide for one session, the training was overwhelming and the timing of the year wrong. Students also made suggestions and recommendations, for example continuous or monthly training, online training sessions, small group sessions, facilitation training for the trainers and including basic computer training.

The practical recommendations from the study, which include the student recommendations, can be utilised to improve information literacy skills training at Sefako Makgatho Health Sciences University Library, and also hold value for other academic contexts. From a theoretical viewpoint, theories of self-efficacy and affordance theory can be explored in further work.

## KEYWORDS

Academic libraries

First year students

Higher education libraries

Information literacy

Information literacy training

Medical libraries

Student perceptions

Under-graduate students

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## LIST OF ABBREVIATIONS

ACRL	American College of Research Libraries
ALA	American Library Association
CD-ROM	Compact Disk Read-Only Memory
CHELSA	Committee of Higher Education Libraries of South Africa
EBIT	Faculty of Engineering, Built Environment and Information Technology (EBIT) at the University of Pretoria (UP)
ILC	Information Literacy Committee
Medunsa	Medical University of Southern Africa
NLM	National Library of Medicine (Classification system)
OPAC	Online Public Access Catalogue
SCONUL	Society of College, National and University Libraries
SMU	Sefako Makgatho Health Sciences University
SMUREC	SMU Research Ethics Committee (SMUREC)
UL	University of Limpopo
UNIN	University of the North
UP	University of Pretoria



## CHAPTER 1: INTRODUCTION AND BACKGROUND TO THE STUDY

### 1.1 INTRODUCTION

Information literacy skills are pivotal in a world dominated by information and needs that may trigger information needs, and where people rely on information to function effectively in the global society (Bundy, 2002: 125; Hartmann, 2001: 11). Information needs are often secondary to primary needs such as for safety, good healthcare, academic success and being competitive (Wilson, 1999: 252).

Information literacy is a critical skill in doing research (American Library Association, 2000: 3; Hulett *et al.*, 2013: 152; Latham & Gross, 2011: 368), in the workplace (Salisbury & Karasmanis, 2011: 43), in coping with lifelong challenges (American Library Association, 2000: 4; Al Awadhi & Rehman, 2012: 355; Latham & Gross, 2011: 368) and in academic performance (American Library Association, 2000: 4; Al Awadhi & Rehman, 2012: 355; Emmett & Emde, 2007: 211; Julien *et al.*, 2009; Latham & Gross, 2011: 368). Information literacy cannot be treated separately from learning (Salisbury & Karasmanis, 2011: 43). It is an essential skill that supports learning and has to be developed in a student's first year of study or as a new user of academic libraries (Bhatti, 2010: 11; Salisbury & Karasmanis, 2011: 43). Emmett and Emde (2007: 211) broaden the scope by saying that information literacy skills should be taught to students at all levels of their studies.

Information literacy is regarded as the umbrella term for user education, library instruction, library orientation, bibliographic instruction and information skills training (Bhatti, 2012: 3; Bundy, 2002: 125). It equips students with knowledge on information sources and information retrieval systems available for use through a library, the system's functionalities, how to find relevant information sources, search strategies and the ethical use of information (American Library Association, 2000: 4; Hulett *et al.*, 2013). Training in these skills should also make students confident about using the library (Julien *et al.*, 2009; Ogunmodede & Emeahara, 2010: 1). Although the SMU library (current case study site) uses different terminology (i.e. library orientation and user education, respectively) this study will accept information literacy as umbrella term and preferred concept, thus including library orientation and user education.

Faculty and librarians are guided by information literacy standards for higher education such as the standards set by the American Library Association (ALA) (American Library Association, 2000: 5), the American College of Research Libraries (ACRL) standards (American Library Association, 2000: 5; Emmett & Emde, 2007: 211) and Information Literacy Competency Standards (Emmett & Emde, 2007: 211). These standards are widely used in higher education. The standards set outcomes that can serve as guidelines to

be followed when developing assessment methods for students' information literacy skills and learning experiences that meet with local needs and circumstances (McCulley, 2009: 171). The standards as accepted by the Association of Colleges and Research Libraries include: standards for determining the nature and extent of the needed information, for assessing the needed information effectively and efficiently, for critically evaluating information and its sources, for incorporating selected information into one's knowledge base, for understanding economic, legal, and social issues surrounding the use of information, as well as standards for ethical and legal access and use of information (Association of Colleges and Research Libraries, 2000).

Librarians doing information literacy training should provide proof that the training they offer is valid and genuine. The proof should embrace the effectiveness of training on students' information retrieval skills, academic performance, information literacy skills, and achievement of program and national standards (Julien *et al.*, 2009; Schilling & Applegate, 2012: 258). The assessment should be done continuously to evaluate students' information literacy skills in order to identify the gaps in their knowledge (Bundy, 2002: 130; Orr, Appleton & Wallin, 2001: 457; Salisbury & Karasmanis, 2011: 43).

Lack of assessment poses a problem when libraries must qualify and quantify their impact on academic objectives and outcomes. Without systematic assessment, libraries will have no reliable information to determine the impact of existing training on students' information literacy skills and learning needs. Librarians will lack researched data and logical processes to make valid judgements and to support decisions on the continuation, expansion and modification of library educational programmes. They will also have to guess the impact of information literacy training on students' academic outcomes (Schilling & Applegate, 2012: 260). In addition, libraries should assess students' and faculty's attitude to information literacy and the training offered by a particular institution (Al Awadhi & Rehman, 2012: 358). Attitude determines whether skills will be applied, and whether such skills will have a life-long impact (Noe, 1986: 743). With the evaluation of information literacy skills, (for example, through tests and assignments) there are many factors that need to be considered which fall outside the control of a researcher (Moyane, Dube & Hoskins, 2015: 30). For the purposes of this mini-dissertation, this study will thus only consider the assessment of attitude to information literacy skills and training.

## **1.2 BACKGROUND TO SEFAKO MAKGATHO HEALTH SCIENCES UNIVERSITY (SMU)**

The Sefako Makgatho Health Sciences University (SMU) is a product of the 2014 demerger of the University of Limpopo and the University of Limpopo, Medunsa Campus (Sefako Makgatho Health Sciences University, 2015: online). SMU was launched in January 2015. It is the former Medical University of

Southern Africa (Medunsa) (Sefako Makgatho Health Sciences University, 2015: online). Medunsa was merged with the University of the North (UNIN) in 2005 to form the University of Limpopo (UL) (Motiang, 2013: 2; University of Limpopo, 2013: online). The former Medunsa was founded in 1976 under the South African apartheid regime to serve as an education centre for training black health professionals (Motiang, 2013: 2; University of Limpopo, 2013: online). SMU is located at Ga-Rankuwa, north of Pretoria (Sefako Makgatho Health Sciences University, 2015: online).

SMU is comprised of four schools, namely, School of Medicine, School of Health Sciences, School of Pathology and Pre-Clinical Sciences, and the School of Oral Health Sciences.

The SMU library adopted the role played by the University of Limpopo, Medunsa Campus library. It thus supports teaching, learning, research and community engagement (Motiang, 2013: 3; University of Limpopo, 2013: online). It serves the information needs of the four schools mentioned above and also provides access to print and electronic resources, and related services to students, academic staff, support staff, the Dr. George Mukhari Academic Hospital staff and the community (Motiang, 2013: 8; University of Limpopo, 2013: online).

At the SMU library, first year students receive library orientation encompassing the library, different sections and services rendered in those sections, policies and procedures of use, and the library's expectation of users. This is in line with Bhatti's (2010: 11) interpretation of the term "library orientation". They go on a library tour with library staff and also receive detailed information on literacy skills training by a librarian. The training covers use of library resources, such as books, journals, the internet and databases. The training session takes 40 minutes. Students are assessed using a practical post-test on search strategies for the library catalogue, internet and databases.

Third year students receive what is referred to as user education at the SMU library. The training is offered to Evidence Based Medicine (EBM) students who are registered for the Practice of Medicine course (POME302). All third years students are required to register for this module. The training provided in the module is intended to enable them to deal with uncertainties in clinical decisions and judgement, to locate information on specific conditions, and to become informed practitioners (University of Limpopo, Department of Family Medicine and Primary Health Care, 2013: 4). The training is credit-bearing and students are assessed by their block lecturer after the training. However, this study will focus only on first year students.

Although assessment of information literacy skills is done for first and third year students, the SMU library does not do assessments of attitude to information literacy skills and the training offered. Hulett *et al.* (2013: 153) also found that much of the earlier research concentrated on assessment of information literacy skills of new students. The studies were aimed at identifying and addressing gaps or weaknesses with regard to students' information literacy skills. Not much research was conducted on the attitudes of new students towards the information literacy skills training.

### 1.3 PROBLEM STATEMENT, RESEARCH QUESTION AND SUB-QUESTIONS

Researchers such as Robertson (1992), Abubakar (2003) and Maduako (2013: 3) have raised concerns that, libraries do offer training aimed at making students aware of the scope and availability of library resources and services, in order to ensure that they know how to use information resources and retrieval techniques which will be vital in their learning and career development. However it has unfortunately been noticed that learned skills were not utilised effectively (Issa, Blessing & Daura). Many students were found to be ignorant (Maduako, 2013). Some did not even know how to register as library members. Many found it difficult to retrieve the information and used books more (Moyane, Dube & Hoskins, 2015; Wahoush & Banfield, 2013).

Many institutions face a problem where students rely heavily on a librarian for assistance even after receiving information literacy skills training (Maduako, 2013: 3; Thomas, 2013: online). The situation also prevails at the SMU library.

This study therefore addressed the following research question:

*To what extent does the information literacy skills training offered at the Sefako Makgatho Health Sciences University (SMU) Library affect the students' attitude to information literacy training and using (use of) information retrieval systems?*

Based on the research question, the following sub-questions were addressed:

#### **Sub-question to answer from the study site:**

- What is the scope of information literacy training at SMU Library with regard to information retrieval systems?

#### **Sub-questions to answer from the literature review:**

- How can the impact of information literacy training be assessed with special reference to attitude?
- What has been reported on attitudes to information literacy training?

### Sub-questions to answer from the empirical component:

- How does the information literacy training at SMU library affect first year students' attitude towards information literacy and the use of information retrieval systems?
- Which factors influence the attitudes of students towards information literacy training and the use of information retrieval systems?

## 1.4 LITERATURE OVERVIEW

A literature overview is an important step in research. It aids researchers in obtaining historical background of a study and to uncover similar studies (Leedy & Ormrod, 2014: 51). It reveals topic-relevant information sources and introduces relevant terminology (Leedy, 1993: 87-88). It can also identify discussions of relevant theories and concepts supporting a study (Ridley, 2012: 24).

### 1.4.1 Information literacy and its assessment

According to Maggio and Kung (2014: 184) there are several reports on information literacy skills training and its assessment. These include articles that cover basic information literacy concepts, the understanding of information literacy, and perceptions of users towards information literacy training by authors such as Gross and Latham (2009), Harley (2001), Lloyd and Williamson (2008) and Tuominen, Savolainen and Talja (2005).

Brettle (2003: 3) undertook a systematic review to determine the effectiveness of information literacy skills training and to identify effective training methods. The findings were that users valued information literacy training and that their skills were improved. Users also encouraged librarians to do more research and to provide evidence of what works and what does not work.

A decade later more studies readdressed the topic across all levels of medical education as well, with a focus on instruments of, and approaches to, assessment (Knapp & Brower, 2014; Ivanitskaya *et al.*, 2012). It was found that information literacy training does improve information searching skills, such as the formulation of search strategies and the selection of databases (Maggio & Kung, 2014: 184).

Emmett and Emde (2007: 211) also substantiate that there is a huge body of literature on different methods for assessing information literacy skills training. A variety of assessment methods and instruments, such as tests and rubrics were reported as being useful (Emmett & Emde, 2007: 211; Yager, Salisbury & Kirkman: 2013; Trail & Hardley, 2010).

Schilling and Applegate (2012: 259) reviewed articles that address the use of assessment, instruments to assess information literacy skills, and the impact of information literacy training on student learning. The review sample included articles published between 2007 and 2012. Tests, portfolios and surveys were found to be reliable measuring tools for evaluating attitude and behaviour of users towards the use of library resources. The authors also compared various assessment methods and demonstrated how surveys, written tests, practical exercises and self-assessments can be utilised for this purpose.

Al Awadhi and Rehman (2012: 355) explored the usefulness of information literacy skills training. They found that training made a difference in the students' skills and capabilities needed to effectively utilise the library.

Maduako's (2013: 4) study of user education training programmes in two colleges of education in Nigeria in Abia State and Imo State is also noted because of its relation to the situation at SMU. The study focused on the structure and scope of user education programmes and the impact on the usage of library resources and services. The students' ignorance and lack of interest in the use of resources were noticed.

#### **1.4.2 Evaluation of the information literacy skills of first year students**

Research reports on the evaluation of information literacy skills of first years in general also hold value for this study.

Mittermeyer (2005: 203) gives a report on a study that was undertaken to explore the information literacy skills of new students in Quebec. It was a multi-institutional study involving 15 higher education institutions. The researchers posted a pre-test questionnaire to students before the start date of their course. Thirion and Pochet (2009) reported on lessons learned from an evaluation of information literacy in students entering higher education in the French speaking community of Belgium. Baro, Seimode and Godfrey (2013) reported on a study entitled, *Information literacy programmes in university libraries: a case study*, which compared six universities' information literacy programmes. They found that information literacy skills are very important although students in developing countries still lacked the skills.

More sources on evaluation of the information literacy skills of first year students with the inclusion of the abovementioned studies are reviewed in Chapter 2.

#### **1.4.3 Assessment of students' attitudes towards information literacy training**

Much of previous research assessing information literacy skills of first year students was undertaken for various reasons, including identifying and addressing gaps or weaknesses via information literacy training

(Conway, 2011; Hulett *et al.*, 2013; Mittermeyer, 2005; Thirion & Pochet, 2009). One other type of assessment that can still be investigated further is assessment of the reaction of students towards training – thus the impact of information literacy training on attitude (Grassian & Kaplowitz, 2009).

Hartmann (2001) undertook a study entitled, *Understandings of information literacy: the perceptions of first year undergraduate students at the University of Ballarat*, in which he created two focus groups investigating students' perceptions on the information literacy skills that they would require.

Another study that considered students' attitude to information literacy skills is *Developing health information literacy: a needs analysis from the perspective of preprofessional health students* by Ivanitskaya *et al.* (2012). The study found that students intend to develop their library, Internet and information evaluation skills.

Al Awadhi and Rehman (2012: 355) undertook a survey to inquire into students' and faculty's perceptions on the scope of the information literacy course and the benefits and skills gained from the course.

Overall, there is less literature on the assessment of attitude compared to literature on the assessment of information literacy skills, which points to a gap that was addressed by this study reported here. The gap was also noted in earlier work by Hartmann (2001: 111).

## 1.5 SIGNIFICANCE OF THE STUDY

The purpose of the study was to:

- Offer SMU's 2015 first year students and the librarian responsible for information literacy skills training an opportunity to express their perceptions and feelings about the SMU library's information literacy skills training programme and the use of information retrieval systems
- identify possible gaps in the SMU library's information literacy skills training, and aspects of the training that influence the attitudes of students positively
- determine barriers that students experience when independently and effectively utilising library services and systems.

The findings of this study can be used to enhance or redesign the SMU library information literacy skills training services for undergraduate students to align with international standards for information literacy with specific reference to impact on attitude. Recommendations can also be made for libraries in similar contexts, e.g., developing countries.

## **1.6 LIMITATION OF THE STUDY**

Leedy (1993: 73) states that limitations disclose what the researcher intends to do and what they do not intend to do. This study will only target 2015 undergraduate students enrolled with SMU, and specifically first year students.

The findings cannot be generalised for students on other levels of study as they were not included in the sample. The findings might, however, be used to make suggestions for further projects for the study site library and for other academic libraries in South Africa.

## **1.7 RESEARCH DESIGN**

A research design is a plan, blue print or “strategy for answering the questions or testing the hypotheses that stimulated the research in the first place” (Pinsonneault & Kraemer, 1993: 81). Walliman (2006: 42) states that it provides a framework for data collection and analysis and also indicates methods that will be used.

### **1.7.1 Research approach**

There are two main research approaches, namely, qualitative and quantitative (Punch, 2005: 234). A quantitative research approach refers to empirical research where data is presented in numbers (Punch, 2005: 3; Walliman, 2006: 54). Data is analysed using statistical approaches. A qualitative research approach, on the other hand, deals with details about describing and explaining processes, feelings, experiences and perceptions (Walliman, 2006: 55).

For this study, a mixed methods approach was used. It involves combining qualitative and quantitative research methods, data and techniques for data analysis (Teddlie & Yu, 2007: 77). The quantitative approach was based on descriptive statistics.

### **1.7.2 Research methods**

Oates (2006: 35) identifies six research methods. These methods are surveys, design and creation, experiments, case studies, action research and ethnographic studies.

A case study method was chosen for this study. A case study is defined by Leedy and Ormrod (2014: 102) as “a type of qualitative research in which in-depth data are gathered relative to an individual, programme, or event for the purpose of learning more about an unknown or poorly understood situation”.



### **1.7.3 Population and sampling**

A population is the total number of objects that the researcher wishes to focus on (Sapsford, 2007: 6), whilst a sample refers to a subset of that population (Sapsford, 2007: 7). A sampling technique is used when it is impossible and impractical to include the whole population (Pickard, 2013: 59).

This study used a purposive sample (i.e. non-probability sampling) also known as a deliberate sample. It is based on a deliberate selection of particular units of the whole population to constitute an ease of access sample that represents the whole population (Kothari, 2004: 15). The selection was done with a definite purpose and specific group of participants in mind.

#### *1.7.3.1 Study site*

The study took place at the Sefako Makgatho Health Sciences University (SMU) library.

#### *1.7.3.2 Target group*

Sefako Makgatho Health Sciences University has only one librarian responsible for information literacy skills training for undergraduate students. He was interviewed with regard to the scope of the training and observed students' attitudes.

The rest of the study population was first year students enrolled at the Sefako Makgatho Health Sciences University in 2015. There are four schools namely, School of Medicine, School of Health Care Sciences, School of Pathology and Pre-Clinical Sciences and the School of Oral Health Sciences. The confirmed final total number for 2015 enrolled first year students was requested from the Administration Department through the office of the Registrar but no response was received. The researcher initially targeted at least one degree programme with the largest number of students in each of the schools because the numbers were low; thus the Bachelor of Medicine and Bachelor of Surgery (MBChB – 200 students), Bachelor of Science (BSc – 180 students), Bachelor of Dental Surgery (BDS) – 41 students) and for the School of Health Sciences, the Bachelor of Pharmacy (BPharm – 30 students) and Bachelor of Nursing Sciences and Arts (BCur – 30 students) because the numbers were low. Later, due to unforeseen circumstances the target and questionnaire distribution process were changed. More about this will be outlined in Chapter 3 and 4. All the schools were represented in the study and a variety of teaching subjects covered.

### **1.7.4 Data collection methods**

Data was collected using a questionnaire (Appendix F), focus groups (Appendix H) and an individual interview (Appendix G). This process took place between the 14<sup>th</sup> October and the 06<sup>th</sup> November 2015.

Questionnaires were handed out to students when visiting the library, at the sports complex after exam sessions, and by and with the help of class representatives at the Drie Lilies flats and South Point flats where students reside. Appointments were made before visiting.

In Chapter 4 a detailed report on the data collection methods used for this study is presented.

#### *1.7.4.1 Questionnaires*

First year students were requested to participate by responding to a printed self-administered questionnaire. A questionnaire is a predefined set of questions gathered in a pre-arranged order. With questionnaires, respondents are requested to answer questions to provide the researcher with data that can be scrutinised and interpreted (Oates, 2006: 36).

Initially, it was planned that an email would be sent to the directors of the four schools to request permission to address the students, hand out the questionnaires and have them completed in class. Unfortunately, no data could be collected until the ethical clearance and permission to use SMU students were granted. The ethical clearance letter was received from the Research Committee of the Department of Information Science at the University of Pretoria on behalf of the University of Pretoria, Faculty of Engineering, the Built Environment and Information Technology (EBIT), Faculty Committee for Research Ethics and Integrity (letter attached as Appendix A). The researcher also had to apply for permission to do the study from the Sefako Makgatho Health Sciences University Research Committee (SMUREC). The permission letter (attached as Appendix B) was only received on the 14<sup>th</sup> October 2015 and by then classes had already ceased and undergraduate students had already started with their exams making them difficult to reach. It was also not possible to hand out questionnaires and have them completed and returned immediately as some students were rushing to buses, library, and residences or elsewhere so they took the questionnaires with them. Of 394 questionnaires that were distributed only 225 were returned of which 219 were used for data analysis. The remaining 6 were incomplete. The collected data were then analysed and interpreted to respond to the research question and sub-questions.

Students were asked to sign a consent form before completing the questionnaires. The informed consent form for questionnaires is attached as Appendix D.

#### *1.7.4.2 Focus groups*

A focus group is defined by Morgan (1996: 130) as “a research technique that collects data through group interaction on a topic determined by the researcher”. Participants share a common characteristic (De Vos, 2005: 298). They share perceptions, experiences, viewpoints, concerns and comments on the topic being

researched (De Vos, 2005: 299; Walliman, 2006: 98). The researcher acts as a mediator (Pickard, 2013: 243). A focus group interview is less comprehensive than a one-on-one interview in terms of collecting individual input (Rasmussen, Ostergaard & Beckmann, 2006: 105-106).

Four focus group interviews were held with participants representing all of the four schools/programmes. This allowed for a cross-program focus. Participants were purposively invited; voluntary participation was encouraged. The focus group interviews were digitally recorded with signed informed consent from participants (informed consent attached as Appendix E). On the form, participants were asked for permission for the researcher to record the interview. They all agreed to be recorded.

#### *1.7.4.3 Interview*

Turner (2010: 754) points out that interview protocol is one of the more popular areas of interest in qualitative research design. Interviews allow participants to share in-depth information relating to their experiences and viewpoints on a topic under study.

SMU library has only one librarian responsible for information literacy skills training for undergraduate students. The librarian was interviewed with regard to the scope of training and students' attitudes to information literacy training. The interviewee indicated on the informed consent form (Appendix E) that the conversation should not be recorded.

#### **1.7.5 Reliability and validity**

Validity is defined by Leedy and Ormrod (2014: 91) as "the extent to which an instrument measures what it is intended to measure". Reliability is "the consistency with which a measuring instrument yields a certain, consistent result when the entity being measured has not changed" (Leedy & Ormrod, 2014: 93).

Steps such as standardising the conditions and carefully designing directions for measurement with no variation from group to group, and triangulation of findings were taken to ensure the reliability and validity of data analysis and interpretation.

#### **1.7.6 Ethical issues**

Ethical issues refer to the effect of research on those involved in the research process (Walliman, 2006: 152). For purposes of the study the following were considered:

- Ethical clearance was obtained from the Research Committee of the Department of Information Science at the University of Pretoria on behalf of University of Pretoria Faculty of Engineering, the

Built Environment and Information Technology (EBIT), Faculty Committee for Research Ethics and Integrity (Appendix A).

- The researcher signed a research declaration form declaring that participants' confidentiality would be respected and data only made available to the researcher, supervisor and statistician (form attached as Appendix C).
- All participants had to sign a form of informed consent (Appendix D & E).
- Permission was also requested from the Sefako Makgatho Health Sciences University Research Committee (SMUREC) to conduct the research at SMU (Appendix B).
- Data collection through the questionnaire, focus groups interviews and an individual interview was initiated only after permission had been received from EBIT and SMUREC (Appendix F, G & H).
- The study was treated with strict confidentiality: no information was requested with regard to names, identity numbers, residential addresses and student numbers of participants. The results were not reported as per individual questionnaire completed but in aggregation and anonymously for the whole sample under study. Questionnaires were completed and then locked in the strictly controlled strong room in the library. Questionnaires and interview schedules are to be used for this study and no other purpose.

## 1.8 CLARIFICATION OF KEY CONCEPTS

It is important that key concepts are clarified since they can mean different things to different people. Good conceptualisation is an important factor to good data collection and good measurement (Ruane, 2005: 50). Therefore the following terms are explained:

### 1.8.1 Assessment

Assessment is defined as “the process of gathering and discussing information from multiple and diverse sources in order to develop a deep understanding of what students know, understand, and can do with their knowledge as a result of their educational experiences, the process culminates when assessment results are used to improve subsequent learning” (University of Connecticut, 2002: online). Assessment is seen as a key initiative to improve information literacy programmes and to promote accountability (Julien *et al.*, 2009; Mittermeyer, 2005; Schilling & Applegate, 2012).

### 1.8.2 Attitude

Attitude as defined in BusinessDictionary.Com (2015: online) is “a predisposition or tendency to respond positively or negatively towards certain ideas, objects, people or situations”. The tendency influence people's choices of action and reaction to challenges, incentives and rewards. Its major components are:

- Affective (emotions or feelings),
- Cognitive (belief or opinions held consciously),
- Conative (inclination for action), and
- Evaluative (positive or negative response to stimuli).

Students need to value and recognize the importance of information literacy skills for their studies and life. According to Noe (1986: 737) trainees' attitudes, interests, beliefs, and expectations of the training may lessen or increase the success of training. Therefore determining individual characteristics that influence the effectiveness of training is vital. Behaviour change and improved performance can be gained through participation in training programs.

### **1.8.3 Information literacy training**

Information literacy training is sometimes referred to as user education, library instruction, library orientation, and bibliographic instruction (Bhatti, 2012: 3; Bundy, 2002: 125; Moyane, Dube & Hoskins, 2015: 30). Although the different terms have been used interchangeably, it is clear that there are significant differences that have been overlooked (Moyane, Dube & Hoskins, 2015: 31). All of these terms are briefly clarified in sections 1.8.3 to 1.8.6. Orr, Appleton and Wallin (2001: 457) define information literacy as the "ability to locate, manage, critically evaluate, and use information for problem solving, research, decision making, and continued professional development".

According to the American Library Association (2000: 1), Hartmann (2001: 110) and Maughan (2001: 72) information literacy is "a set of abilities requiring individuals to recognise when information is needed and have the ability to locate, evaluate, and use effectively the needed information".

Information literacy is "an intellectual framework for identifying, finding, understanding, evaluating and using information" (Bhatti, 2012: 4; Eisenberg, 2010: 39). It focuses on awareness of one's information needs, knowledge of how to find and locate information, and the ability to comprehend, understand, assess and utilise information.

The definition "a set of abilities requiring individuals to recognise when information is needed and have the ability to locate, evaluate, and use effectively the needed information" by the American Library Association, which is one of the associations trusted by librarians for guidance on information literacy standards for higher education (Emmett & Emde, 2007: 211), will be used.

Information literacy training or user education instruction is given to users to help them to use the library better with the core aim being to teach, to impart knowledge, skills and attitudes (Moyane, Dube & Hoskins, 2015: 31). User education is explored in the next section.

#### **1.8.4 Library instruction**

According to Reitz (2004: online) library instruction consists of "instructional programs designed to teach library users how to locate the information they need quickly and effectively. [It] usually covers the library's system of organising materials, the structure of the literature of the field, research methodologies appropriate to the academic discipline, and specific resources and finding tools (library catalogue, indexes and abstracting services, bibliographic databases, etc.)".

#### **1.8.5 Library orientation**

Library orientation refers to a programme that is offered to first year students as an introduction to the library's resources, as well as information on study skills and academic integrity to help to make their first year experience successful (Thomas, 2013: online).

#### **1.8.6 User education**

User education is defined as "a process which involves a variety of activities designed to teach users about library services, facilities, building, information resources, and search strategies" (Maduako, 2013: 2). It provides users with basic knowledge to optimally utilise the library's information resources and services, to spread awareness about library resources and services and to teach students retrieval techniques. As mentioned earlier, it is often considered (also in this study) as belonging under the umbrella concept of information literacy (Bhatti, 2012: 3; Bundy, 2002: 125; Gross & Latham, 2009: 341).

According to Bundy (2004: 11) and Tuominen, Savolainen and Talja (2005: 332) information literacy is a "wider literacy continuum" or an umbrella concept or complex/broader literacy for library orientation, library instruction and user education. The same approach will be adopted in this study.

### **1.9 CHAPTER DIVISION**

**Chapter 1:** In this chapter the researcher outlines the scope of the study including introduction, problem statement and objectives, a description of the research design, data generation techniques, data analysis methods, etc.

**Chapter 2:** Literature that is relevant to the research topic and sub-themes, both printed and electronic, will be reviewed as point of departure to exploring the topic and to identify a research framework. This

includes literature on information literacy and its assessment and literature on training in the use of information retrieval systems.

**Chapter 3:** This chapter is about the research design and methodology that were followed in the study and also describes the data-gathering and data-analysis techniques and instruments that were used.

**Chapter 4:** This chapter will present, discuss and analyse data generated from the returned questionnaires, and other means of data collection.

**Chapter 5:** Findings and answers to the research sub-questions and overall research question will be summarised, recommendations will be made and suggestions for further research will be included.

## **1.10 CONCLUSION**

This chapter provided background of the study including introduction, problem statement and sub-problems to be addressed, objectives of the study, the research design that was employed, data collection methods, reliability and validity, ethical issues and defined the terms that will be referred to most in the study. The next chapter will review literature published on the topic under study.

## CHAPTER 2: LITERATURE ANALYSIS

### 2.1 INTRODUCTION

This chapter critically analyses a selection of literature that can support an understanding of previous studies on the research topic (Denscombe, 2002: 50; Denscombe, 2010: 31; Laws *et al.*, 2013: 101; Pickard, 2007: 26): in this case the topic being *An assessment of the attitudes of undergraduate students towards information literacy training: Sefako Makgatho Health Sciences University (SMU) library as case study*.

In a literature analysis, identified items are recorded and appraised in terms of their contribution to the topic (Pickard, 2007: 26). The analysis is also used to create a theoretical framework for research, to identify gaps in published literature and to predict the contribution of pending research to the existing research (Denscombe, 2002: 51; Pickard, 2007: 26). It guides also against duplication of work and justifies choice of focus (Laws *et al.*, 2013: 101).

A literature analysis promotes awareness of existing research data and data gathering methods that were used by other researchers, as well as the findings, ideas and theories they have formulated (Davies, 2007: 212; Denscombe, 2010: 33; Laws *et al.*, 2013: 101).

A literature analysis can also inform the research methodology and influence the choices of data collection methods, e.g., questions in a questionnaire or interview schedule (Denscombe, 2002: 51; Pickard, 2007: 34). This implies that the views can be useful in justifying new research topics and questions and in designing research frameworks (Denscombe, 2002: 51).

This chapter included an analysis of literature on the evaluation of information skills, the evaluation of the information literacy skills of undergraduate medical students, the evaluation of information literacy skills of first year students, and the assessment of the impact of information literacy training with regard to the students' understanding, insights, perceptions and attitudes towards different aspects of an information literacy course.

### 2.2 SEARCH STRATEGY

The literature analysed includes key journals, such as the *Journal of Librarianship and Information Science (JOLIS)*, *International Federation of Library Associations (IFLA) Journal*, *Library Trends*, *International Journal of Library and Information Science (IJLIS)*, *The Library Quarterly*, *The Journal of Academic Librarianship*, *Library Philosophy and Practice*, *Emerald/Insight* and the *South African Journal of Libraries and Information*



*Science (SAJLIS)*. Amongst the databases that were searched are the Education Resources Information Center (ERIC), Library and Information Science Abstracts (LISA) and Library and Information Science & Technology Abstracts (LISTA).

For articles on assessment of information literacy training for medical library or students, searches were done using keywords on *Medline Plus*, *Journal of the Medical Library Association*, *Health Information & Libraries Journal* and *Medical Reference Services Quarterly*.

Google Scholar and the University of Pretoria Library and Information Services and Sefako Makgatho Health Sciences University library's Web PAC (Catalogue) were also used to search for additional sources relevant to the study. Journal searches were limited to articles published from 2010 to 2015.

For online sources, searches were done using the following keywords:

- information literacy training {and} assessment {and} undergraduate students
- information literacy training {and} attitudes/perceptions {and} assessment {and} first year students
- information literacy training {and} attitudes/perceptions {and} assessment {and} undergraduate students
- information literacy training {and} assessment {and} academic library
- information literacy standards

The results were scanned and items selected based on their coverage as indicated in their abstracts and on their relevance to the issues under review. A snowballing technique was further used, whereby additional relevant articles that addressed the issue were selected by scanning the lists of references or bibliographies of articles and books that had already been chosen from the first searching attempt. The snowball technique led to the discovery of articles in more library-and-information-related journals.

### **2.3 ASSESSMENT OF IMPACT**

The importance of assessing information literacy skills in academic contexts is well argued in literature by various authors (Grassian & Kaplowitz, 2009; Iannuzzi, 2000; Neely, 2006; Schilling & Applegate, 2012). Their arguments stress that information literacy skills assessment has been a concern for a long time; accreditors need proof of students' learning outcomes and the benefits of library educational programs.

Information literacy skills assessment can be divided into four levels: reaction, which is about what students think about the training they have received; learning assessment, which enquires about testing the knowledge gained from the session; behaviour assessment, which assesses whether the students' ways

of doing things have changed as a result of the training they have received; and lastly, the results stage of assessment that measures the effect of the training on the students' life (Grassian & Kaplowitz, 2009: 202).

Impact assessment includes assessment of skills (e.g. through tests), assessment of assignments to see if there has been a difference in students' performance following the training and also assessment through following frameworks (American Libraries Association, 2000; Bundy, 2004; Emmett & Emde, 2007). A successful information literacy training programme should improve students' search skills and understanding and change their attitudes towards effective and efficient use of information resources (Julien *et al.*, 2009). Their tests, assignments and course grades should also be boosted by the training (Julien *et al.*, 2009).

### **2.3.1 Assessment standards**

According to Sproles, Detmering and Johnson (2013: 407), many authors focusing on information literacy have affirmed in the literature that standards have been used to assess information literacy skills, to review training programs and to assess and restructure the training scope to align it with the outcomes.

The essence of standards has been well documented by the American Library Association (2000), Association of Research and College Libraries (1996-2016), Conway (2011), Esterhuizen and Kuhn (2010), Iannuzzi (2000), Oakleaf (2014) and SCONUL Working Group on Information Literacy (1999). The authors reported on standards that have been developed to guide the delivery and assessment of information literacy in academic libraries. For decades, information literacy skills training was guided by standards such as the Information Literacy Competency Standards for Higher Education, the United Kingdom (UK)'s 1999 Society of College, National and University Libraries (SCONUL), the Committee for Higher Education Librarians of South Africa (CHELSA) draft guidelines on information literacy, and others.

The Association of College and Research Libraries (ACRL) Information Literacy Competency (ILC) Standards for Higher Education Task Force drafted a new framework known as the Framework for Higher Information Literacy in Higher Education, to replace the old framework (American Library Association, Association of Research and College Libraries (1996-2016); Neely, 2006: 1).

The 1999 SCONUL Seven Pillars of Information Literacy Framework, the core model for higher education in the UK accommodates the library's shift from its traditional role of collection building and knowledge organisation to that of locating, accessing, comparing, evaluating, organising, applying, communicating, creating and sharing new information and knowledge.

CHELSEA was mandated to pursue a South African information literacy framework for its 23 member universities. The mandate was out of concern that other countries, for instance, the UK and USA had developed their own frameworks. Esterhuizen and Kuhn's (2010) article, *CHELSEA draft guidelines on information literacy: paving the way to a South African national framework?*, gives feedback on the process that resulted in the compilation of the draft national information literacy skills training guidelines for university libraries in South Africa. The CHELSA framework is aimed at coordinating and developing a common core curriculum for information literacy skills training in South African universities. The draft provides an opportunity for advanced future developments in the information literacy curriculum. Surveys were undertaken to encourage consultations and sharing of ideas on the status of information literacy in South Africa. It was found that even though there is a wide range of information literacy practices and objectives within university libraries there is still an agreement on core competencies that have to be included in information literacy skills training. The CHELSA guidelines are relevant for this study because the draft focuses on basic information literacy skills training and university libraries in South Africa.

Standards outline competencies, skills and outcomes needed by students to become information literate (Emmett & Emde, 2007: 216; Neely, 2006: 1) and that need to be addressed by librarians to design assessment tools and to improve information literacy skills training (Conway, 2011; Dao *et al.*, 2011; Emmett & Emde, 2007; Iannuzzi, 2000; Secker & Coonan, 2013: 81; SCONUL Working Group on Information Literacy, 1999). They can also be used and combined with students' perceptions of information literacy skills training (Oakleaf, 2014).

### **2.3.2 Assessment tools**

A wide variety of assessment tools and types are noted in the literature on information literacy. These include tests, quizzes, interviews, focus groups, etc. (Baro, Seimode & Godfrey, 2013; Grassian & Kaplowitz, 2009; Issa, Blessing & Daura, 2009; Neely, 2006).

The decision as to which type of assessment to select depends on the purpose of the training (Neely, 2006: 155). This statement is supported by Grassian and Kaplowitz (2009: 209) who explain that tools should be selected for their relevance to the outcomes being measured and the questions being asked. Neely (2006: 155) gives an example with pre- and post-tests and says they can be used in surveys on determining information literacy skills gaps and current skills. According to Grassian and Kaplowitz (2009: 209) assessments can be done in many ways: forced-choice assessments of which the designer determines responses in advance; open-ended assessments, discussions, in class assessments, practical tests; and realistic assessments, which are based on reality and investigation of practices and products.

The development or selection of appropriate tools for assessing information literacy skills should be clarified with stakeholders and strong points and weaknesses should be noted (Neely, 2006: 153). For the purpose of this study, stakeholders refer to librarians, students, staff members and faculties.

Assessment tools as reported in Baro, Seimode and Godfrey (2013), Conway (2011), Grassian and Kaplowitz (2009), Hartmann (2001), Iannuzzi (2000), Issa, Blessing and Daura (2009) and Neely (2006) include surveys, questionnaires, self-assessment tests, short answers, essays, rubrics, portfolios, quizzes, interviews, focus groups, class tests on the exercises, worksheets, class activities, practical tests and feedback opportunities.

Neely (2006: 158) reported on research conducted at the University of Maryland, Baltimore County (UMBC) in which more than seventy instruments which can be used for assessing information literacy skills of higher institutions students were identified and tested. The techniques included behavioural observation, students' portfolios and research journals. It was found that only a few tools were designed with the ACRL standards in mind and that some online assessment tools were unreliable and outdated.

In an investigation by Baro, Seimode and Godfrey (2013), collaborative class learning exercises, multiple choice questions, and peer-, and self-review exercises were used to assess students' literacy training outcomes. Other methods such as essays, short answers, and quizzes were left out for their complexity. The study compared information literacy practices in six universities in Nigeria, the United Kingdom and United States. It reported that students who study in developing countries lacked the necessary information literacy skills (Diep & Nahl, 2011; Issa, Blessing & Daura, 2009). The gap is assumed to have been caused by challenges such as lack of well-equipped school libraries and computer labs. Such findings can inform the execution and enhancement of information literacy skills programmes in developing countries.

Dao *et al.* (2011) used a web-based pre- and post-test for their survey. The assessment section enquired about the factors that contributed to students' level of information literacy, and it included the ethical use of information. Questions were clustered into search strategies, ethical issues and evaluating sources. Their study revealed that:

- the majority of students did not have the information literacy skills needed to meet academic challenges, they could not analyse and evaluate sources nor were they knowledgeable about information on the ethical use of information;

- information literacy skills learned were useful in many cases and students wished that they could have learned the skills when they started with their studies; and
- confident students had a more accurate picture of their information knowledge.

According to Neely (2006: 158), one can use tests to determine attitudes of users towards information literacy skills training. As observed from a study by Hartmann (2001), one can also choose to use focus groups. Depending on the purpose of the study interviews, questionnaires and other methods can be utilised. Hartmann (2001) used focus groups to study the perceptions of first year undergraduate students on information resources, the experience and skills they will require to access the resources and factors that may influence them to change their perceptions.

## **2.4 EVALUATION OF INFORMATION LITERACY SKILLS**

The review of the literature in Julien *et al.* (2009) and Rader (2002) indicates that the majority of the publications address information literacy in higher education. There is also a considerable body of literature on trends in the literature on library instruction and information literacy with articles that deal with the evaluation of information literacy skills say Hartmann (2001), Johnson, Sproles, Detmering and English (2012), Mittermeyer (2005) and Sproles, Detmering and Johnson (2013). According to Rader (2002: 244), there has been much focus in the last decade on the evaluation of student's learning outcomes and the way they acquire information skills, which will enable them to perform productively (Rader, 2002: 244).

### **2.4.1 Evaluation of the information literacy skills of medical undergraduate students**

For this study, reports on the information literacy skills of undergraduate medical students are especially important. Reports from developed countries with strong or well developed information literacy programmes are also noted.

Knapp and Brower (2014) report on the implications of the ACRL framework for information literacy in higher education for health sciences librarianship. The authors claim that health sciences librarians have been historically weak in their adoption of the previous ACRL standards, having not endorsed the ACRL standards. Individual librarians should closely examine the framework and consider its value as a toolkit for improving information literacy skills training for their students. The standards will offer librarians an opportunity to re-examine information literacy skills training, and to develop learning objectives specific to their discipline and curriculum. It is recommended that members of the Medical Library Association (MLA) with an interest in information literacy training, should form a task force to fully examine the finalisation of the draft ACRL ICL framework, adopt the framework and find ways to make the framework useful in training of health sciences students.

Lalor, Clarke and Sheaf (2012) evaluated the effectiveness of information literacy skills training to improve the ability of 108 undergraduate midwives in accessing evidence for practice. The focus was on the results drawn from an examination undertaken before and after their training sessions in the first, second and third years of their undergraduate programme. The 16 hours information literacy training focused on skills required to utilise electronic resources effectively. The study was undertaken from 2008 to 2011. The pre- and post-training results were analysed and compared with results of the students in subsequent years. Data of the first and second years showed an improvement in the ability to search and less improvement was noted in the third year.

Moreton and Conklin (2015)'s *Closing the loop on nursing library instruction: using student performance to improve outcomes* is an analysis of effectiveness of the changes and improvements that were implemented using results of a project where two librarians analysed nursing students' performance using an information literacy skills assignment. The purpose of the project was to determine ways to change the training to better assist the students in comprehending the skills. Major areas of difficulty were identified, which included search techniques. The librarians used the assessment data to revise the training and the assignment. The authors recommend that the evidence-based training cycle of teaching, assessment, and revision should be repeated frequently to keep the training and assignment up to date and relevant.

McClurg *et al.* (2015) report on a study on *evaluating effectiveness of small group information literacy instruction for Undergraduate Medical Education (UME) students using a pre- and post-survey study design*. The three-year programme aimed at determining whether librarian-led small group information literacy training, closely integrated with course content and faculty participation, was an effective means to convey Evidence-Based Medicine (EBM) literacy skills. Five, 15-minute EBM information literacy training sessions were delivered by three librarians to 12 practicing physician-led small groups of 15 students. An online survey was completed by 160 participants before and after the sessions and data analysed through simple descriptive statistics. One hundred and forty-four responded to the pre-survey, whilst only 112 completed the post-survey. The programme was shown to have had a positive impact on student's evidence-based information literacy skills and they had an opportunity to consult a librarian and their confidence in information searching increased. It is recommended that health sciences librarians need to continuously reassess delivery of information literacy training, maximise learner engagement and encourage information literacy training as a lifelong learning endeavour.

According to Janke, Pesut and Erbacker (2012)'s report on promoting information literacy through collaborative service learning in an undergraduate research course, information literacy is an important foundation for evidence-based nursing practice. The report describes a service learning project designed to

teach information literacy and to enhance students' appreciation of the role of evidence in nursing practice. The course is offered as a third-year research course. A nursing instructor and a librarian guide groups of students to answer question posed by practice-based partners. The project teaches students essential skills of refining questions, identifying search strategies, screening essential information from a study and reference management. Students indicated that they learned important skills for their future practice and recommended further collaboration between the faculty and librarians.

#### **2.4.2 Evaluation of the information literacy skills of first year students**

Research reports on the evaluation of information literacy skills of first years in general also hold value for this study.

Mittermeyer (2005) investigated how information-literate students are when they start with their undergraduate studies. The study involved 15 universities in Quebec. Questionnaires were mailed by post to 5 380 students and 3 000 responded. It was found that most students had limited knowledge on information searching processes. The findings will guide librarians to tailor the services to meet relevant student needs and to gather data to support recommendations for the integration of the course into the curriculum.

Issa, Blessing and Daura (2009) reported on a study that investigated the effect of information literacy skills on the use of e-library resources among students of the University of Ilorin, Kwara State, Nigeria. Of the 415 students who are active users of the University of Ilorin library, 72 were sampled. Questionnaires were distributed to students that were found in the library at the time of data collection. Two library employees also formed part of the sample to collect relevant data that students might not have been knowledgeable about. It was found that, although the university had electronic resources, most students lacked the skills to access them. It was also found that information literacy skills had not yet taken a firm stand among students. At that time, there was no partnership between faculty members and librarians. This problem coupled with unavailability of good teaching aids was reported to affect skills acquisition. Looking on the bright side, students acknowledged that they acquired technological, investigative and critical thinking skills from the information literacy training.

Schiling and Applegate's (2012: 258) study on *Best methods for evaluating educational impact: a comparison of the efficacy of commonly used measures of library instruction* recommends that librarians should serve in faculty committees, recommend inclusion of information literacy in the curriculum and liaise with those responsible for accreditation to seek guidance on how the library can contribute with regard to identified issues.

Dao *et al.* (2011) assessed the baseline information literacy skills of first year students at Gordon Library at Worcester Polytechnic Institute. 165 students participated in the pilot study. The research was necessitated because high school graduates struggled academically in the first semester of college; they could not cope with difficult text, assignment writing and integration of sources. Most failed because they lacked the skills captured in the ACRL definition of information literacy. These skills are information finding and internet searching skills, evaluation skills, analysis and presentation of data and gathering evidence to support arguments. The study's results have already been presented under 2.2.2. The recommendations were useful and called for librarians to work in collaboration with faculties to ensure that all first year students respond to the questionnaire in subsequent years. The library should continue with first year assessment programs and also explore new methods of assessing information literacy outcomes. Overall, the test produced useful data which will be essential when improving the information literacy programme.

Conway (2011) in his study, *How prepared are students for postgraduate study?: a comparison of the information literacy skills of commencing undergraduate and postgraduate information studies students at Curtin University*, compared the information literacy skills of commencing undergraduate and postgraduate Information Studies students. An online multiple choice survey was used. Students had to complete it in the first few weeks of their study, and of the 147 students only 64 responded being an overall response rate of 44%. The reasons, though not investigated, could be that they were not willing to spend time on a questionnaire that bore no credits. A considerable number of both undergraduates and postgraduates displayed problems with basic information literacy skills, particularly in relation to the use of traditional library tools, such as library catalogues. One of the reasons identified for the differences in performance between postgraduate and undergraduate students that emerged, was confidence.

Yager, Salisbury and Kirkman (2013) studied the *Assessment of information literacy skills among first year students*. A diagnostic online quiz was used to assess 227 students' research skills in week one, and in week six; their application skills on assignment writing was assessed using a rubric. Participation was voluntary but encouraged. A matched sample of the results on these two forms of assessment was created to determine the relationship between quiz and rubric scores and used the quiz to identify students in need of additional support. The results were captured using programmed software. A small, but significant, positive correlation was found and it can be concluded that both the quizzes and the rubrics are useful forms of assessment.

Thirion and Pochet (2009) reported on an evaluation of lessons learned from an assessment of information literacy in students entering higher education in the French-speaking community of Belgium. The purpose of this study was to assess and describe the students' real level of information literacy at the beginning of



their studies, to identify their information literacy skills gaps and to allow trainers to adjust their training guided by the results, and to compare the results internationally with that of a study undertaken by Mittermeyer (2005) in Quebec (Canada). The questionnaire was based on a study similar to the Quebec study; it contained 20 questions categorised in five themes relating to information search steps. A random sample was done, which targeted students entering higher education institutions in the French-speaking community of Belgium for the first time in September 2007. Their poor results confirmed that it was imperative to offer information literacy training to students to help them to improve their performance in their studies. The results were lower than those of the Quebec students. Students generally used and trusted the internet for searches. They had basic knowledge of tools and resources, but could not employ useful tools such as Boolean logic operators, thesaurus and reference management tools.

## **2.5 ASSESSMENT OF STUDENTS' ATTITUDES TOWARDS INFORMATION LITERACY TRAINING**

According to Conway (2011), Hulett *et al.* (2013), Mittermeyer (2005) and Thirion and Pochet (2009), previous research assessing information literacy skills of first year students was undertaken for various reasons, including identifying and addressing gaps or weaknesses by means of information literacy training. One other type of assessment that can be investigated further is assessment of the reaction of students towards training. This was identified as one of the types/levels of assessment that should be given attention when assessing the impact of information literacy training (Grassian & Kaplowitz, 2009).

Scales and Lindsay (2005) did a qualitative assessment of the students of Washington State University's attitudes towards information literacy. The students were enrolled for online one-credit information literacy (General Education 300), which exposed them to information literacy training supported by ACRL information literacy standards. Skills were measured using the Critical Thinking Rubric and outcomes from the Information Literacy Competency Standards, which offered an effective assessment for students' assignments and also helped them to better understand expected quality of work. ATLAS/ti, (<http://www.atlasti.de/>) was used to analyse the text of the assignments of 76 respondents and to study their attitudes toward information literacy. Of the 76 students, 71% expressed that their knowledge of information literacy would develop continuously for the rest of their lives. 29 % indicated that what they know about information literacy is enough. Generally, it was found that attitudes towards information literacy are complex and varied but can still be measured and used to develop information literacy training further. Students were found to have distinct and identifiable attitudes toward information literacy.

Hartmann (2001) undertook a study entitled, *Understandings of information literacy: the perceptions of first year undergraduate students at the University of Ballarat*, in which he created two focus groups on

students' perceptions on information literacy skills that they would require and experiences forming the basis of the requirements, and influences that might lead them to change their perspectives. The first group was organised in collaboration with lecturers, the second comprised of first year regular library users and the third group, consisting of third year students, was later introduced to compare changes in the perceptions of students on information literacy throughout the course of the studies.

The study was aimed at investigating how the first year students perceive information resources and skills needed to access them. The study was an attempt to close the gap created by lack of input from students which led to librarians assuming their abilities and requirements. The study revealed that:

- students have their own perception of information needs– their needs happen to be very different from the academic environment that they enter; and
- There is not much research on lack of engagement with information literacy programmes from the students' perspectives.

Jones, Evans and Magierowski (2007) from the School of Zoology worked in partnership with the science library to embed a vertically integrated information literacy curriculum to respond to the claim that embedding information literacy into the curriculum is the most effective means of supporting student learning. A longitudinal survey was used to assess students' information literacy skills through their three years of undergraduate degree. The survey instruments were designed to assess students' skills and attitudes against the Australian and New Zealand Information Literacy Framework (ANZIL) standards. Results indicated that, in general, students' skills increased significantly from year 1 to year 2, with very little increase from year 2 to year 3. These results demonstrate that embedding information literacy within the curriculum is an effective strategy for improving generic students' skills. The study also highlighted the value of the partnership between academics and librarians when designing, delivering and assessing an information literacy training curriculum that is vertically integrated across the years of an undergraduate study.

A study by Julien *et al.* (2009) on the outcomes of information literacy instruction for undergraduate business students targeted three Canadian business schools. The study used Lindauer's (2004) theoretical framework to study the status of information literacy skills training in those schools. Library staff, faculty lecturers and students were questioned about the students learning outcomes. Students claimed that they were more knowledgeable about available resources, and relevant, high quality and authoritative information available on databases. The skills would be useful for their career and their grades had been improved. Students had gained searching skills and hoped that this would improve the time used to

conduct searches and obtain relevant and desired results. Faculty members expressed concern about the level of students' evaluation skills. Students had gained confidence in using the resources efficiently.

Trail and Hardley (2010) assessed the integration of information literacy into a hybrid course using screen casting. The article reviewed the results of a case study investigating the use of screen casting as an information literacy skills training tool in a blended learning environment. A college librarian and a faculty member collaborated to assess the effectiveness of online tutorials used by undergraduate students in a course emphasising research skills. The course project was assessed using rubrics and the knowledge and skills were evaluated using tests. The results reported that students were able to apply information literacy skills in the development of literature review participation in tutorial instruction using screen casting. They could also identify and discuss information literacy related concepts. Ratings provided more information on outcomes than the online quiz.

Diep and Nahl's (2011) work on information literacy instruction reports a case study that explored the perceptions of academic stakeholders on the development and delivery of information literacy training programs in four Vietnamese university libraries. The study identified elements necessary to establishing information literacy credit courses in Vietnamese higher education. Three Survey Monkey online surveys were distributed to 537 individuals. 149 responded and only 133 surveys were fully completed. Data were collected through 23 face-to-face interviews and nine focus groups. Respondents reported that there was a misperception about the effect of information literacy on student learning outcomes, the degree of support received from academic stakeholders, the degree of faculty and e-librarian collaboration, and finally, availability of resources. The study recommends that academic librarians responsible for implementing information literacy in Vietnam should consider developing information literacy credit courses.

Chen (2011) investigated undergraduates' perceptions and use of the university libraries web portal; Academic libraries are concerned with the underutilisation of web portals. Literature on technology acceptance and information system success claims that user training can foster positive attitudes and facilitate usage. Chen's study attempted to close a gap regarding information literacy training on acceptance and use of web portals. It explored the impact of a semester-long credit-bearing information literacy course on undergraduate students' perceptions and use of the University at Albany Libraries' web portal. Data were collected in two rounds of surveys over an academic semester. The findings resonate with that of prior studies that an information literacy training course can shape user attitudes, foster favourable thinking, and encourage use; results noted that there had been an increase in user satisfaction after the training.

Ivanitskaya *et al.* (2012) studied *Developing health information literacy: a needs analysis from the perspective of preprofessional health students*. The study used a qualitative approach to identify 181 students' reflections on how to build health information literacy skills. The Research Readiness Self-Assessment instrument was used to measure students' health information literacy and individually tailored feedback was given indicating their scores and skill gaps. A post-assessment survey was undertaken to establish how they intended to close identified skills gaps. The analyses suggest that students intended to develop library, internet and information evaluation skills. 55% of students would use library staff members' assistance whilst 82% indicated that they planned to learn the skills by practicing on their own. 20% would ask for help from peers and 17% would ask their professors.

Al Awadhi and Rehman (2012: 355) undertook a survey to inquire about students' and faculty members' perceptions on the content of an information literacy course and the benefits and skills gained from the course. Two focus groups were formed. The students group comprised of eleven members, whilst the faculty members group had thirteen members. Students had to identify the benefits gained from the training, problems encountered when attending the course, their perception on information technology, and library, research and assignment writing skills they had gained from attending the course. The findings revealed that students were generally happy about the benefits they obtained from the course, some students developed an interest in attending computer courses after participation in the information literacy course. They also found out that the course would have been more helpful to them if they had done it in their first year (Al Awadhi & Rehman, 2012: 359).

Faculty members were questioned about the course content, its contribution and the administration of library resources and facilities. Unfortunately, the findings revealed that the course was outdated; the topics covered in the course were no longer relevant to the fast changing world. The two groups, however, agreed that the course was beneficial to users. They recommended that a computer course be arranged to address the imbalances caused by students' computer literacy levels, that the information literacy course be made compulsory in the first year of undergraduate study and that the course be revised occasionally to reflect changing needs, new types of resources and new technologies. Participants indicated that they were keen to assist with strategies to improve the course (Al Awadhi & Rehman, 2012: 355).

Wahoush and Banfield (2013) report on a study on *Information literacy during entry to practice: information-seeking behaviors in student nurses and recent nurse graduates*. The study addressed the literacy gap from the perspective of student nurses, recent nurse graduates, nurse leaders and library staff in two large hospital corporations in Hamilton, Ontario, Canada. It also attempted to describe their information-seeking behaviours within their clinical settings. Both cross-sectional surveys and key

informant interviews were done. Sixty-two student nurses and 18 recent nurse graduates completed online surveys to test their skills in accessing and using information resources within clinical practice. Nurse leaders and library staff were interviewed regarding availability of information resources. It was found that students made more use of printed sources, whilst recent nurse graduates met the Canadian Association of Schools of Nursing Performance Indicators related to information access for the entry to practice Nursing Informatics competencies.

Detlor *et al.* (2011) explored the factors that affect students' learning outcomes of information literacy skills training given at business schools. This study reported mainly on the factors affecting students' learning outcomes. With regard to behavioural outcomes, students' behaviours changed following information literacy training. The majority wanted to learn more about services. They had the confidence to ask for help from the librarian, they engaged with library workers, they asked sophisticated questions and used earlier resources for assignments, their grades had increased, they used authoritative sources, their search techniques and information finding skills had improved, they visited the library and made better use of resources. With regard to psychological outcomes, their attitudes and confidence towards use of resources had improved, they had also developed the desire to use online resources, the librarian's knowledge and the library itself, and lastly, with regard to benefit outcome, students were delighted with the time saved when searching for information, the better grades received when they had used information resources for their assignments, their improved understanding of resources including databases, their daily application of information literacy skills and more positive benefits from the information literacy skills training.

Detlor *et al.* (2012) report on a study undertaken to investigate undergraduate students' perceptions of information literacy instruction. The study site for his study was DeGroot School of Business at McMaster University in Ontario, Canada. His focus was on the importance of active learning. The population was 372 full time undergraduate students who took part in passive and active learning. The study revealed that active learning was more beneficial to students than passive learning and that one well planned learning session is sufficient to yield sustaining and effective learning outcomes (Detlor *et al.*, 2012: 147).

The need for investigating the topic under study is essential; the report will add to the body of knowledge that already exist on students' attitudes towards information literacy skills training. When analysing published literature for this study, it was noted that little has been published on the attitudes of students towards information literacy training, as Hartmann (2001: 111) and Julien *et al.* (2009) indicate that there is a lack of research investigating reasons for lack of engagement with information literacy training programs from the student perspective.

Hartmann (2001) goes further to indicate that the need for research into student perceptions was also suggested by a quantitative analysis of students who attended an information literacy skills training program at the University of Ballarat. It is therefore critical that research be undertaken to assess the attitudes of participants receiving the training in order to determine their level of satisfaction with the training provided. Their opinions on the content covered and the way the course is presented are important.

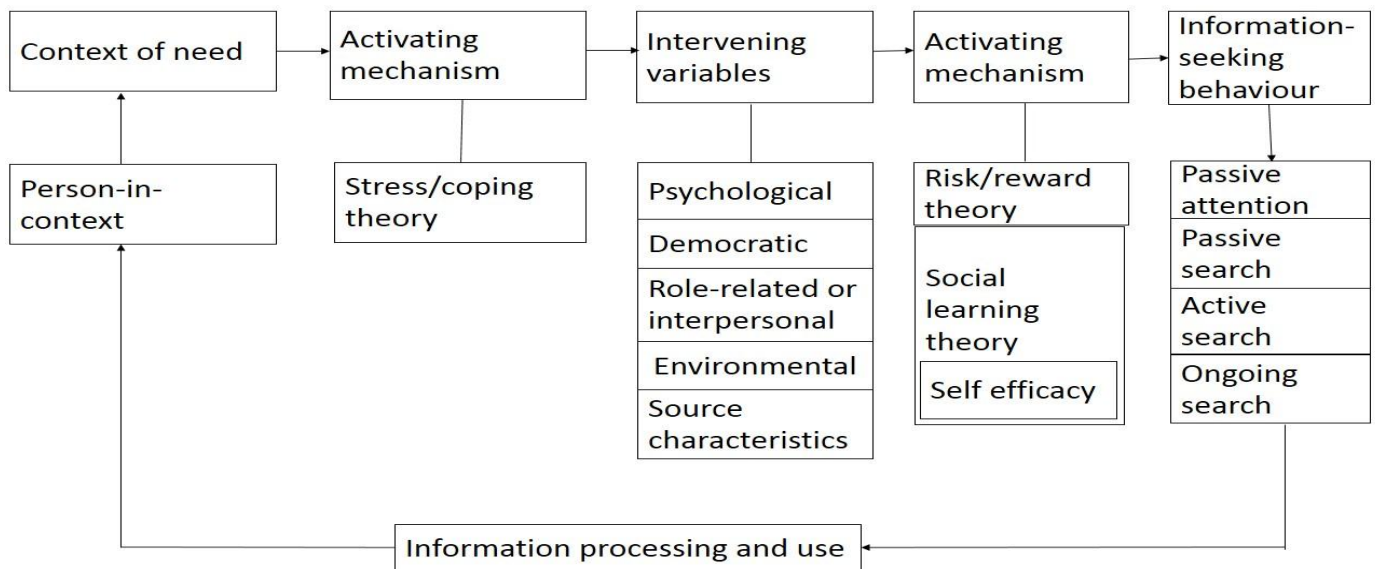
This research will therefore focus strongly on the attitudes of students towards information literacy training or their perceptions thereof.

## 2.6 INFORMATION BEHAVIOUR FRAMEWORK

Prior to focusing on the information behaviour framework that was used in this study, it is important that the term information behaviour is discussed. Information seeking behaviour or human information behaviour (LISWiki, 2015: online) refers to “the totality of human behaviour in relation to sources and channels of information, including both active and passive information seeking, and use” (Wilson, 2000: 49) or “how people need, search for, manage, give and use information in different contexts including everyday life” (LISWiki, 2015: online; Pettigrew, Fidel & Bruce, 2001: 44) or it is the way people search for and use information (Ahiauzu & Ani, 2015: 90). It is of interest to librarians striving to develop, amongst other things, services and organisational structures that facilitate access to information by users (Ahiauzu & Ani, 2015: 90).

Information behaviour studies follow varied approaches or models that focus on specific problems (LISWiki, 2015: online). A model is a “framework for thinking about a problem”. In general, models can be statements or diagrams describing an information-seeking activity, its causes and consequences, or even the relation among information-seeking behaviour stages” (Wilson, 1999: online). Examples of these frameworks are Ellis (1989), Kuhlthau (1991, 1993), Wilson (1981, 1996, 1997, 1999), and others (Wilson, 1999: online). Case (2012) recently reviewed developed models focusing on information seeking such as Ellis (1989), Järvelin (1995), Kuhlthau (2004) and Urquhart and Rowley (2007).

However, the current study is inspired by Wilson’s 1996 general model of information presented below in Figure 2.1. The model was chosen because its cycle evolves from the stage wherein an information need is identified to information utilisation, including intervening variables with an important influence on information behaviour, as well as psychology, demographics and self-efficacy.



**Figure 2.1: Wilsons (1996)'s information behaviour framework (Wilson, 1999: 257)**

In addition to information behaviour models such as Wilson (1996), an information literacy training framework by Lindauer (2004) was noted. This framework identifies three arenas, one of which is the psychological outcomes of information literacy training which deals with changes in attitudes and values towards library resources and information retrieval systems (Detlor *et al.*, 2012: 149). Julien *et al.* (2009) as well as Detlor *et al.* (2011, 2012) have reported on studies that used an abridged version of Lindauer (2004)'s framework. Figure 2.2 shows the three arenas of information literacy assessment whilst the abridged version is portrayed in Figure 2.3.

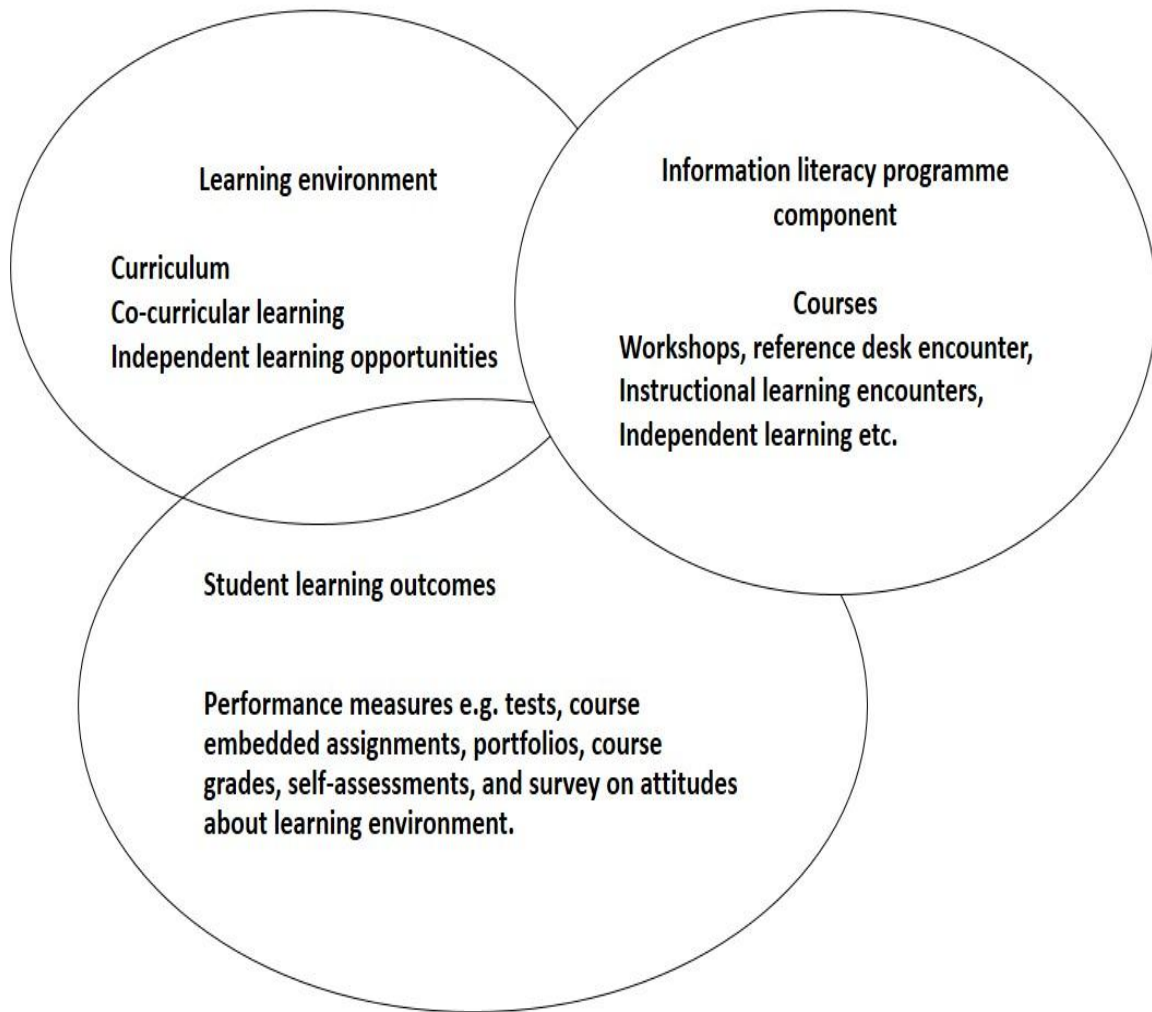


Figure 2.2: Lindauer’s three arenas of information literacy assessment (Lindauer, 2004: 123)

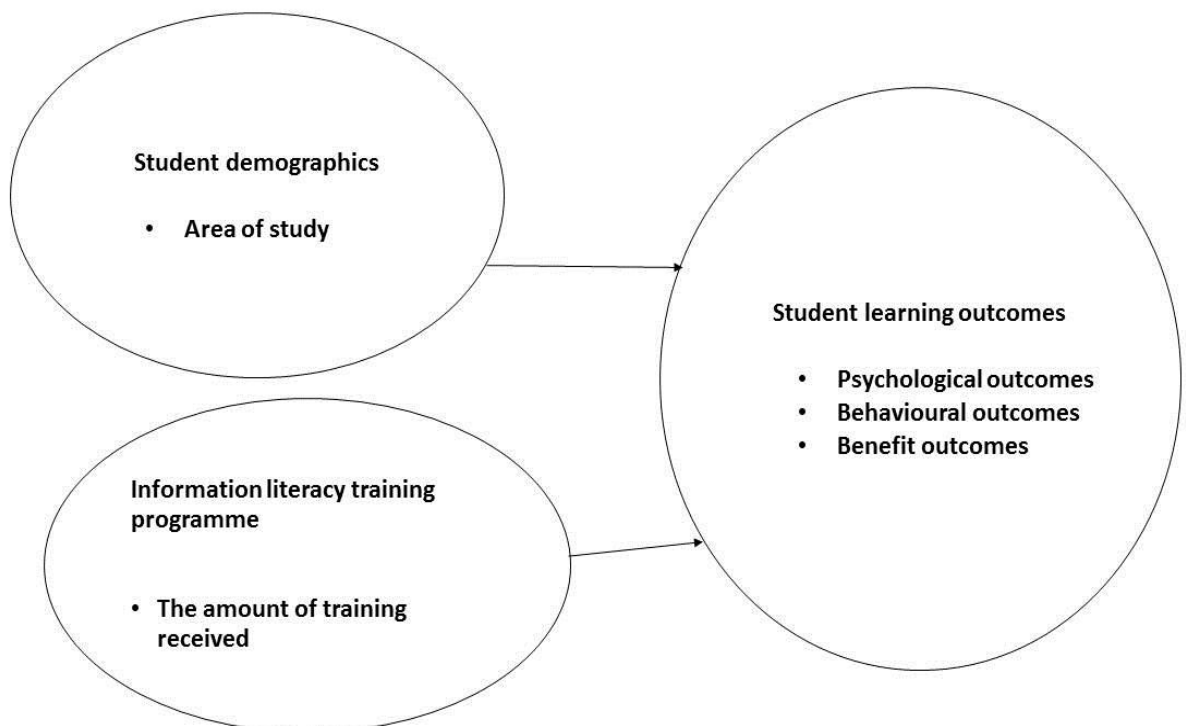
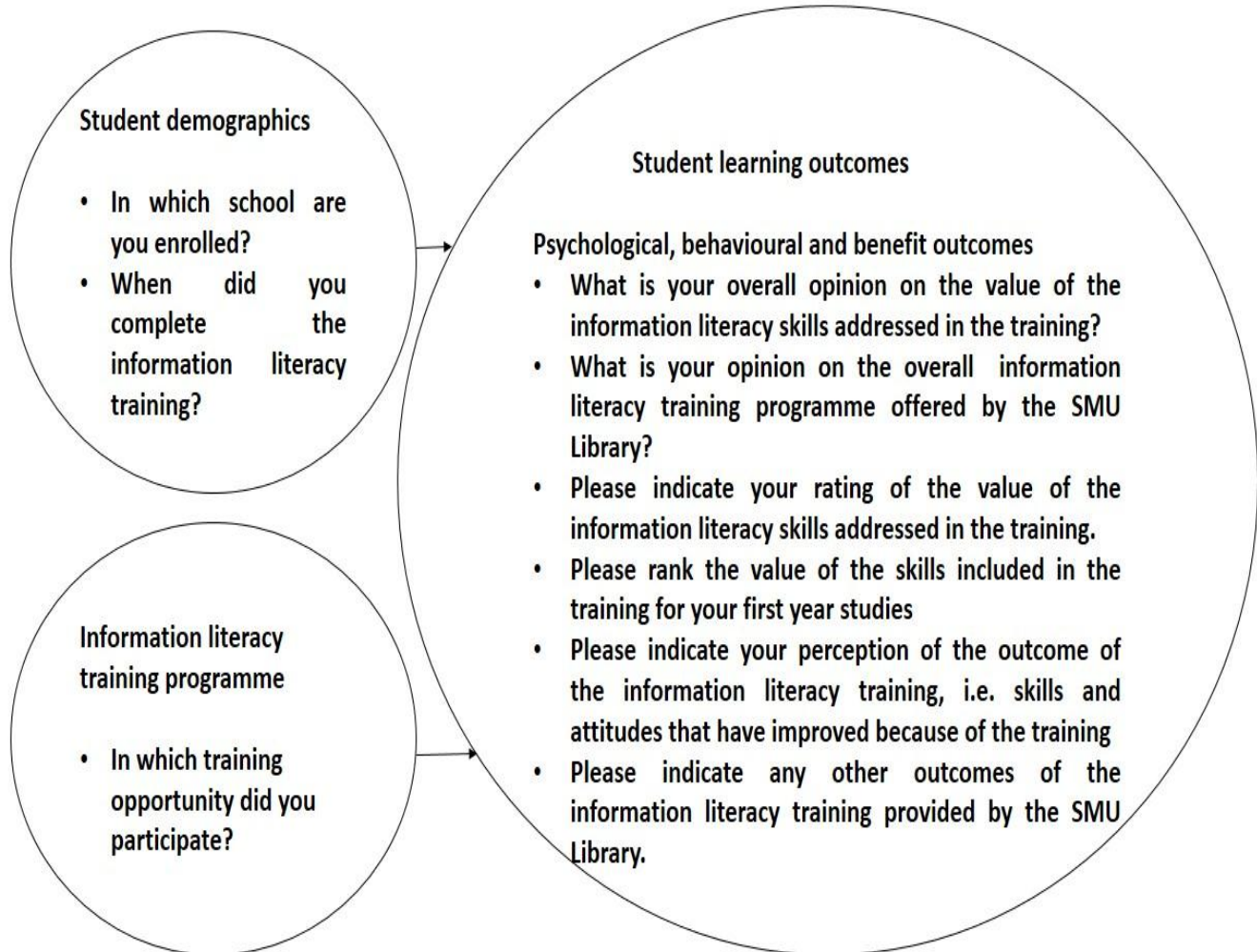


Figure 2.3: An abridged version of Lindauer’s model (Detlor *et al.*, 2012: 149)



Detlor *et al.* (2012) show that factors such as students' demographics, number of the training opportunities received, emotional aspects, behavioural outcomes and benefit outcomes can affect students' learning outcomes. The current study does not address curriculum, co-curriculum or independent learning issues relating to information literacy training. As a result, the framework was adjusted to address factors that apply to the current study. The framework that guided this study is reflected in Figure 2.4.



**Figure 2.4: The framework used for the current study adapted from Detlor *et al.* (2012)**

Both the adapted model from Detlor *et al.* (2012) and the Wilson (1996) model guided the empirical component and the development of instruments for data collection. Figure 2.4 reflects issues used for the data collection. From the Wilson model, the intervening variables (demographic, psychological and environmental issues), activating mechanism (self-efficacy) and information-seeking behaviour (active and ongoing search) were also used in this study.

## 2.7 CONCLUSION

In conclusion, the literature studied emphasises the need for, and importance of, assessing students' attitudes/reactions towards services rendered, including information literacy training. Students' perceptions about, and insight into, the information literacy skills training can guide the improvement and reshaping of the training programme and, to a certain extent, encourage usage of library and information systems and resources.

The research methodology for this study will be discussed in the next chapter.

## CHAPTER 3: RESEARCH METHODOLOGY

### 3.1 INTRODUCTION

This chapter outlines the research design, approach and methodology used in this study, and also provides information on the research site, research population, sample and target, the sampling type, data collection instruments (questionnaire, interview and focus groups), and ethical clearance. It also covers reliability and validity issues pertaining to the current study.

The research design ensures that the research is conducted in a scientific and valid manner. It covers the decisions on the tools and techniques by which the research problem is investigated (Singh, 2006: 89). In Figure 3.1 below is a presentation of typical research steps according to Leedy and Ormrod (2014: 6).

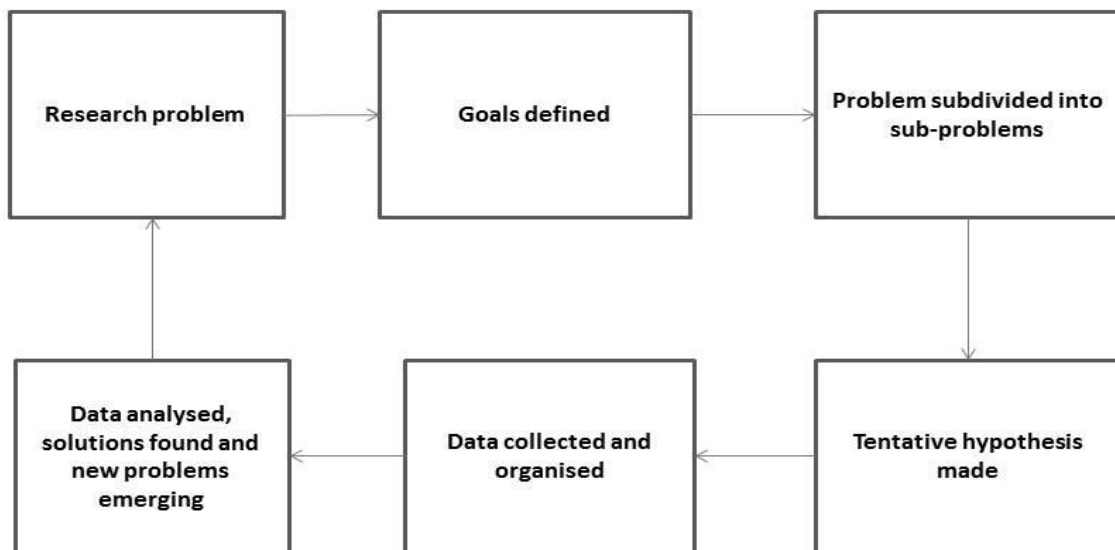


Figure 3.1: Typical research steps (Leedy & Ormrod, 2014: 6)

### 3.2 RESEARCH DESIGN

The research design is a plan, blue print or “strategy for answering the questions or testing the hypotheses that stimulated the research in the first place” (Pinsonneault & Kraemer, 1993: 81). Singh (2006: 86) refers to it as “a mapping strategy” or a statement of the object of inquiry and of collecting and analysing the evidences, as well as reporting of findings. Walliman (2006: 42) says it provides a framework for data

collection and analysis and also indicates methods that will be used. For this study, the choice on the research design is informed by the literature analysis of the related studies.

### **3.2.1 Research approaches and methodologies**

There are two main research techniques, namely qualitative and quantitative (Punch, 2005: 234). 'A quantitative research approach is followed for an empirical research where data are presented in numbers and analysed using statistical techniques' (Punch, 2005: 3; Walliman, 2006: 54).

A qualitative research approach, on the other hand, deals with details about describing and explaining processes, feelings, experiences and perceptions (Walliman, 2006: 55).

A third approach is known as the mixed methods approach. This approach involves combining qualitative and quantitative research methods, data and techniques for data analysis (Teddlie & Yu, 2007: 77). It is a method by which data are collected and analysed, findings integrated and inferences drawn applying both qualitative and quantitative methods in one study (Tashakkori & Creswell, 2007: 4).

Data collection involves gathering both numeric information and text information. The study starts with a much broader survey in order to generalise the results and in the second stage it focuses on detailed qualitative, open-ended interviews to collect details and opinions from participants (Creswell, 2013: 20).

Hartmann (2001) used qualitative research to gather the information on the perceptions of first year undergraduate students at the University of Ballarat's towards information literacy. Detlor *et al.* (2012) also investigated the perceptions of students of information literacy training, focusing on the importance of active learning using qualitative research. A mixed methods approach was employed for the current study.

With the mixed methods approach the researcher can collect and analyse both qualitative and quantitative data persuasively, data can be combined concurrently, and sequentially by building one on the other or embedding one in the other, can give priority to either one or both methods, can use the methods in a single study or in different phases of a project, frames the study in both philosophical and theoretical lenses, and combine procedures into specific research methods which will guide the study (Creswell & Clark, 2011: 5).

### 3.2.2 Research method

Oates (2006: 35) notes six research methods namely: surveys, design and creation, experiments, case studies, action research and ethnographic studies. De Vos (2005: 269) adds biographies, phenomenology, grounded theory, and ethnography. Researchers such as Chen (2011), Detlor *et al.* (2012), Ivanitskaya *et al.* (2012), and Wahoush and Banfield (2013) have previously used surveys to study the perceptions and attitudes of students towards information literacy training. They used questionnaires to collect data.

A case study is “an exploration of a process, activity, event, programme or individually bound within a specific time or setting” (De Vos, 2005: 273). It is a close, deep, clinical and cumulative study of a unit (Singh, 2006: 147). Pickard (2013: 101) defines it as “a method designed to study the particular within context, and has a specific purpose”, it can be qualitative or quantitative depending on what is being investigated and how the data about the case can be obtained. Leedy and Ormrod (2014: 143) call a case study, an ideographic research, in which an individual, programme or an event is studied in detail for a specified period. Yin (2003) says this method has the potential to deal with simple through to difficult situations. A case study has been chosen for this study. It answers “how” and “why” type of questions and even a novice researcher has a chance to gain valuable understanding of a case when using the case study method (Yin, 2003).

An instrumental case study aims at improving an understanding of social issues and lastly, the collective case study which deals with examining groups of studies, comparing concepts and studies and also extending or validating existing theories (De Vos, 2005: 273). Case studies can be categorised as explanatory, exploratory or descriptive and can be further differentiated between single, holistic and multiple-case studies (Yin, 2003).

Singh (2006: 149) also identified six types of case studies as being a group or community case study, casual comparative studies, activity analysis, content or document analysis, a follow-up study, and trend studies.

A follow-up case study investigates programme participants. After completing the programme, a study is undertaken to identify their opinions on the influence of the institutions and its programme. The findings then determine the appropriateness or inappropriateness of the programme. This type of study enables an institution to evaluate various aspects of its programme guided by actual findings (Singh, 2006: 149).

For purposes of this investigation a follow-up case study will be used to respond to the sub-questions on the empirical component as set out in Chapter 1, Section 1.3:

- How does the information literacy training at SMU library affect first year students' attitude towards information literacy and the use of information retrieval systems?
- Which factors influence the attitudes of students towards information literacy training and the use of information retrieval systems?

### 3.2.3 Research site

The study took place at the Sefako Makgatho Health Sciences University (SMU) library.

### 3.2.4 Research population, sampling and target group

A population is the total number of objects that the researcher wishes to focus on (Sapsford, 2007: 6), whilst a sample refers to a subset of that population (Sapsford, 2007: 7).

A sampling technique is used when it is impossible and impractical to include the whole population (Pickard, 2013: 59). A few units of study are selected from the many in order to do an empirical study (Pickard, 2013: 59).

The sample may be probable or non-probable. Probability sampling is based on random and non-probability or non-random selection. A sample can also be restricted or unrestricted (Kothari, 2004: 58).

A purposive sample or non-probability sampling, also known as a deliberate sample, involves a purposive or deliberate selection of particular units of the whole population to constitute an ease of access sample that represents the whole population (Kothari, 2004: 15).

With a purposive sample a researcher can use either a priori or snowball sampling. A priori sample establishes a framework before the sampling begins whilst the snowball technique takes an inductive approach and grows as the research progresses. A priori sample works best for first time qualitative researchers because it allows for strict boundaries to be set, creation of strict structures and also saves time (Pickard, 2013: 64). A priori sample was chosen as the best suited for this study since it allows for analysing, differentiating, and testing of assumptions about similarities and differences in groups under study (Flick, 2002: 63).

Initially, the researcher aimed at targeting at least one degree programme with the largest number of students in each school to maximise the response rate. In this case, Bachelor of Medicine and Bachelor of Surgery (MBCHB – estimated at 200 students), Bachelor of Science (BSC, ECP – estimated at 180 students), Bachelor of Dental Surgery (BDS – estimated at 41 students) and for the School of Health Sciences,

Bachelor of Pharmacy (B Pharm – estimated at 30 students) and Bachelor of Nursing Sciences and Arts (B Cur – estimated at 30 students) were combined because the number of students enrolled in each degree were too small. The total number of 2015 enrolled first year students was approximately 1080.

The university is comprised of four schools, namely, School of Medicine, School of Health Sciences, School of Pathology and Pre-Clinical Sciences and the School of Oral Health Sciences.

The target group included:

- One librarian responsible for information literacy skills training for undergraduate students at SMU. He was interviewed with regard to the scope of the training and his observation of students' attitudes, and
- 1080, 2015 First year students at SMU.

### **3.2.5 Data collection instruments**

For a case study research one can use multiple data sources to enhance data credibility (Patton, 1990; Yin, 2003). It can be done using methods such as document reviews, interviews, observations, focus groups, surveys, and consideration of critical incidents (Bloomberg & Volpe, 2012: 3; Oates, 2006: 36; Patton, 1990; Yin, 2003).

Researchers can collect and integrate quantitative survey data from various sources and then converge it in the analysis process as opposed to handling data from individual sources separately. Each piece of datum forms a piece of the puzzle and contributes to the researcher's understanding of the whole situation. The triangulation of data will add strength to the findings and promote a greater understanding of the case (Yin, 2003).

#### *3.2.5.1 Questionnaires*

A semi-structured questionnaire was drafted and students requested to respond to it. A questionnaire, according to Oates (2006: 36), is a predefined set of questions gathered in a pre-arranged order. Both open- and close-ended questions can be used. Open questions enable respondents to formulate their own answers and can thus reveal qualitative data (Oates, 2006: 222).

The researcher used a questionnaire to obtain factual data and opinions (Oates, 2006: 222) by using brief, relevant, unambiguous and specific questions (Oates, 2006: 221). First year students were requested to respond to a predefined set of questions. The duration for completing the questionnaire was estimated at 15 minutes. The collected data were analysed and interpreted to respond to the research questions. Analysis was done in the form of tables, figures and detailed information. The questionnaire responses

were analysed using LibreOffice Calc, a spreadsheet component of the LibreOffice software package (similar to Microsoft Excel). The findings will report descriptive statistics.

### *3.2.5.2 Focus groups*

Hartmann (2001) made use of two focus groups of first year students to measure their attitudes to information literacy training. Focus groups were designed to acquire and match the anticipations and assessments of diverse users to permit deep inquiries over group interaction. Hartmann's (2001) interviews were recorded with the use of a recorder. Al Awadhi and Rehman (2012), as well as Diep and Nahl (2011), have also used focus groups to study students' attitudes.

A focus group is defined by Morgan (1996: 130) as "a research technique that collects data through group interaction on a topic determined by the researcher". Participants share a common characteristic (De Vos, 2005: 298). They share perceptions, experiences, viewpoints, concerns and comments on the topic being researched (De Vos, 2005: 299; Walliman, 2006: 98). The researcher acts as a mediator (Pickard, 2013: 243). A focus group interview is less comprehensive than a one-on-one interview (Rasmussen, Ostergaard & Beckmann, 2006: 105-106).

Focus groups can be used to generate information about information literacy skills, to stimulate new ideas, diagnose problems related to the training programme and to generate users' perceptions about the programme (Pickard, 2013: 244).

In this study four focus group sessions were held, each time with participants representing all of the four schools/programmes. This allowed for a cross-program focus. Participants were purposively invited; voluntary participation was encouraged.

Information about the findings will be presented in Chapter 4.

### *3.2.5.3 Interview*

More in-depth information can be obtained with an interview because the face-to-face questioning offers the interviewer an opportunity to use their skills to overcome resistance and to clarify questions. The interviewer can even obtain more personal information. The respondent rate is high as compared to that of questionnaires (Kothari, 2004: 98).



An interview was conducted with the only librarian at Sefako Makgatho Health Sciences University responsible for information literacy skills training for undergraduate students. He was interviewed with regard to the scope of training and observed students' attitudes.

Some of the interview questions were adopted from a study by Baro and Zuokemefa (2011). The researchers surveyed 36 Nigerian university libraries' information literacy skills training programmes. The online survey was aimed at examining information literacy practices to identify barriers facing information literacy in Nigerian universities and to provide ways to improve information literacy practices.

The interview with the SMU librarian was aimed to last for at least 60 minutes given that the questions were emailed to him before the actual interview.

The negative aspect of using interviews is that they are costly especially when they are a large number and widespread geographically. The method is time consuming. The presence of an interviewer has also been found to be intimidating to respondents (Kothari, 2004: 99). Some of these negative aspects were also experienced in this study e.g. with the focus group interviews. The researcher had to call participants and send messages to invite them to participate in the study. Follow-up calls were also made. The researcher also had to drive to participants' respective residences. It also cost time to host the focus group interviews because a number of times the meetings were arranged and then postponed at the last moment because not all the participants were available.

The findings will be presented in Chapter 4.

### **3.3 ETHICAL CLEARANCE**

Ethical clearance was obtained from the Department of Information Science on behalf of the University of Pretoria, Faculty of Engineering, the Built Environment and Information Technology (EBIT).

The researcher also wrote a letter requesting approval from the Sefako Makgatho Health Sciences University Research Ethics Committee (SMUREC) to conduct the study. A covering letter explaining the purpose of the study, a proposal and ethical clearance approval letter from the Department of Information Science on behalf of the University of Pretoria, Faculty of Engineering, the Built Environment and Information Technology (EBIT), Faculty Committee for Research Ethics and Integrity were submitted when applying.

Before using any data collection instruments, the researcher was granted, ethical clearance. All participants signed informed consent forms before any of the data collection instruments were applied. The focus group interviews were tape recorded with signed informed consent from participants. A tape recorder would have also been used for the interview with the librarian; however, permission was not granted for the researcher to record the interview.

More on the above will be reported in Chapter 4.

### **3.4 RELIABILITY AND VALIDITY**

Reliability is defined by Powell (1993: 41) as “the degree to which an instrument accurately and consistently measures whatever it measures”. It relates to the accuracy of the measuring instruments used in a study and the data collected (Leedy, 1985: 26; Powell, 1993: 38). A measuring instrument is reliable if it provides consistent results.

Validity is about how trustworthy a research study is. According to Pickard (2013: 163) there is internal and external, as well as demographic and outcomes, validity. It indicates the degree to which an instrument measures what it is supposed to measure and the extent to which the differences found with a measuring instrument reflect true differences among those being tested. Validity can be categorised into content, criterion-related and construct validity (Kothari, 2004: 58).

Reliability and validity can be improved by standardising the conditions and carefully designing the directions or measurements with no variation from group to group, by doing triangulation, by piloting instruments prior to use to check if they yield the desired results, by using trained and motivated persons as researchers and by broadening the sample (Kothari, 2004; Leedy, 1985; Powell, 1993).

The study was broad representing all four SMU schools and complemented by four focus group interviews and an individual interview with the librarian. Triangulation was done and findings for the questionnaire and interviews compared. A pilot study was not done to detect any un-clarities that could cause misunderstanding of the questions.

### **3.5 CONCLUSION**

The research design in this chapter will guide the empirical study to investigate whether the information literacy training at SMU library does affect first year students’ attitude towards information literacy and

the use of information retrieval systems and to find out which factors influence the attitudes of students towards information literacy training and the use of information retrieval systems.

The next chapter reports on the findings of the study; the findings are also discussed and interpreted and recommendations are also made.

## CHAPTER 4: FINDINGS, DISCUSSION AND INTERPRETATION OF FINDINGS

### 4.1 INTRODUCTION

This chapter presents the results of an assessment of the attitudes of undergraduate students towards information literacy training with Sefako Makgatho Health Sciences University (SMU) Library as a case study. Data were collected by applying the methodology, methods, and instruments as outlined in Chapter 3 on research design. The findings answer two sub-questions regarding the research problem that was explained in Chapter 1 (Section 1.3).

The chapter reports on the research profile and methods of data collection that were used, the findings from questionnaires, focus groups and the librarian's interview, the discussion and interpretation of the findings from the three collection methods, and findings from triangulation of the data.

<b>Problem</b>	<b>Sub-question to answer from the study site</b>	<b>Sub-questions to answer from the empirical component</b>
To what extent does the information literacy skills training offered at the Sefako Makgatho Health Sciences University (SMU) Library affect the students' attitude to information literacy training and their use information retrieval systems?	What is the scope of information literacy training at SMU Library with regard to information retrieval systems?	How does the information literacy training at SMU library affect first year students' attitude towards information literacy and the use of information retrieval systems? Which factors influence the attitudes of students towards information literacy training and the use of information retrieval systems?

**Table 4.1: Research problem and sub-problems (answered from the study site and the empirical component)**

### 4.2 RESEARCH PROFILE AND METHODS OF DATA COLLECTION

As explained in earlier chapters (1 & 3), the study used a mixed methods approach which combined quantitative (for numeric data) and qualitative (for more detailed data on personal views, perceptions and experiences) as well as data triangulation (including findings from the literature review). Quantitative data was collected using questionnaires targeting first year students in 2015. For qualitative data, focus group interviews were held with 18 students representing the four schools and an individual interview was also held with the librarian responsible for information literacy training for undergraduate students. This was in line with a report by Schilling and Applegate (2007) noting that the evaluation of educational library programmes usually includes both quantitative and qualitative measures.

Table 4.2 shows the data collection in terms of methods used to collect data, the numbers of participants for each instrument, and the number of questionnaires that were distributed, as well as the number of returned questionnaires and details of the individual and focus group interviews.

<b>Questionnaire (Appendix F)</b>				
School	Medicine	Pathology & Pre-Clinical Sciences	Oral Health Sciences	Health Care Sciences
Distributed	394			
Returned	225			
Incomplete	6 (not clear for which schools)			
Useful	219			
Analysed	92	53	26	48
<b>Focus group, recorded (Appendix G)</b>				
Group	MBCbB (Medicine)	BSc (Pathology and Pre-Clinical Sciences)	BDS (Oral Health Sciences)	BCur (Health Care Sciences)
Number	4	5	4	5
When	15/10/2015 (lunch)	20/10/2015 (lunch)	21/10/2015 (evening)	28/10/2015 (evening)
Duration	19:55 minutes	31:23 minutes	20:21 minutes	27:30 minutes
Where	Room 118, library	Room 118, library	Drie Lilies flats	Drie Lilies flats
<b>Librarian's interview (Appendix H)</b>				
Library room 118	16/10/2015	Lasted 25 minutes, 6 seconds	Not recorded	

**Table 4.2: Data collection methods used and numbers of participants**

Not all the first year students attended the information literacy skills training as it was only compulsory for students who are registered for 1<sup>st</sup> year courses in English. Most students did not realise the essence of the training when it was announced and were therefore not interested in attending.

Due to unforeseen circumstances beyond the researcher's control the questionnaires could only be distributed to students who visited the library between 14 October and 06 November 2015 and those who were followed to the sports complex after writing examinations. Data for all three instruments were collected from the 14<sup>th</sup> October to the 6<sup>th</sup> November 2015. Class representatives also assisted in distributing to and collecting questionnaires from students at their places of residence. All the schools were represented in the study. The study compared the analysed data of the four schools.

### 4.3 FINDINGS OF QUESTIONNAIRES<sup>1</sup>

The composition of the questionnaire is explained in Section 2.6, Figure 2.4. The questionnaire is available in Appendix F. It comprised one open and eight closed questions.

As illustrated in Table 4.2, 394 questionnaires were distributed, but only 225 were returned, 6 were not useful and therefore only 219 satisfactorily completed questionnaires were analysed. Not all respondents completed all the questions; the total number (N) of respondents thus differs sometimes for different questions. It is not clear from which schools the uncompleted questionnaires were received. Due to examinations and ceasing of classes, questionnaires were not distributed in classes as was initially intended. Some of the students did not participate in the study, because they had found the timing of the training inconvenient and therefore did not attend since the training is not compulsory.

The following subsections will report the descriptive statistics for data collected through the questionnaire (Appendix F) as well as discussion of the findings.

#### 4.3.1 Demographic information

The first question was aimed at collecting data on the students' demographic information with regard to the schools they were enrolled in. The demographic data collected include participation according to schools and the period when the training was attended. Results are shown in Tables 4.3 and 4.4. N refers to the total number of participants to each question. This Section will report findings for questions 1 and 2 in Appendix F.

##### 4.3.1.1 Participation according to schools

Question 1 (Appendix F) was geared at collecting information on the number of participants per school. The results are presented in Table 4.3.

School (N=219)	Participants	Percentages
Medicine	92	42%
Oral Health Sciences	26	12%
Health Care Sciences	48	22%
Pathology and Pre-Clinical Sciences	53	24%

**Table 4.3: Participation according to schools**

<sup>1</sup> Sub-headings in 4.3 – 4.6 are aligned with the question formulations for Questionnaire and interview schedules for the librarian and focus groups, attached in this manuscript as Appendices F, G and H.

The highest percentage of students that participated in the study (92/219; 42%) was registered in the School of Medicine followed by the School of Pathology and Pre-Clinical Sciences with 53/219 (24%) whereas students registered in the schools of Health Sciences and Oral Health Sciences made up 48/219 (22%) and 26/219 (12%) of the participants in the study, respectively. It was found that the largest number of participants was from the school with the largest number of students, and a similar relationship applies for the lowest number of participants. The results are therefore thought to be representative of the student population.

#### 4.3.1.2 Period when training was attended

Question 2 (Appendix F) enquired about the period within which the participants attended the training. The findings are shown in Table 4.4.

School (N=219)	First term of 2015	Second term of 2015	2014	Other
Total	172	31	11	5
Percentages	78.5%	14.2%	5%	2.3%

**Table 4.4: Period when training was attended**

The number of students that participated in the training during the first term of 2015 was 172/219 (78.5%), while 31/219 (14.2%) participated in the second term that year. This result implies that 203/219 (92.7%) of the students who participated in the study attended the training in 2015, the year in which data were collected. Only 16/219 (7.3%) attended in earlier years (details were not requested about the time of this training).

#### 4.3.2 Information literacy skills training

This section reports on the findings for question 3 to question 7 as reflected in Appendix F.

##### 4.3.2.1 Training opportunities attended

Students were asked to indicate which SMU library information literacy skills training opportunities they participated in. Question 3 (Appendix F) attempted to find out the number of students who made an effort to participate in the opportunities made available.

Training (N=219)	Library orientation	Library tour	Library information literacy training
Total	180	123	162
Percentage	82%	56%	74%

**Table 4.5: Training attended**

Students could attend any of the 3 stand-alone training opportunities being: library orientation, library tour and library information literacy. Some students participated in more than one opportunity. A large number of participants (180/219; 82%) attended the library orientation, while 162/219 (74%) of the participants attended the library information literacy training. The library tour was the least attended; that was 123/219 (56.2%).

#### 4.3.2.2 Value of information literacy skills addressed in the training

Question 4 (Appendix F) inquired about students' overall opinion on the value of the information literacy skills addressed during training. Participants were given four options (relevant, valuable, useful and irrelevant) to choose from. Some selected more than one option; these are shown in the last two columns, i.e. "Relevant and useful", and "Relevant, valuable and useful". Seven out of 219 participants responded incorrectly to this question and were excluded when analysing this question. Therefore N=212 for this question.

Perception (N=212)	Relevant	Valuable	Useful	Irrelevant	Relevant and useful	Relevant, valuable and useful
Total	45	39	107	3	5	13
Percentage	21.2%	18.4%	50.5%	1.4%	2.4%	6.1%

**Table 4.6: Value of information literacy skills learned during training**

Table 4.6 shows that 107/212 (50.5%) of the participants found the information literacy skills addressed during the training useful, while 45/212 (21.2%) and 39/212 (18.4%) of the respondents found the skills valuable and relevant, respectively. Of the remaining respondents, 5/212 (2.4%) found the skills both relevant and useful, while 13/212 (6.1%) found the skills relevant, valuable and useful. Only 3/212 (1.4%) of the participants found the skills irrelevant. By considering the combined numbers for useful (50.5%), valuable (21.2%) and relevant (18.4%), which aggregates to (90.1%), it can be concluded that the skills addressed in the training were of value to students.

#### 4.3.2.3 Overall opinion on the information literacy training programme offered

Question 5 (Appendix F) asked students to voice their opinions on the overall information literacy training programme offered by the SMU library. They were given four options (interesting, valuable, boring and a waste of time) to choose from. Some participants opted for more than one option which led to Table 4.7



also reflecting these combinations, namely “Interesting and valuable”, “Interesting, valuable and boring”, and “Interesting but boring”.

Perception (N=219)	Interesting	Valuable	Boring	Waste of time	Interesting and valuable	Interesting, valuable and boring	Valuable but boring	Interesting but boring
Total	68	111	16	3	11	1	4	1
Percentage	31.6%	51.6%	7.4%	1.4%	5.1%	0.5%	1.9%	0.5%

**Table 4.7: Opinion on the overall training programme**

The number of respondents who found the training to be valuable is slightly greater than half at 111/215 (51.6%), while 68/215 (31.6%) of the participants thought the training was interesting. Only 11/215 (5.1%) found the training both valuable and interesting and 1/215 (0.5%) found it both interesting and valuable, but boring at the same time, another 4/215 (1.9%) found the training valuable and boring. A total of 19/215 (8.8%) did not associate the training with any positive attribute; for 16/215 (7.4%), it was completely boring and 3/215 (1.4%) participants thought it was a waste of time.

#### 4.3.2.4 Value of information literacy skills for first year studies, future studies and everyday life<sup>2</sup>

Students were asked in question 6 (Appendix F) to indicate their ranking of the value of the information literacy skills in relation to their first year studies, future studies and everyday life. Their options were (very valuable, valuable, somewhat valuable and not valuable at all).

Value of information literacy skills	Very valuable	Valuable	Somewhat valuable	Not valuable at all
<b>First year studies (N= 219 - 8 = 211)</b>				
Total	97	84	21	9
Percentages	46%	40%	10%	4%
<b>Future Studies (N= 219 - 2= 217)</b>				
Total	103	76	25	13
Percentages	47.5%	35%	11.5%	6%
<b>Everyday Life (N= 219 -2= 217)</b>				
Total	77	77	42	21
Percentages	35.5%	35.5%	19%	10%

**Table 4.8: Value of training for first year studies, future career and everyday life**

<sup>2</sup> In table 4.8 (the numbering e.g. - 8) refers to the number of participants that did not complete certain parts of the question

From the participants, 97/211 (46%) considered it very valuable for first year students to attend information literacy training, 84/211 (40%) found the training valuable, 21/211 (10%) were uncertain (somewhat valuable), and 9/211 (4%) considered the training not valuable at all. 103/217 (47.5%) of the respondents thought the information literacy skills learned during the training would be very valuable and 76/217 (35%) considered it valuable for their future studies. 25/217 (11.5%) were uncertain (somewhat valuable) and 13/217 (6%) considered it not valuable.

For everyday life, the training was regarded by 77/217 (35.5%) as being very valuable and 77/217 (35.5%) as valuable. 42/217 (19%) respondents were undecided (somewhat valuable) whilst 21/217 (10%) of respondents said it was of no value at all.

#### 4.3.2.5 Ranking of the value of learned skills on first year studies

In question 7 (Appendix F) participants were asked to rank the value of skills addressed in the training for their first year studies. They used a 1 – 12 point Likert scale where 1 was for most valuable and 12, the least valuable.

To determine whether the skills were found to be valuable, the researcher added the total number of participants that selected 1-6 and calculated the percentages. The same was done for skills that were found not to be valuable: the participants ranking skills from 7 to 12 were added and the percentages calculated. The same percentage determination strategy was used for all the skills ranked.

The analysis of the rankings was done in a table format (showing the ranks and number of participants that ranked a particular skill) as presented in Tables 4.9 to 4.20.

Library tour (N = 215)												
Rank	1	2	3	4	5	6	7	8	9	10	11	12
Participants	50	11	13	10	22	8	12	12	10	35	7	25
Percentages	23.3%	5%	6%	4.7%	10.2%	3.7%	5.6%	5.6%	4.7%	16.3%	3.3%	11.6%

**Table 4.9: Value of library tour**

With regard to the library tour N = 215. The highest rank of 1 was chosen by 50/215 (23.3%) of the students, which suggested that they found it most valuable. When adding up the rankings from 1 to 6 a total of 114/215 (53%) is obtained as opposed to the total percentage for least valuable of 101/215 (47%) calculated from the 7 to 12 rankings. It can therefore be deduced that the majority of the students found the library tour valuable or relatively valuable.

Library, services and registration (N=209)												
Rank	1	2	3	4	5	6	7	8	9	10	11	12
Participants	58	18	16	8	14	5	6	10	11	34	13	16
Percentages	27.8%	8.6%	7.7%	3.8%	6.7%	2.4%	2.9%	4.8%	5.3%	16.3%	6%	7.7%

**Table 4.10: Value of library services and registration skills**

Knowledge on library services and registration was valuable according to 119/209 (56.9%) and not to 90/209 (43.1%).

Value of training in relation to library's expectation of users (N = 213)												
Rank	1	2	3	4	5	6	7	8	9	10	11	12
Participants	45	22	13	11	19	14	12	11	9	30	14	13
Percentages	21.1%	10.3%	6.1%	5.2%	8.9%	6.6%	5.6%	5.2%	4.2%	14.1%	6.6%	6.1%

**Table 4.11: Value of training in relation to library's expectation of users**

124/213 (58.2%) of the participants thought it was most valuable that they learned about the library's expectations of library users during their first year studies whilst 89/213 (41.8%) opposed this view.

How to reference (N = 210)												
Rank	1	2	3	4	5	6	7	8	9	10	11	12
Participants	71	21	12	4	9	10	6	10	7	27	14	19
Percentages	33.8%	10%	5.7%	2%	4.3%	4.8%	2.9%	4.8%	3%	13%	6.7%	9%

**Table 4.12: Value of referencing skills**

127/210 (60.5%) respondents found the training on referencing to be valuable unlike the remaining 83/210 (39.5%).

How to use books (N = 211)												
Rank	1	2	3	4	5	6	7	8	9	10	11	12
Participant	65	25	9	10	5	7	8	14	7	15	15	31
Percentages	30.8%	11.8%	4.3%	4.7%	2.4%	3.3%	3.8%	6.6%	3.3%	7%	7%	15%

**Table 4.13: Value of book use skills**

With regard to skills on how to use books 121/210 (57.6%) of participants indicated that the training was valuable and 90/210 (42.4%) differed.

How to use journals (N = 210)												
Rank	1	2	3	4	5	6	7	8	9	10	11	12
Participant	51	19	20	8	15	11	14	7	19	24	5	17
Percentages	24%	9%	10%	4%	7.1%	5%	7%	3%	9%	11.4%	2.4%	8.1%

**Table 4.14: Value of skills for using journals**

124/210 (59%) found value in the training on the use of journals and 86/210 (41%) thought there was no need for the training to be offered.

Using audio-visual materials (N = 211)												
Rank	1	2	3	4	5	6	7	8	9	10	11	12
Participant	38	21	12	16	21	14	10	13	10	20	12	24
Percentages	18%	10%	6%	7.6%	10%	6.6%	4.7%	6.2%	4.7%	9.5%	5.7%	11%

**Table 4.15: Value of skills for using audio-visual materials**

Learning about audio-visual materials was valuable to 122/211 (57.9%) of respondents as opposed to the 89/211 (42.1%) who did not find it very valuable.

Caring for books (N = 213)												
Rank	1	2	3	4	5	6	7	8	9	10	11	12
Participant	60	22	10	14	12	4	11	12	8	22	8	30
Percentages	28.2%	10.3%	4.7%	6.6%	5.6%	1.9%	5.2%	5.6%	3.8%	10.3%	3.8%	14%

**Table 4.16: Value of skills for caring for books**

How to care for books was considered a very valuable skill in first year studies by 122/213 (57.3%) participants, while it was considered of no value by 91/213 (42.7%) respondents.

Copyright (N = 214)												
Rank	1	2	3	4	5	6	7	8	9	10	11	12
Participant	57	16	12	8	14	11	9	11	10	23	16	27
Percentages	26.6%	7.5%	5.6%	4%	6.5%	5%	4%	5%	4.7%	11%	7.5%	12.6%

**Table 4.17: Value of copyright skills**

The skills gained from the training on copyright law was ranked by 118/214 (55%) of the participants as being valuable and deemed by 96/214 (45%) as not valuable.

Searching the computer catalogue (N = 209)												
Rank	1	2	3	4	5	6	7	8	9	10	11	12
Participant	62	19	14	9	12	8	7	7	9	18	10	34
Percentages	29.7%	9.1%	6.7%	4.3%	5.7%	3.8%	3%	3%	5%	8.6%	4.8%	16.3%

**Table 4.18: Value of practical skills for searching the computer catalogue**

124/209 (59.3%) participants found the training on how to search for information on the computer catalogue valuable. The remaining 85/209 (40.7%), however, did not value the training.

Finding books on the shelves (N =203)												
Rank	1	2	3	4	5	6	7	8	9	10	11	12
Participant	65	15	15	7	6	8	8	9	4	25	10	31
Percentages	32%	7.4	7.4	3.4	3%	3.9%	3.9%	4.4%	2%	12.3%	5%	15.3%

**Table 4.19: Value of practical skills for finding books on the shelves**

116/203 (57.1%) reckoned that the training on how to find books on the shelves was of value to them especially in their first year of study, while 87/203 (42.9%) did not consider it to be valuable.

Searching internet and databases (N = 201)												
Rank	1	2	3	4	5	6	7	8	9	10	11	12
Participant	57	13	12	6	9	10	7	8	4	19	14	42
Percentages	28%	6.5%	6%	3%	4.5%	5%	3.5	4%	2%	9.5%	7%	21%

**Table 4.20: Value of practical skills for searching the internet and databases**

According to 107/201 (53.4%) of the participants, searching the internet and databases was a valuable skill that should be learned in the first year of studies. There were, however, 94/201 (46.6%) who disagreed. From the responses overall, with all skills ranking at least 50% positive, it seems as if there is a moderately positive feeling about the value of the skills addressed in the information literacy training.

### 4.3.3 Outcomes of the information literacy training

The findings reported in this section cover questions 8 and 9 from Appendix F.

#### 4.3.3.1 Perceptions of the outcome of the information literacy training i.e. skills and attitude

Perceptions on outcomes of information literacy training	N	Strongly agree	Agree	Disagree	Strongly disagreed
Searching of the library catalogue is easier	214	80	113	18	3
Searching of the Internet is easier	216	88	99	20	9
Searching of the databases is easier	217	80	107	23	7
Increase of confidence in using the library catalogue	216	77	112	21	7
Increase in confidence in using the Internet	216	104	88	21	3
Increase in confidence in using databases	216	85	100	29	2
Increase in motivation to use library resources and services	214	98	97	14	5
Increase in ability to avoid plagiarism	211	94	83	25	9
Increase inability to find information using less time and effort	216	63	95	39	19

**Table 4.21: Perceptions on outcomes of information literacy training**

In question 8 (Appendix F) participants were asked to share their perception of the outcome of the information literacy training, i.e. skills and attitudes that have improved because of the training. Two students did not complete this part. One student wrote N/A for all the responses. The four options that they had to choose from were agree, strongly agree, disagree and strongly disagree. The results explained below are presented in Table 4.21 above.

113/214 (52.8%) of participants agreed that the training had improved their searching skills, they could now easily search the library catalogue, 80/214 (37.4%) strongly agreed, 18/214 (8.4%) disagreed and 3/214 (1.4%) strongly disagreed that the training had improved their searching skills. All in all, 193/214 (90.2%) were positive about their improved skills for searching the catalogue.

From the participants, 99/216 (46%) agreed that searching the internet had become easier, 88/216 (41%) strongly agreed, 20/216 (9%) disagreed whilst, 9/216 (4%) strongly disagreed that their internet search skills had improved due to the information literacy training. Combining the results for agreed and strongly agreed, 187/216 (87%) of the students felt that their internet search skills had improved.

From the participants, 107/217 (49%) agreed that as a result of the training they could now search databases more easily, 80/217 (37%) strongly agreed, whilst 23/217 (11%) disagreed and 7/217 (3%)

strongly disagreed with the opinion. Combining the results for agreed and strongly agreed, a total of 187/217 (86%) of the students felt that they could easily search databases as a result of the training.

It has been noted from the tabulated percentages that the improvement with searching the internet (187/216, 87%) and databases (187/217, 86%) respectively, is less as compared to that of searching the library catalogue– (193/214, 90.2%). Generally, however, it seems from the feedback that respondents have noted positive changes in the way they search for information through different mediums of access.

This study found that information literacy training can increase students' confidence in using services such as the library catalogue, internet and databases. 112/217 (52%) agreed and 77/217 (35%) strongly agreed that their confidence in using the library's computerised catalogue was improved; 21/217 (10%) participants disagreed and 7/217 (3%) participants strongly disagreed that the training had increased their confidence in using the catalogue.

Participants' confidence in using the internet had also increased as a result of the information literacy training. 104/216 (48%) strongly agreed and 88/216 (41%) agreed on this, while 21/216 (10%) disagreed and 3/216 (1%) strongly disagreed on the information literacy training having a positive impact on their confidence in using the internet. When combining responses for agree and strongly agree, 192/216 (89%) of participants felt that their confidence in using the internet had increased.

Another positive outcome of the training to which 85/216 (39.4%) strongly agreed, and 100/216 (46.3%) agreed that there had been an increase in participants' confidence was in database searching. Only 29/216 (13.4%) disagreed and 2/216 (0.9%) strongly disagreed that the information literacy training increased their confidence in database searching. When combining the responses of those who agreed and those who strongly agreed about the positive impact of the training, 185/216 (86%) were positive about the impact of the training on their improved confidence in using databases.

Overall more than 80% of the participants indicated that their confidence in using the library catalogue– (147/217, 87%), internet (192/216, 89%) and databases (185/216, 86%) had increased.

The motivation to use library resources and services had increased as a result of the information literacy training. According to the responses 98/214 (46%) participants strongly agreed and 97/214 (45%) agreed that their motivation to use library resources and services had increased whilst 14/214 (7%) disagreed and 5/214 (2%) strongly disagreed with this claim. An aggregate of 195/214 (91%) had been motivated as a result of the training.

This study found that information literacy training had also enabled participants to avoid plagiarism: 94/211 (45%) strongly agreed and 83/211 (39%) agreed with the statement, whilst 25/211 (12%) disagreed and 9/211 (4%) strongly disagreed on the proposition that the information literacy training had enabled them to avoid plagiarism. 177/211 (84%) of the participants were of the opinion that after training they were able to avoid plagiarism.

It was also revealed that as a result of the information literacy training, participants' ability to find information using less time and effort had increased. From the participants, 95/216 (44%) agreed with the statement and 63/216 (29%) strongly agreed, 39/216 (18%) disagreed and 19/216 (9%) strongly disagreed. Thus, 58/216 (27%) felt that the training has not increased their ability to find information using less time and effort.

#### *4.3.3.2 Outcomes of the SMU Library information literacy training*

Students were asked to share their opinion on the outcome of the information literacy skills training provided by the SMU Library. This was an open question, giving participants an opportunity to elaborate more on the training or to bring to light other areas of the training that were not catered for in closed questions. Responses to question 9 (Appendix F) are divided into two parts: (a) responses related to outcomes of the information literacy training and (b) input relating to improving the library service. The latter came about because some participants, instead of commenting on outcomes of the training, suggested changes that could help the library to improve the training.

##### **(a) Suggestions related to outcomes of the information literacy training**

Students recommended that the number of students being trained in one session be minimised and the training be divided into smaller groups. They suggested that the timing for training should be revisited. They wished that the training could be repeated from time to time to cater for slower students. They wanted the library to introduce an online training programme and draft step-by-step training manuals covering all SMU library information services, such as photocopying and printing, use of blackboard, copyright law and plagiarism, as well as creation and use of emails. Students also pointed out that training should be aligned to availability of resources and services. The library should offer information literacy training in such a way that it did not raise students' expectations beyond what the library can offer.

##### **(b) Suggestions related to improving the library service**

In addition to suggestions for improvement of the information literacy training students also made recommendations on how to improve library services.



They raised challenges such as insufficient computers, outdated library collections especially regarding textbooks, no access to online exam papers and poor WIFI connection. They suggested that the library should extend its space to accommodate more discussion areas, provide more computers and extend opening hours (24/7).

Students also noted *ad-hoc* barriers impacting on their motivation to visit the library and to use the library services, namely, clean toilets, a welcoming attitude from library staff, permission to eat and drink in the library and proper library signage which would make the library more inviting and resources easy to find.

Some students decided not to respond to the question and left the question blank while some indicated that they were satisfied with the training as it is offered currently.

#### 4.4 FINDINGS OF FOCUS GROUP INTERVIEWS<sup>3</sup>

In the current study, four focus groups were formed, representing SMU's four schools. Eighteen students participated. Information relating to the focus group interviews is captured in Table 4.2. The question schedule is attached as Appendix H. The questions covered:

- (1) Students' perceptions of the value of the training
- (2) The scope that was covered in the training and the training style used
- (3) Students' emotions whilst attending training
- (4) The period when the training was attended and how students feel about the training now
- (5) Positive experiences during training and afterwards when applying the learned skills
- (6) Negative experiences during training and afterwards when applying the learned skills
- (7) Suggestions for areas of improvement and changes in the training

The focus group discussions were planned to last for 45 minutes at most but only lasted between 21 and 33 minutes. A copy of the focus group interview schedule (Appendix H) was handed to participants just before the interview to familiarise themselves with the questions, they were then briefed about the purpose of the study. Participants signed an informed consent form (Appendix E) before the interview and with their approval the interviews were digitally recorded using a mobile phone voice recorder. When transcribing, phrases and words such as "it was like", "oh my God", "argh", "eish" "dude" were omitted. The discussions were freely transcribed and then analysed according to predetermined themes from the interview schedule for focus groups and the decision on subdivisions used was guided by responses from participants. Themes are covered in Appendix H – Question 1 to 7. The findings are reported in sections 4.4.1 to 4.4.7.

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<sup>3</sup> Sub-Headings in 4.3 – 4.6 are aligned with the question formulations in the three data collection schedules attached in this document as Appendices F, G and H.

In the current report codes were assigned for each participant to maintain anonymity and to allow the researcher to retrace quotes if needed. The names of participants and their schools were not mentioned and participants were coded as (P1) to (P18) because the anonymity of the identity of research participants should remain undisclosed and protected by the researcher.

#### **4.4.1 Perceptions on value of the training for first year (future studies, careers, jobs and everyday life)**

Question 1 (Appendix H) was aimed at determining participants' perceptions of the value of the training to their information needs for future studies, careers, jobs and everyday life.

The following stood out from the feedback:

- (1) Acceptance of the value of information literacy for future life
- (2) Increased awareness of where to find information – also for first year and future
- (3) Developing skills in research
- (4) Improved need for using the library.

The issues are supported by verbatim quotes from participants included in the more detailed discussions in Sections 4.4.1.1 to 4.4.1.4:

##### *4.4.1.1 Acceptance of the value of information literacy for future life*

A number of participants found the training very necessary and helpful for their studies, career development and future life.

*“Coming from high school with no computer skills training the training equipped us with knowledge on how to search the internet and catalogues” (P16).*

*“I am from a disadvantaged area, I knew nothing about computers and libraries, the course made it easier for my first year, everyday life and I will use them for my future and career” (P7).*

*“It helped me to google information and search for books the proper way. In future and everyday life it will help me to be computer literate. Since I am from a disadvantaged background, the skills training have improved my search skills and class marks” (P8).*

*“I am from a high school with no computers, so I learned a lot from the training. It is already valuable for my studies and will be for my career and everyday life” (P11).*

*“It taught me how to use libraries effectively. I had no computer and library background and have improved my vocabulary. It instilled in me the love and need to use the library. The skills will be useful daily in the future. I even use the skills to search on my mobile phone” (P17).*

Some students differed; their feeling was that the training was important but they could have managed to cope without it especially in first year studies. They said:

*“For first year it is not useful; we do not search for prescribed books. I am using it though for everyday life. The skills will be used in future for research and I use them at internet cafes as well to search any kind of information” (P12).*

*“As first year students, it did not help me much because books are prescribed and lecturers give us notes on slides. For future I will use it for research and career and it will be useful even in everyday life to find sources to broaden my knowledge. As long as I have WIFI and computer I will search for everyday information” (P13).*

*“It is not useful for first year as I get information from lecturers’ slides but it will be useful in future and career to search for information for my work, for myself and diseases. I use the skills on my phone” (P14).*

#### *4.4.1.2 Increased awareness of where to find information – also for first year and future*

Some participants confirmed that the training had increased their awareness of how to search for information, such as authors and titles on the catalogue and internet, and to locate resources.

*“I found the training valuable and I intend to train other students who were blank like me” (P9).*

*“I search for information for subjects although I get notes from lecturers for first year studies” (P10).*

*“It is valuable to easily access information on the catalogue and internet. I see doctors coming to the library so I will need skills for future career and my future” (P3).*

*“I learned how to search for information using authors [and] title and how to reference and use the internet” (P6).*

*“It is valuable; helped me to enjoy using the library. It will help in future pursuing my career and in searching for information for life issues” (P15).*

*“I use the library often for academic and personal information daily and the skills will be useful in everyday life” (P4).*

*“The training helped me to find where study materials are located. People say we will need information and I will need information for life” (P1).*

#### *4.4.1.3 Developing skills in research*

From the findings it appears that the training has equipped participants with the skills needed to search for information necessary for research.

*“I will use the skills effectively in my future studies and in everyday life as we will need to search, find and use information for research, career and to broaden their knowledge spectrum” (P18).*

*“It is needed for looking for resources and using the library fully. As we upgrade to upper levels it will be needed for research, for general information for career and to function as a normal and informed person” (P5).*

#### 4.4.1.4 Improved need for using the library

Although participants acknowledged the value of information literacy training for their future life, a participant also noted that even so, he/she does not need the library. This is seen in the following verbatim quote:

*“It is essential as some of us were not exposed to libraries. My mentor says I will need the skills for research. For everyday life it is essential, but I can cope without the library” (P2).*

#### 4.4.2 Thoughts about the scope and style of training offered by the SMU Library

Question 2 (Appendix H) gathered participants’ opinions in relation to the training coverage and the librarian’s training style.

The thoughts gathered were around the following issues:

- (1) Lack of prior-knowledge leading to low expectations
- (2) A balanced coverage/scope
- (3) Improved training skills for the librarian

The above issues are discussed under sections 4.4.2.1 to 4.4.2.3:

##### 4.4.2.1 Lack of prior-knowledge leading to low expectations

The training was a new thing to some students as already recorded in the above section. Most of them were from disadvantaged areas with no prior knowledge of libraries and computers so they had no expectations with regard to what was supposed to be covered and how well it was offered.

*“Being new to the training and libraries, I had no pre-set expectations; anything was good enough” (P1).*

*“I agree with student 1, but I didn’t know anything so the scope was enough” (P4).*

*“It was my first experience, so I did not know what to expect. The scope was enough, though it did not cover how to photocopy and print, which is a problem for us” (P7).*

##### 4.4.2.2 A balanced coverage and scope

A number of students said the coverage of the training was good in the sense that it covered the catalogue, internet, databases, locating books on the shelves, evaluation of sources and more.

*“The coverage was good” (P2), (P5), (P6) & (P11).*

*“It covered searching the catalogue, internet and databases” (P3).*

*“It covered locating books from shelves and evaluation of sources” (P16).*

*“We were also taught how to use internet and find books” (P11).*

*“It was great. I wish there were more training guides with pictures with regard to all library systems including photocopying” (P12).*

*“It was enough” (P13).*

*“It was okay, I enjoyed searching on the internet” (P14).*

*“The training scope covered pretty much of what would be needed for our studies” (P18).*

*“It covered searching the library software, the catalogue and how to find books from shelves; the scope was perfect for a first year student” (P10).*

For a few participants the training was not good enough:

*“The session was short. I think that the training should be repeated to cater for slow students because the scope is too much” (P8).*

*“The scope covered finding books and searching for information on the internet but we still don’t know how to photocopy” (P15).*

#### 4.4.2.3 Training skills

Although the training was good, some participants highlighted the importance of training skills and appropriate engagement with the groups.

*“The style was good but the library can do better; the trainer should be trained on presentation skills” (P9).*

*“The trainer looked bored” (P5).*

*“Uninterested students made noise during training” (P12).*

Some students thought that the librarian/trainer was professional, approachable and a great trainer. They did not suggest any training interventions for the librarian.

*“The style was on point, I know how to search for books” (P17).*

*“The trainer was helpful and allowed questions but the slides were too full” (P18).*

*“The librarian was good, the level of professionalism was good” (P13).*

*“The friendly and positive trainer made it easy by encouraging participation, the style was fine” (P11).*

*“The trainer was good” (P6).*

*“It was well-presented, practical and interesting” (P2).*

*“I think the style was great” (P4).*

*“I liked the practicals on search skills” (P14).*

#### **4.4.3 Description of students’ emotional experiences about the training when they were attending the SMU Library’s information literacy training**

In question 3 (Appendix H) participants were asked to describe the emotions they had when they were attending the training. 12/18 (67%) found the training overwhelming, discouraging, uninteresting and boring. This was noted in their quotes:

*“I was overwhelmed, disoriented and confused at the beginning but got interested, relaxed and easy as the training continued” (P1).*

*“I was uninterested and bored” (P5).*

*“Some parts of the training were helpful but boring” (P6).*

*“To me I thought it was a waste of time but when I started to use it I enjoyed it” (P7).*

*“For me the training was overwhelming until the end, I thought I was the only one who did not understand. The trainer was fast. I got discouraged and have never tried the skills nor used the library systems after that” (P8).*

*“It was boring because I did not know its importance” (P11).*

*“I was not willing to attend. In training I was less interested” (P12).*

*“I was not eager to learn. I was not willing to use the library afterwards and I will not use it by choice” (P13).*

*“I didn’t think it was important until after when I had to use it for my studies” (P14).*

*“I don’t use the skills and the library and I will never use it” (P18).*

On the contrary, 6/18 (33%) had positive thoughts about the training; they were excited and happy about the training. According to them:-

*“It was boring, I did not think it was important but now I am productive, it was a transition since we didn’t have computers at high school” (P17).*

*“I felt depressed, it sounded interesting and I understood nothing. I struggled afterwards but was helped by a friend and I now know it is important” (P9).*

*“It was interesting and exciting to learn new things and skills that would make my academic life easy” (P2).*

*“I was relaxed because the training staff was approachable, welcoming and nice” (P3).*

*“I was excited and enjoyed, we were encouraged to participate” (P4).*

*“I was happy and I became a go-getter but I faced challenges with limited computers in the library” (P10).*

*“It was a great experience to learn about information services and how to use them” (P15).*

*“At first I was confused but as time went on I enjoyed the training” (P16).*

#### **4.4.4 The period when the SMU Library’s training was attended and students’ emotional experiences about the training now**

Question 4 (Appendix H) enquired about the timing and duration of the training and participants’ emotional reactions to this. The following issues stood out:

- (1) Period of training
- (2) Shifts in attitudes towards training
- (3) Ease and simplicity in finding information
- (4) Lack of confidence in the training
- (5) Improved use of the librarian

The issues listed above are elaborated in sections 4.4.4.1 to 4.4.4.6:

##### *4.4.4.1 Period of training*

16/18 (89%) participants attended the training in the first semester of 2015. 1/18 (5.6%) attended in 2014, the candidate is repeating class. 1/18 (5.6%) attended in 2013. This candidate had already attended the information literacy skills training at the University of Pretoria library; he attended the SMU Library training to expand his knowledge. The majority of students attended training in the year when the study was done. Feedback about the training is given in sections 4.4.4.2 to 4.4.4.6.

##### *4.4.4.2 Shift in attitudes towards training*

Judging from the responses listed below, participants’ attitudes towards the training were positively shifted as a result of the enlightenment attained.

*“I did not see the need for the course but am now happy I attended and can now realise its value” (P12).*

*“I now know how to search for relevant authors and titles although I was bored during the training” (P13).*

*“At first it was useless, a waste of my time but now I feel great; I can use the catalogue [and] the internet and I can find books for myself. My search skills have improved” (P10).*

*“I learned how helpful it was when I started using the skills” (P6).*

*“I will use the skills in the future” (P11).*

*“It was necessary and should be compulsory for all first year students because the library is complicated” (P4).*

#### 4.4.4.3 Ease and simplicity in finding information

After attending the training, the participants experienced that they search and find information with less effort and more speed.

*“I am happy that I attended and appreciate it; finding information is easier now” (P1).*

*“I am grateful for the training; I can now use journals” (P2).*

*“I know how to search and find sources simpler and faster” (P3).*

*“I spend less time searching” (P5).*

#### 4.4.4.4 Lack of confidence in the training

Some students felt that there was no need for the training; they could have figured the search skills out on their own.

*“The training was not helpful as I already knew how to search catalogues and databases before the training” (P9).*

*“It was useful but I did much work to learn, the library did not do much for me” (P8).*

#### 4.4.4.5 Improvement in using the librarian

Some participants explained that, after attending the training they would, in moments of despair, turn to the librarian for help.

*“I was fearful thinking I would never excel in the skills, but I learned to ask for help from the librarian and am now confident” (P14).*

*“I struggled a bit in the beginning because I did not listen more in class as I was uninterested. I then sourced more help from the library staff and have improved my search skills” (P7).*

*“I felt the training was useless until I started using the learned skills and with the help of the librarian I am mastering the skills and enjoying using the library” (P17).*

#### 4.4.4.6 Fear for the assessment test

The feeling about attending classes and writing assessments varied among students. P15 hated attending classes and doing practicals; P18 did not like writing the post-training assessments. *“I hated the assessment” (P12).* In contrast, P16 enjoyed the training and was glad that they were assessed after the training.

#### 4.4.5 Positive experiences during the training and afterwards when applying the skills

Participants were asked to share their views about the positive experiences they had during the training as well as when applying the skills after the training. They were responding to question 5 (Appendix H). The experiences shared relate to the following:



- (1) Moment of exploration
- (2) Increased knowledge on using information services
- (3) Wrong timing blamed for lack of positive experiences

The experiences are discussed under sections 4.4.5.1 to 4.4.5.3.

#### 4.4.5.1 Excitement at moments of exploration

It was an epiphany for some participants as they were starting to learn about libraries:

*“It was a moment of exploration for me, getting to learn about libraries; I liked it” (P4).*

*“It overlaid the environment of learning for us; we are no longer struggling” (P10).*

*“I found it interesting and cool; the skills are much simpler and easier to use now” (P2).*

*“This acquired skill saves us time because we can check if the book is available in the collection or not before physically looking for it” (P3).*

*“I appreciate the time given for training. I was amazed by the coverage of both print and online sources as we enjoy the use of both formats” (P18).*

#### 4.4.5.2 Increased knowledge on using information services

Through the training students gained more information on how to use services such as the OPACS, internet and so forth:

*“I appreciate the training now. We were ready with newly learned skills before starting with lectures” (P12).*

*“It took me time to master the classification system but I feel happy now that I can locate books using it. The library should not change the system” (P2).*

*“I learned how to use the classification and I loved the training although the trainer lacked confidence (P3).*

*“I can check availability of sources on the Open Public Access Catalogue (OPACs)” (P7).*

*“I learned that it was for my own good, I now know how to photocopy and print” (P6).*

*“I learned skills on how to use the catalogue for searching” (P5).*

*“I enjoyed being trained on the use of [the] catalogue, internet and reliable websites; now everything is efficient” (P1).*

*“We can use computers to search for books instead of browsing the shelves; this saves us time” (P8).*

*“It's easier for us to use computers to check if books are available, to check how many copies the library has and whether they are in the open shelves or reserve shelves” (P9).*

*“I love the classing system used to arrange books; it simplifies the finding of sources” (P13).*

*“I learned searching skills and how to locate books using shelf numbers” (P15).*

*“I learned referencing skills” (P5).*

*“We learned about referencing and can get assistance from the librarians” (P16).*

*“I am excited that I am able to apply the skills in our studies and in life” (P17).*

#### 4.4.5.3 Wrong timing blamed for lack of positive experiences

P11 blamed wrong timing for the fact that she could not say anything positive about her experiences after attending the training; they had so much to deal with and so much information to grasp. P14 had nothing to add.

#### 4.4.6 Negative experiences during the training and afterwards when applying the learned skills

Question 6 (Appendix H) was geared towards identifying participants’ negative experiences during the training sessions and afterwards when applying the taught skills. They noted the following experiences:

- (1) The size of the group being trained and insufficient time for training
- (2) Insufficient computers: a limiting factor
- (3) Library staffs’ lack of consideration for users

The negative experiences are explored in sections 4.4.6.1 to 4.4.6.3:

##### 4.4.6.1 Size of group receiving training and insufficient time for training

The size of the group was too huge and this posed a serious challenge for participants.

*“The training groups were too big; they should be divided into small ones for control” (P4).*

*“The training on referencing was too fast; we need more training and extended time” (P9).*

*“I was computer illiterate and therefore could not catch-up with the trainer’s speed” (P5).*

*“The allocated training period was too short; the librarian could teach important aspects of the training” (P12).*

*“The group was huge. I did not hear the trainer well nor did I understand fully” (P11).*

*“The training rooms were crowded, it was noisy and shy students could not engage with the trainer” (P15).*

*“The time was short. We need more training on how to use printers and photocopiers” (P17).*

##### 4.4.6.2 Insufficient computers: a limiting factor

Participants indicated that they are frustrated and discouraged to visit the library and to practice the skills they learned from the training because the library has limited computers.

*“We were told to use library computers but the computers are limited; we cannot always use the skills to the fullest and we wait in long queues” (P8).*

*“Limited computers waste searching time and reduce our interest in using the library and its systems” (P10).*

*“I get frustrated when I have to queue for computers, then I lose interest to use the library” (P18).*

#### 4.4.6.3 Library staffs’ lack of consideration for users

Some participants felt that library staff members were not taking them seriously.

*“Prior to our session, our other classes were cancelled and we were not informed” (P13).*

*“There was confusion with class bookings; classes were cancelled without us being informed and there was no one to attend to us” (P16).*

*“After the training I struggled getting to sources in the library; the library should have proper signage” (P6).*

Somehow some of the participants misunderstood the question to mean that they should express their negative experiences with regard to library services.

*“Some library policies puzzles me, for example, why should we only use reserve books for four hours. We were also not shown how to make copies” (P7).*

Lastly, P14 had no negative experiences to mention whilst P1 hated assessments and attending lectures.

#### 4.4.7 Improvements and changes recommended for SMU Library’s information literacy training

Question 7 in Appendix H offered participants an opportunity to suggest aspects of the training that could be improved to better the training. Their recommendations are discussed under the following headings:

- (1) Cutting the scope of the training sessions
- (2) Cutting the group size
- (3) Extending the training time
- (4) Improvement of the facilitation skills of the librarian
- (5) Including basic skills on Microsoft, copyright, photocopying and plagiarism
- (6) Follow-up, monthly and online training.

The suggestions are discussed under the above mentioned subthemes in sections 4.4.7.1 to 4.4.7.6:

##### 4.4.7.1 Cutting the scope of the training sessions

Students raised concern with regard to the scope or coverage of the training that was apparently huge.

This is supported by the following quotes:

*“The scope is too much for one session; increase the time and divide the groups” (P1).*

*“The training should be divided into parts, e.g. internet and catalogue be offered on different days”* (P2).

*“The scope of the training is huge”* (P12).

#### 4.4.7.2 Cutting the group size

Big training groups were a challenge as other students were said to have been uncontrollable and some were discouraged from participating or even asking for clarity in class. This could be detected in the quotes listed below:

*“Divide the groups”* (P1).

*“Classes should be broken down into small groups”* (P8).

*“The groups were noisy and uncontrollable, other students lost interest in the presentation as a result”* (P9).

*“The library should [do] follow-up trainings to small groups to encourage participation”* (P10).

*“Please minimise training groups and use more librarians”* (P14).

*“The library should divide students into small groups, and give more follow-up lessons to accommodate slow learners”* (P17).

#### 4.4.7.3 Extending the training time

The training sessions allocated for the training were reported to have been too short for the scope that was covered. The following quotes will support the reports:

*“Increase the time”* (P1).

*“The librarian was too fast because of time limit, more time should be allocated for training and follow-up training as well”* (P11).

*“More time is needed for the training”* (P12).

*“Extend training time”* (P15).

#### 4.4.7.4 Facilitation skills

Students suggested that there should be an intervention with regard to the librarian’s training skills. They said:

*“The trainer needs facilitation skills. He should make the training less theoretical but more fun and practical, and should not rush the presentation leaving slow students behind”* (P6).

*“The presenter should toughen up and take control of the group”* (P9).

Although there were much positive feedback, as noted in sections (4.3 to 4.5) libraries still need to ensure a team of trained trainers. Training skills for librarians were also widely stressed in the subject literature (Moyane, Dube & Hoskins, 2015; Ringle, 2014). The pressure on expectations from the trainer(s) stresses

the responsibility of the library to provide sufficient support to train all trainers to teach information literacy skills to students from diverse backgrounds often with very limited experience and skills in using computers, to manage classes, and to facilitate learning. It furthermore stresses the responsibility of the library to provide sufficient resources in terms of time slots, smaller classes, frequent training sessions, computers and WIFI.

#### 4.4.7.5 Including basic skills on Microsoft, copyright, photocopying and plagiarism

Students suggested that the library should offer more training on plagiarism, photocopying and printing— P4 was one such student. P5 felt training on copyright, referencing and Microsoft Office should be included and P6 also emphasised the need for training on photocopying.

#### 4.4.7.6 Frequent and online training

More training interventions should be implemented and online training explored. Students suggested that:

*“The library should enhance the training material by producing Step-by-step manuals or user guides with pictures and make them available online” (P7).*

*“We need follow-up training targeted at small groups to encourage participation” (P10).*

*“The library should offer space for students to use e-learning in the library” (P13).*

*“The library should offer monthly training” (P7).*

Students think the library should implement online training (P12, P13, P14 and P16).

The online training would supplement face-to-face training (P7, P13, P3 and P11).

*“The online training can be watched before the training and again before doing the practical test” (P16).*

*“Online training will accommodate slow students” (P3) and “it will also be easier and better for students with smart phones” (P14).*

Students need more functional computers (P15 and P16). They also need discussion rooms (P7, P15 and P16).

One participant (P18) felt that the training needed no improvements because most students knew nothing before the training anyway.

In general, when considering participants’ responses regarding their perceptions and feelings towards the training, it was noted that although some were uninterested, confused and overwhelmed during training, their attitudes were later changed positively when they realised the importance of training. They confirmed that the training was indeed needed and very helpful for their studies, their career and future

life. Most attested to the fact that they could now search and find information using varying information sources and systems. They also made mention that their searching was now easy and fast.

The above findings are interpreted in more detail in section 4.6.

#### **4.5 FINDINGS FOR THE INTERVIEW WITH THE LIBRARIAN FOR INFORMATION LITERACY TRAINING<sup>4</sup>**

The librarian responsible for information literacy training was interviewed to gain more detailed information on questions regarding the study site. The interview schedule is attached as appendix G – the discussed themes are covered in Questions 1 - 5. The questions covered:

- (1) The librarian's involvement with the training
- (2) Standards and policies guiding the SMU library training and whether they allow for assessments of attitudes towards training
- (3) Whether the librarian assesses information literacy skills and attitudes towards the training
- (4) The librarian's perception of students' attitudes towards training
- (5) The opinion of the librarian on the importance of understanding students' attitudes towards training.

Findings for the interview between the researcher and the librarian responsible for information literacy skills training for undergraduate students are discussed in sections 4.5.1 to 4.5.5. The interview was held on the 16<sup>th</sup> October 2015 in discussion room 118 of the SMU Library. It lasted for 25 minutes. An interview schedule (Appendix G) and an informed consent form (Appendix D) were handed to the librarian an hour before the interview. The librarian signed the informed consent before the interview. The researcher did not record the interview because the librarian indicated on the informed consent form that the conversation should not be recorded. The informed consent form is attached as Appendix D.

##### **4.5.1 Involvement with the training**

The first question (Appendix G) was about the librarian's involvement with information literacy training at the SMU library and the duration he had been involved. He is responsible for training new students in using the library efficiently and effectively. The aim is to ensure that they understand and know how to search the library computer catalogue and how books are organised and located on the shelves. The training also covers topics such as referencing and utilisation of the internet and databases to search for information in journals.

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<sup>4</sup> Sub-Headings in 4.3 – 4.6 are aligned with the question formulations in the three data collection schedules attached in this document as Appendices F, G and H.

#### **4.5.2 Standards and policies guiding the SMU Library training programme**

In the second question (Appendix G) the librarian was asked about the standards or policies that are used as guidelines for the SMU library's information literacy training.

He was not sure as to what standards or policies were used but indicated that the standards would have to do with ensuring that students learn different types of library information resources, their characteristics and how they are organised, retrieved and accessed.

A further question was asked to find out if the standards or policies allowed for assessment or consideration of students' attitudes towards information literacy. In response, he indicated that the standards do not allow for assessment of students' attitudes towards training.

#### **4.5.3 Assessment of information literacy skills and attitudes**

The third question (Appendix G) addressed the assessment of students' information literacy skills and their attitudes towards information literacy by the librarian.

Although students are assessed on the skills learned during the training – it seems as if this is the case from their responses – there had not yet been an opportunity for the librarian concerned to assess students' attitudes towards training. The librarian had only been employed in the information literacy skills training section for a year but he was also not aware of any assessment of student attitudes that may have been done in the past decade.

#### **4.5.4 Perception of the attitudes of students towards information literacy skills training**

The fourth question (Appendix G) enquired about the librarian's perception of students' attitudes towards the SMU library training.

In his observation, most students seemed bored, overwhelmed and uninterested during training, as a result– as also noted in the focus group findings – they were discouraged about visiting the library afterwards and they then did not practice the learned search techniques. Some visited the library only to search for books. Few students came to search for information on the internet and databases and they were highly dependent on the librarian instead of searching for themselves.

#### **4.5.5 Opinion on the importance of understanding students' attitude towards training**

The last question (Appendix G) required the librarian's opinion on the importance of understanding students' attitudes towards information literacy training in addition to assessing the skills they gained during training.

With excitement and enthusiasm he indicated that it is very important that students' attitudes are assessed and understood in order for one to determine whether they are learning from the training, what and how they want to be taught, whether they want to learn or whether some of them are just attending because they are enrolled for the English course and the training is compulsory for them as it contributes to the marks for the course.

Overall, this interview was fruitful as it uncovered issues such as those related to standards, scope and the importance of assessing students' attitudes towards the information literacy training as well as the information literacy itself. If taken into consideration and followed-up the discussed issues can lead to answers needed for the improvement of the training.

#### **4.6 TRIANGULATION**

The reason for triangulating was to strengthen the results of the research (Yin, 2009: 114). The discussions in 4.6.1 to 4.6.8 show a very strong relationship between the reported findings for the questionnaire, focus group interviews and the individual interview with the librarian as well as with the literature review.

In this section the researcher discusses and analyses the findings of the study and also reports on the lessons learned from combining qualitative and quantitative methods to study the extent to which the information literacy skills training offered at the SMU Library has affected students' attitude to the training and their use of information retrieval systems.

Triangulation was used to gather qualitative and quantitative data concurrently. Data collection was done using different methods: questionnaire (Appendix F), focus group interviews (Appendix H), an individual interview with the librarian (Appendix G) and literature reviewed. Detailed information is available in Chapter 4 in section 4.2 and illustrated in Table 4.2. Triangulation was done to strengthen the weaknesses that could have arisen from using only one method. The empirical findings are reported separately in sections 4.3 (Questionnaire), 4.4 (Focus groups) and 4.5 (Individual interview) in the form of tables and figures supported by factual qualitative notes. Findings from the literature are reported in Chapter 2. Findings were then analysed and compared in this section to check for differences and similarities to confirm the findings. The results will inform the suggestions and recommendations for the study.

Although the three methods of data collection took place at the same time, when analysing it preference was given to the interview with the librarian followed by focus groups interviews and lastly, the questionnaires.



The use of multiple sources of evidence allowed the researcher to study a wider range of historical and behavioural issues (Yin, 2009: 115). The comparison of findings between the quantitative, qualitative and literature review are presented under the nine themes:

- Use of information literacy standards as guidelines for designing information literacy skills training
- Importance of assessing students' information literacy skills and their attitudes towards training
- Opinions on the scope or coverage and the style of the training
- Perceptions of the outcomes of the training
- Changed attitudes as a result of the training
- Improved use of the library and its systems
- Overall opinion on value of the information literacy skills training programme
- Value of learned skills for various reasons
- Factors influencing attitudes towards the training and use of resources

#### **4.6.1 Use of information literacy standards as guidelines for designing information literacy skills training**

The importance of knowledge and adoption of standards was emphasised in this study as well as in the literature (Knapp & Brower, 2014). Oakleaf (2014) says standards can be used when addressing students' perceptions of information literacy skills training; health sciences librarians should consider using them.

#### **4.6.2 Importance of assessing students' information literacy skills and their attitudes towards training**

SMU students' skills were assessed in the form of a test; no assessment has ever been done before with regard to attitudes.

Health sciences librarians should keep assessing first year students (Dao *et al.*, 2011) and continue reassessing information literacy training (McClurg *et al.*, 2015), in order to identify the gaps in students' knowledge (Bundy, 2002: 130; Orr, Appleton & Wallin, 2001: 457; Salisbury & Karasmanis, 2011: 43).

Students' and faculty's attitudes towards information literacy training offered by the library should be assessed too (Al Awadhi & Rehman, 2012: 358). The current study also recommends that students' attitudes be assessed and understood in order to ascertain if they are indeed learning or acquiring new information literacy skills even though some students hinted (see section 4.4.4.6) that assessments unsettle them.

#### **4.6.3 Opinions on the scope or coverage and the style of the training**

Research has shown that sometimes students are unsatisfied with the scope and style of information literacy training. Al Awadhi and Rehman (2012: 359) revealed training that was outdated, covering irrelevant topics in a fast changing world. They (Al Awadhi & Rehman, 2012: 355) thus advised that the training scope be revised occasionally to include new developments. Sproles, Detmering and Johnson (2013: 407) recommend regular assessment of training so that restructuring can be done to align the scope with training outcomes. The scope of training was not covered in the interview schedule with the librarian (Appendix G). Opinions were, however, collected from the students. Their views are in line with findings for students participating in studies by other researchers where a diversity of opinions often featured.

In Conway (2011; Al Awadhi & Rehman, 2012) students said the scope was enough. In responses for the focus group interview some participants said the scope was not good enough. Others were satisfied with the scope, while others felt that the scope was not good or too big for one session. In general the presentation style was considered great, very good and to the point. A few felt that there was always room for improvement.

#### **4.6.4 Perceptions of the outcomes of the training**

According to Bhatti (2010), Fallon and Breen (2005) and Maduako (2013) students often regard information literacy training as essential to their academic life. They need information literacy skills to access information (Al Awadhi & Rehman, 2012). Information literacy training will be used in everyday life (Scales & Lindsay, 2005).

As reported in the feedback for the questionnaire (section 4.3.3) participants learned how to search the catalogue, internet and databases with ease and improved confidence. Many are motivated to use the library, can avoid plagiarism and can now save time and effort in finding information. In the focus group interviews (section 4.4.4.3) participants noted that they gained skills on searching for resources easily, and that they had an increased awareness of information resources and how to find them.

#### **4.6.5 Changed attitudes as a result of the training**

Chen's (2011) study revealed that information literacy training can shape user attitudes, foster positive thinking, and encourage use. The same study also noted an increase in user satisfaction after the training.

Detlor *et al.* (2011) and Julien and Boon (2004) also regard information literacy skills training as a transformer of attitudes in students. According to Al Awadhi and Rehman (2012) students are generally happy about the benefits of the training and, as a result of information literacy programmes, some

students even develop an interest in attending computer courses. The latter was also found with two participants from this study (section 4.4.7.5) who noted interest in training on Microsoft Office.

Scales and Lindsay (2005) noted that students' attitudes toward information literacy were found to vary but nevertheless could still be used to develop information literacy training further. Students' perceptions towards information literacy training are complex and different (Scales & Lindsay, 2005).

Findings of this study were similar; some participants were sceptical, confused and unsure about the training initially but found value in it later and, as a result they now enjoy using the skills to find information. The SMU students' perceptions about the training differed even though they attended the same training, with the same scope, trained by the same trainer, at the same venue and time. To some the training was of value; they learned how to find their way in the library and how to use library services and systems. To some the same training was irrelevant and nothing useful was learned from attending it. The students who found the training interesting and valuable learned some tips and shortcuts for easier and faster searching – they can now search for books with ease and locate them without stress. According to the training librarian, students often looked bored, overwhelmed and hardly interested during training.

#### **4.6.6 Improved use of the library and its systems**

According to Julien *et al.* (2009) a successful information literacy training programme should improve students' understanding of search skills and change their attitudes towards effective and efficient use of information resources. The skills gained should enable them to improve their tests and assignments, as well as academic grades. According to Brettle (2003: 3), students found the training valuable because their skills were improved. Al Awadhi and Rehman (2012) also learned that training made a difference in students' skills and capabilities needed to effectively utilise the library. In the current study some students reported that the training increased their knowledge of information services (section 4.4.5.2).

As a result of training, students enjoy improved use of the library and its services (Detlor *et al.*, 2011; Julien & Boon, 2004) such as the internet and library catalogue (Chen, 2011; Janke, Pesut & Erbacher, 2012). They engage with library staff better (Emmons & Martin, 2002; Ivanitskaya *et al.*, 2012) and have improved evaluation skills (Emmons & Martin, 2002; Janke, Pesut & Erbacher, 2012). Their confidence has improved (Julien & Boon, 2004; Mittermeyer, 2005) and so have their search skills (Emmons & Martin, 2002; Julien & Boon, 2004; Julien, 2009). They have reduced the time and effort for finding information (Detlor *et al.*, 2011) and have improved their grades (Detlor *et al.*, 2011) and academic writing skills (Detlor *et al.*, 2011). They also have improved knowledge, understanding and use of sources (Dao *et al.*, 2011; Detlor *et al.*, 2011, 580). They gained IT and investigative skills (Issa, Blessing & Daura 2009) and as a result they can formulate search strategies and select useful databases better (Maggio & Kung, 2014: 184).

For this study, SMU students who completed the questionnaire (section 4.3.2.5) ranked the training library tour, library services and registration, information on the library's expectation of users, referencing, how to use books, use of journals, use of audio-visual materials, caring for books, copyright, searching the computer catalogue, finding books on the shelves and searching the catalogue, internet and databases very valuable for them. In the focus groups participants noted that they had learned easy strategies for journals as well (section 4.4.4.3). What participants noted are in line with the intention of the training which is to teach them the necessary searching skills to enable them to search, find, locate, evaluate, access and use information (section 4.5.1).

#### **4.6.7 Overall opinion on the value of the information literacy skills training**

Kumar and Phil (2009) suggest that information literacy training should be used as one of the strategies to attract users by providing them with relevant skills as well as the knowledge and attitudes that will boost their knowledge and use of the library and its resources. In Dao *et al.* (2011) students reported that information literacy skills learned were useful in different cases and they wished that they could have learned the skills when they started with their studies. Students in the Al Awadhi and Rehman (2012: 359) study felt that the course would have been more helpful if they had done it in their first year. In this study one of the students added by recommending that the training be made compulsory in the first year of undergraduate study (section 4.4.4.2).

Al Awadhi and Rehman (2012: 355) highlighted that information literacy skills training make a significant difference in students' skills and capabilities. Although there were varied opinions in this study about the value of the training, an overall total of 89% of the respondents for the questionnaire attested to the training as being valuable and interesting. In the focus group interviews (section 4.4.1) a number of respondents also found the taught skills valuable. From the training librarian's point of view the training was intended to be valuable for students to cope with their first year studies and research.

#### **4.6.8 The value of learned skills for various reasons**

Feedback from the questionnaires showed that a considerable number of students recognised the value of the training. This applied both for their studies and future careers. The finding is similar to findings reported by Detlor *et al.* (2011: 572) which stated that information literacy training is critical for students' academic, career related and lifelong learning. From the questionnaires most of the participants (96%) reported that the training was valuable, relevant and useful for their studies, career development and future. Some focused on the value of skills for academic purposes, personal information and everyday life, while others felt that they learned new research skills (section 4.4.1.3). For some, the training laid a foundation for their tertiary studies. Although first year studies can be tricky it seemed from both the questionnaire and the focus group interviews as if the library and information literacy training prepared students with the knowledge to easily adapt to the library and the university environments.

#### 4.6.9 Factors influencing attitudes towards the training and use of resources

No training programme, including information literacy training, is immune to challenges. The challenges and gaps need to be identified, studied and managed to prevent them from affecting the training (Moyane, Dube & Hoskins, 2015: 30). Some of the challenges as identified by Moyane, Dube and Hoskins (2015: 32) include uninteresting, irrelevant, unsuitable and inappropriate timing. For the current study lack of prior technological and library background, lack of enough supporting equipment (such as enough computers in the library), style of training, size of groups, students' lack of interest and insufficient time allocated for the training were some of the gaps identified.

##### 4.6.9.1 Prior training – technological and library background

Many students reported that they were from disadvantaged areas and thus had limited or no computer and search skills. The same challenge was noted with studies on information literacy training in other developing countries (Diep & Nahl, 2011; Issa, Blessing & Daura, 2009). Other studies also reported that first year students lacked information literacy skills and search strategies required to cope at tertiary level (Mittermeyer, 2005; Dao *et al.*, 2011). Baro, Seimode and Godfrey (2013) assume that the challenge was caused by lack of well-equipped school libraries and computer labs.

For this study, students noted in all the focus groups that some came from rural areas with no exposure to computers and libraries and, as a result, they were bored and overwhelmed during training.

##### 4.6.9.2 Confidence

Confident students were reported to have a clear picture of what is expected (Dao *et al.*, 2011). In a study by McClurg *et al.* (2015) students' confidence in search skills increased because they consulted the librarian. A study by Detlor *et al.* (2011) showed that confident students want to learn more about services; they ask for help from the librarian, engage with library workers and have investigative skills. In the focus groups, a less confident participant reported that he/she couldn't learn because of lack of confidence.

Confident students coped well with the information literacy training and those who had earlier exposure to information literacy saw no need for the training. From this study, many students reported that they gained confidence through the information literacy training: 87% participants gained confidence in searching the catalogue, 89% experience increased confidence in using the internet, whereas 86% reported improved confidence in searching databases (section 4.3.3.1).

##### 4.6.9.3 Supportive resources

Participants in Diep and Nahl's (2011) study reported that sometimes there is a misperception with regard to outcomes of the information literacy training, the support gained from librarians and faculties and availability of resources such as computers.

For this study some participants reported problems with a limited number of computers in the library and an outdated collection (section 4.3.3.2). Some students mentioned that limited resources can limit interest in using services and exploring newly acquired skills (section 4.4.6.2).

#### *4.6.9.4 Huge groups*

In the findings for this study, too large groups for training sessions were reported as a serious problem (section 4.4.2, section 4.4.6.1). Al Awadhi and Rehman (2012: 360) also found that large numbered classes impacted negatively on achievement of training objectives and targets. To keep the sessions under control participants suggested that group sizes should be much smaller (section 4.3.3.2).

#### *4.6.9.5 Students' lack of willingness and interest in the training*

Most students showed lack of interest in the course since it was not their main course (Maduako, 2013: 12). In this study, the librarian mentioned that some students were hardly interested in class and as a result, they learned very little. Being uninterested in class led to students not improving their search skills (section 4.4.3, section 4.4.4.2).

Interested students, however, participated in class; they learned new skills and could become more self-sufficient (section 4.4.3, section 4.4.4.2). Detlor *et al.* (2011) can attest to this, willing students reported behavioural changes following the training, they wanted to learn more about the library and its resources and they have also increased student- librarian engagements.

#### *4.6.9.6 Insufficient training*

According to Fallon and Breen (2005: 182), the common practice where students are trained for one or two hours at the beginning of the academic year is unproductive as it offers no context for students' skills and leaves them unmotivated. Revisiting findings for this study (section 4.4.7.3) it seems that the training time was too short, and that students need frequent training to compensate for the little time given for the current training (section 4.3.3.2, subsection (a)).

#### *4.6.9.7 Training skills*

The literature analysis showed that librarians are faced with a challenge with regard to teaching capabilities, confidence and readiness to take up the changing roles of being transformed from information providers to teachers (Moyane, Dube & Hoskins, 2015: 32; Ringle, 2014). They should be well-informed in teaching, teaching plan and in supporting changing student needs (Ringle, 2014).

The focus groups for this study (section 4.4.2, section 4.4.2.3) revealed that participants set a high value on facilitation and presentation skills, and especially on a welcoming attitude (section 4.3.3.2).

#### *4.6.9.8 Students preferred style of training*

Several participants noted that they disliked attending classes and writing post-training assessment tests (sections 4.4.4.6, section 4.4.6.3). Some would prefer an online training programme as solution; it would supplement the much hated face-to-face training (section 4.4.7.6). An online training program would accommodate slow students and provide an opportunity for self-study (Ivanitskaya *et al.*, 2012). This would be helpful because Millennials' view on the use of technology is positive; they learn well when training is offered in their preferred style which is online in this case (Manuel, 2002). Millennials refer to the Nintendo Generation or Generation Y, contemporary 17 to 19 year olds (Manuel, 2002). They were born between 1982 and 2004 and are associated with technology and social media (Investopedia, LLC., 2017: online).

#### *4.6.9.9 Students' state of mind during training*

The SMU training librarian as well as librarians in Fallon and Breen's study (2005: 182) reported that students were overwhelmed and distracted by the information covered in the training. From the questionnaire 67% of participants experienced negative emotions: they were overwhelmed, discouraged, uninterested and bored (section 4.4.3). However, they gradually gained interest and opened up for learning. Some students were bored while others did not learn new skills because of distraction (section 4.4.3). The training librarian also reported that most students did not learn search strategies because they were bored or overwhelmed during training (section 4.5.4).

#### *4.6.9.10 Lack of searching and retrieval skills*

Unfortunately just as in Maduako's (2013: 4) study, some students still reported being ignorant and lacking interest in the use of resources. Moyane, Dube and Hoskins' (2015: 36) study picked up a challenge that librarians face with regard to students' lack of searching and retrieval skills. Issa, Blessing and Daura (2009) reported that, although the library had electronic resources, most students lacked the skills to access them. They use more printed sources (Wahoush & Banfield, 2013). In this study, some students also indicated that they found the training useless and would not use the search skills nor the library as they received slides, lecture notes and a list of prescribed books from their lecturers (section 4.4.3, section 4.4.1.1).

The training librarian attested to this; based on his observation, the students used books more, they lacked interest in doing self-searches and most still depended on the librarian for internet and database searches.

#### 4.7 SUITABILITY OF THE FRAMEWORKS USED IN THE STUDY

As mentioned in section 2.6 this study was guided by Lindauer's framework as adapted by Detlor *et al.* (2012), as well as Wilson's (1996) general model (figure 2.1) of information seeking behaviour. An abridged version of Lindauer's model (figure 2.4) inspired the empirical component and the development of instruments for data collection, whereas Wilson's model was used to study the intervening variables (demographic, psychological and environmental issues), activating mechanism (self-efficacy) and information- seeking behaviour (active and ongoing search) of participants.

In this study, information seeking behaviour refers to students' use of the SMU Library and its services, such as the computerised catalogue, internet and databases, as well as printed and electronic information resources. They also refer to the way in which they search and find information to respond to their information needs. Detlor *et al.*'s (2012) model was also relevant for the study since it studied aspects of information literacy training that are relevant to respond to the questions in the study. Brief results are presented in figures 4.1. In figure 4.2 a summary of results is also presented under various variables of Wilson's model.



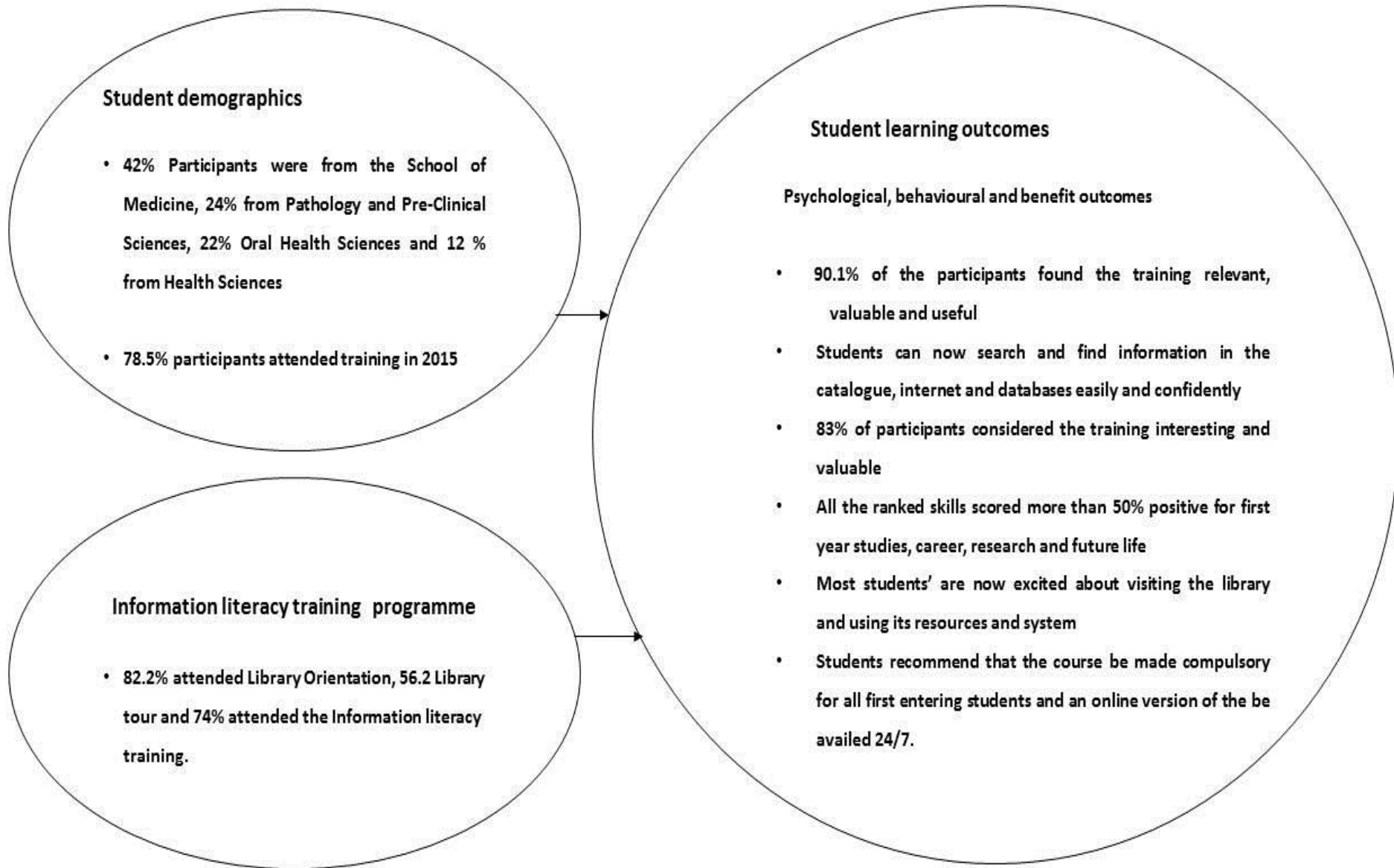


Figure 4.1: Lindauer's framework adopted in Detlor *et al.* (2012) contextualised by study findings

The questions addressed were around student’s demographics, information literacy training programme and student learning outcomes which entailed psychological, behavioural and benefit outcomes.

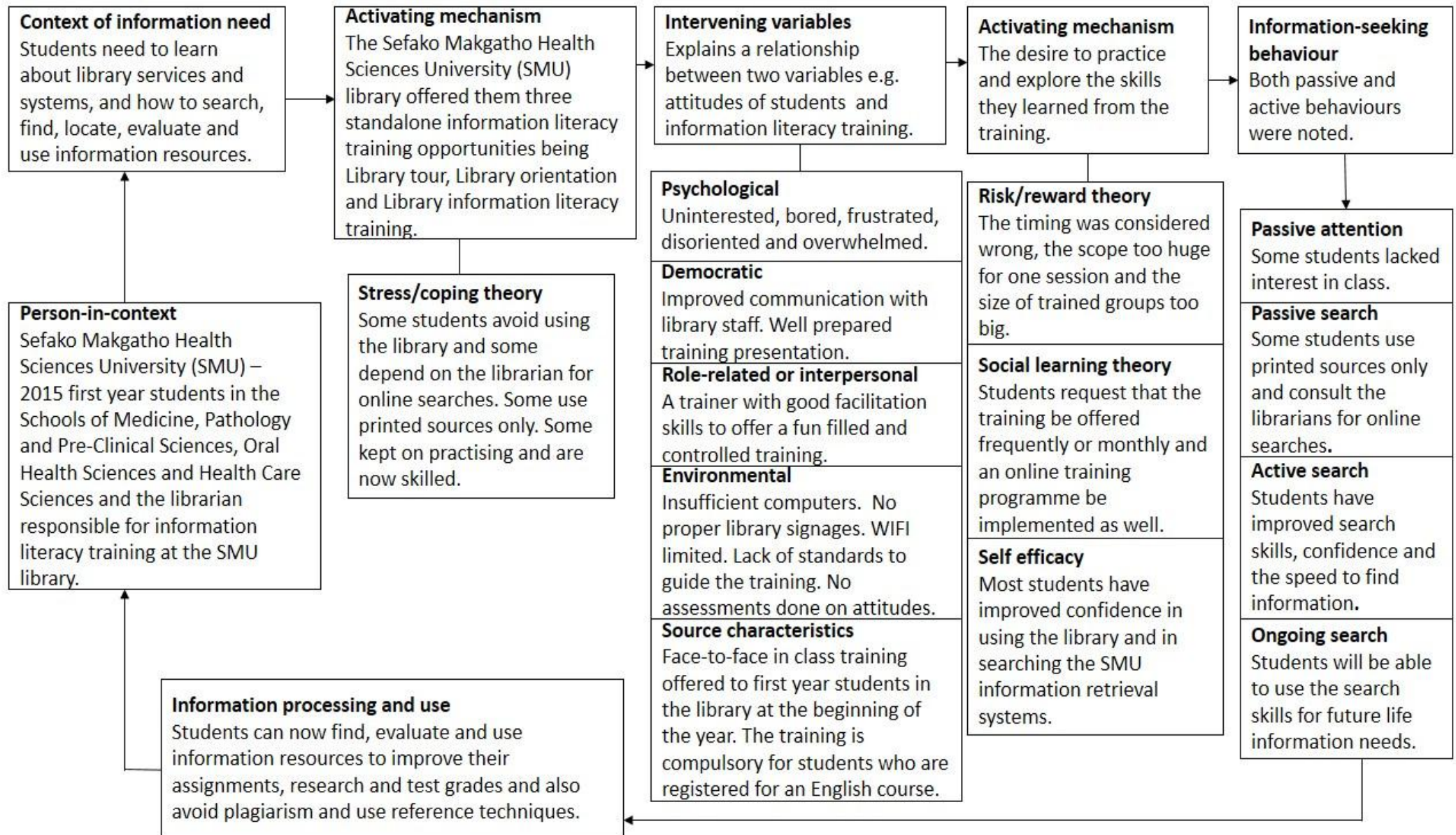


Figure 4.2: Wilson (1996) model contextualised by study findings

## 4.8 CONCLUSION

In this chapter the findings from all three methods of data collection, their analysis and triangulation were, provided. In general the findings suggest that students find the information literacy skills training valuable, useful, relevant, interesting and needed for their first year studies, future career and everyday life. Some students, however, did report the training as irrelevant, boring and a waste of time, which implies that there are gaps that need to be covered to improve the training. Recommendations and suggestions for future research are presented in the next chapter.

The need for investigating the topic under study was essential and the report will add to the body of knowledge that already exists on students' attitudes towards information literacy skills training. The results will theoretically contribute to literature on the assessment of information literacy skills training and perceptions of students towards the training. The findings will also be used to generate recommendations for improvement of the SMU library's information literacy skills training programmes.

## **CHAPTER 5: SUMMARY OF FINDINGS, RECOMMENDATIONS, SUGGESTIONS FOR FURTHER RESEARCH AND CONCLUSION**

### **5.1 INTRODUCTION**

This is the final chapter and comprises a summary of the study, main findings of the study, and the research methodology that was used. Recommendations to improve the information literacy programme are reported and recommendations for practice, theory and further research. It also provides an overall conclusion of the study.

### **5.2 SCOPE OF THE STUDY**

This study was a case study of the Sefako Makgatho Health Sciences University (SMU) Library. It assessed the attitudes of undergraduate students towards information literacy training. The focus was on 2015 first year students.

The main research problem was: To what extent does the information literacy skills training offered at the Sefako Makgatho Health Sciences University (SMU) Library affect the students' attitude to information literacy training and using (use of) information retrieval systems?

The following sub-problems were addressed to respond to the main problem.

- What is the scope of information literacy training at SMU Library with regard to information retrieval systems?

The question was answered from inspection of the study site.

- How can the impact of information literacy training be assessed with special reference to attitude?

The question was addressed by the literature analysis.

- What has been reported on attitudes to information literacy training?

The question was addressed by the literature analysis.

- How does the information literacy training at SMU library affect first year students' attitude towards information literacy and the use of information retrieval systems?

The question was answered by the empirical component supported by a literature analysis.

- Which factors influence the attitudes of students towards information literacy training and the use of information retrieval systems?

The question was answered by the empirical component supported by a literature analysis.

The findings will be discussed briefly in section 5.3.1.1 to 5.3.1.5.

### 5.3 SUMMARY OF HOW THE STUDY WAS CONDUCTED

The table below (Table 5.1) is a summary of how the study was conducted. It includes participants and sample, the institution used as a case study, research methods and approaches used and data collection methods. The table also shows the number of participants, ethical issues, period of study and how the researcher adhered to confidentiality and ensured validity and reliability of the study.

<b>Study conducted</b>	This was a case study on an assessment of the attitudes of undergraduate students towards information literacy training offered by Sefako Makgatho Health Sciences University (SMU) Library.
<b>Participants and sample</b>	The target was 2015 first year students in the department of MBCHB (Medicine), BSc (Pathology and Pre-Clinical Sciences), BDS (Oral Health Sciences) and BCur and BPharm (Health Care Sciences). The researcher had easy access to all the participants, so a purposive or convenience sampling was best suited for this research.
<b>The institution used as case study</b>	Sefako Makgatho Health Sciences University Library
<b>Research methods</b>	Mixed methods
<b>Research approach</b>	Case study
<b>Methods of data collection and number of participants for each instrument</b>	<p><b>Questionnaire (Appendix F)</b></p> <ul style="list-style-type: none"> <li>• Semi-structured electronic questionnaire.</li> <li>• Comprised of eight closed questions and one open question.</li> <li>• 394 were distributed, 225 were returned, six were spoiled and 219 were analysed.</li> </ul> <p><b>Focus group interviews (Appendix G)</b></p> <ul style="list-style-type: none"> <li>• Four groups with 18 participants.</li> <li>• The interview schedule comprised seven questions.</li> <li>• Interviews were held on 15, 20, 21, and 28 October 2015.</li> </ul>

	<b>Librarian's interview (Appendix H)</b> <ul style="list-style-type: none"> <li>• The interview took place on 16/10/2015</li> <li>• The interview schedule comprised five questions.</li> </ul>
<b>Ethical clearance issues adherence</b>	An ethical clearance approval letter was provided by the Department of Information Science at the University of Pretoria (the degree-granting institution) on 10 September 2015. The Sefako Makgatho Health Sciences University, Research Ethics Committee (SMUREC) permission letter was received on 01 October 2016.
<b>Period of the study</b>	The study was conducted from January 2015 to December 2016.
<b>Confidentiality addressed</b>	A declaration letter was signed by the researcher before conducting the research (Appendix C)
<b>Validity and reliability</b>	Data analysis by using triangulation is in-depth and more likely to be valid and reliable.

**Table 5.1: Summary of the study**

### 5.3.1 Research question and sub-questions of the study

In this section the researcher provides a summary of answers to the sub-questions outlined in Chapter 1, section 1.3.

#### 5.3.1.1 *What is the scope of information literacy training at SMU Library with regard to information retrieval systems?*

The librarian reported that the training covered how to search the library computer catalogue, internet and databases, searching for information in journals, how books are organised and located on the shelves and reference management.

#### 5.3.1.2 *How can the impact of information literacy training be assessed with special reference to attitude?*

Continuous study of students' and faculty's attitudes towards information literacy training programmes should be done, in order to analyse their perceptions on the outcomes of information literacy training programmes (Al Awadhi & Rehman, 2012).

#### 5.3.1.3 *What has been reported on attitudes to information literacy training?*

The following are some of the important reports in the literature on attitudes to information literacy training:

- Attitudes determine whether skills will be utilised (Noe, 1986).

- Students' perceptions towards information literacy training vary and their needs differ from the academic environment they enrol in (Hartmann, 2001).
- There is not much research on students' perspectives about information literacy training (Hartmann, 2001).
- Students' attitudes towards information literacy training are diverse, complex, and distinct but yet identifiable (Scales & Lindsay, 2005).
- Attitudes can be measured and used to develop information literacy training further (Scales & Lindsay, 2005).
- Training had improved students' attitudes and confidence towards use of resources, the need to use online resources, the librarian's knowledge and the library (Detlor *et al.*, 2011).

#### *5.3.1.4 How does the information literacy training at SMU Library affect first year students' attitude towards information literacy and the use of information retrieval systems?*

The findings of the study (questionnaire, focus group and individual interviews) revealed that overall, the training affected above 80% of the participants' attitudes towards the information literacy training and use of information retrieval systems positively.

For instance, in section 4.3.3.1, participants reported that, as a result of the SMU library training, 90.2% participants improved skills for searching the catalogue, as were the internet search skills for 87%, and database searching skills for 86%. Participants who gained confidence in using the catalogue were 87%, 89% increased confidence in using the internet, whilst 86% were happy about their improved confidence in using databases. Above 80% of the participants were excited that their ability to find information in less time and effort had increased.

Participants in the focus group interviews acknowledged the value added by the information literacy training for their future life, their career and everyday life. They said that the training had increased their awareness of where and how to find information. The training had also increased their need to use the library and its information retrieval systems.

The librarian reported that some students became interested in exploring the skills learned and went further to seek clarity or assistance from the librarian.

### 5.3.1.5 Which factors influence the attitudes of students towards information literacy training and the use of information retrieval systems?

This section summarises the factors identified in the study as having an influence on students' attitudes towards the SMU Library's information literacy skills training and use of its information retrieval systems.

- **Personal emotions**

Some students indicated that the above factors, if experienced during training, can discourage and lead one into losing interest in using the skills, library and its services and systems.

- **Learning skills**

Willing students enjoyed the training and learned new skills. Even those who struggled to follow in class went further to consult the librarian for clarity and more one-to-one training was provided. They practiced the search skills on the catalogue, the internet and databases and to improve search skills and use of the system and services.

- **Poor experience in information technology and library services**

This phenomenon was found to have scared students from exploring and using the library services and systems. These students reported that they struggled to cope in training and when doing searches later.

- **Training**

Students need a presenter with good facilitation skills, small-sized groups, extended time, frequent training and online mode of training and assessment.

- **Availability of computers**

Students indicated that queuing for computers and services such as photocopying and printing is a turn-off. They needed more reading/discussion space and WIFI. They felt that training should only be offered on services that are readily available for immediate use.

- **Signage** to direct users in the library.

- **Attitudes of library staff**

Library workers should be professional and approachable for students to seek help on search skills for the catalogue, internet, databases and other information systems and services.

- **Classification System or shelf numbers**

The system was complex in the beginning but became easier and simple with practice.

### 5.3.2 Meeting the objectives of the study

The study met all the set objectives which were to



- offer SMU's 2015 first year students and the librarian responsible for information literacy skills training an opportunity to express their perceptions and feelings about the SMU library's information literacy skills training programme and the use of information retrieval systems
- identify possible gaps in the SMU library's information literacy skills training, and aspects of the training that influence the attitudes of students positively
- determine barriers that students experience in independently and effectively utilising library services and systems.

These are discussed in 5.3.2.1 to 5.3.2.3

#### *5.3.2.1 Opportunity for students and the librarian to express their perceptions of and feelings about the SMU Library's information literacy skills training programme and the use of information retrieval systems*

The researcher was able to gather the perceptions of and feelings towards the training of students and the librarian responsible for information literacy training at SMU Library by analysing their responses for the questionnaire, the focus group and individual interviews.

#### *5.3.2.2 Identifying possible gaps in the SMU Library's information literacy skills training*

This objective was also met. Participants identified the following:

- The timing of the training was wrong.
- The size of groups being trained was too large and needed resizing to maximize participation.
- The scope was too wide for the time allocated for training.
- There was no follow-up training to accommodate slow learners and those with little or no prior-technology and library background.

Some students pointed out that they were technologically adept and thus would prefer online training and online assessment as opposed to a one day face-to-face training and a written test.

Some students mentioned that they needed basic training on topics such as plagiarism, referencing, copyright law, photocopying and printing, and Microsoft Office.

#### *5.3.2.3 Determining barriers that students experience in independently and effectively utilising library services and systems.*

Participants were asked to identify the barriers experienced during training and later when attempting to use the services independently and effectively. This objective was responded to as part of the factors that

influence participants' attitudes towards the training in the use of the library systems (see section 5.2.1.5). This objective was met as well.

The researcher is content that the study has resolved the problem and sub-problems and also met all the objectives that were set in Chapter 1.

#### **5.4 LIMITATION OF STUDY**

The study targeted only one institution; the results might have differed if the researcher had included case studies of more than just one academic library.

Some participants misunderstood question 9 (Appendix F - Questionnaire) as “provide input on how to improve the SMU library services”, while the question was aimed at attracting input on outcomes of the information literacy training. Responses thus had to be divided into two subheadings: (a) outcomes of the training and (b) improvement of the library services. This could have been avoided if the researcher had conducted a pilot study before collecting data.

The timing for data collection was wrong as students were busy with exams; the response rate and feedback might have been different if it was done when participants were more relaxed.

#### **5.5 VALUE OF THE STUDY**

This section reports on the value of the study for both practice and theory.

##### **5.5.1 Value of the study for the practice**

The importance of assessing attitudes towards library services including information literacy training was stressed in literature, by students and the librarian throughout the study. As pointed out by the librarian, this study is very important because it offers the library an opportunity to assess whether the training is valuable to students, what benefits students gain from it and how they feel about the training. The findings of this study will also assist the librarian to adapt the training programme in order to better accommodate the information needs of the students.

### **5.5.2 Theoretical values of the study**

This study will add to the very limited body of knowledge on the assessment of information literacy training, the literature on the assessment of students' attitudes towards information literacy training and literature on information literacy training in academic libraries/institutions of higher learning.

## **5.6 EVALUATION OF THE RESEARCH DESIGN USED**

### **5.6.1 Positive aspects of the research design used**

- Qualitative and quantitative data were gathered.
- The researcher was able to find some agreement with regard to participants' views and to validate results of the questionnaire with that of the focus group and individual interviews.
- Qualitative methods were used to broaden findings for issues that were lightly dealt with in the quantitative research and to check reliability and increase validity of the results. Studying from different perspectives gave a better understanding of different aspects of the training.
- The weakness of one tool was strengthened by the use of another tool(s); for example, some participants left some questions in the questionnaire unanswered or they wrote N/A – with the focus group and the librarian's interview schedules, all the questions were fully responded to and follow-up questions asked for clarity. Face-to-face interviews allowed the researcher to see the facial expressions of participants when responding to various questions.

### **5.6.2 Drawbacks of the research design used**

- Triangulation can be costly and time consuming.
- More time is used when analysing three sets of results than when analysing data for one research tool.
- More time and cost is also required for statistical and factual comparison.

## **5.7 RECOMMENDATIONS**

The theoretical and practical recommendations of the study are addressed in this section.

### **5.7.1 Recommendations for practice**

Based on the feedback from participants the following practical recommendations can be made:

- Continuous restructuring of training to adapt to the ACRL standards and to accommodate new trends in the practice.

- Improve the quality of the training by equipping library workers with the necessary expertise required for training facilitators and to cater for the changing needs of students and the faculty.
- Continuous assessment of information literacy training programs should be done to offer students an opportunity to voice their views, experiences and perceptions with regard to the training in order to improve it.
- The library should design an online training, online how-to-guides/manuals with pictures and an online assessment tests in favour of the Millennials they serve.
- Faculty-library relations should be improved to determine faculty's expected outcomes of the training.
- Frequent training and basic computer training to accommodate students from less advantaged backgrounds should be done.
- Make the information literacy training programme compulsory to all first year students.

### **5.7.2 Recommendations for theory**

- Continuous studies on the assessment of students' information literacy training and their perceptions towards training and services should be done to add to available literature.
- More studies should be done in line with the application of information literacy standards in health sciences libraries as well as self-efficacy and affordance theories.

### **5.7.3 Recommendations for further research**

The following are suggested for further studies:

- An assessment of first year students' attitudes towards information literacy training: the case of Gauteng/South African university libraries.
- A follow-up on students' changed attitudes towards information literacy skills training (this study can be done using the same focus group participants and the librarian that were used in the current study)
- Perceptions of SMU academic staff members (faculty members) towards information literacy training provided by the library to their students should be addressed.
- An audit of SMU's entering/first year students' information literacy training needs (prior to and after receiving the information literacy training) should be conducted.

## 5.8 CONCLUSION

In conclusion, participants were able to determine the importance of training in different aspects of their studies, career and everyday life, the gaps that needed to be addressed and the barriers impeding students from utilising learned search skills and information retrieval systems effectively and independently. Students and the librarian had the opportunity to articulate their perceptions of and feelings towards the training provided and its assessment. In all four target focus groups, participants had varied perceptions about the training. Some found the training valuable whilst some didn't. There was no consensus between participants in each group.

This study helped to reveal negative factors that need to be addressed to ensure a more effective service to first year students of SMU. The recommendations made by participants should be considered to improve the training and to better meet students' needs and faculty's expectations of the training.

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<sup>5</sup> The numbering is typed in exactly as it appears on the article 001-005

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## APPENDIX A: Ethical clearance letter (University of Pretoria)



UNIVERSITEIT VAN PRETORIA  
UNIVERSITY OF PRETORIA  
YUNIBESITHI YA PRETORIA

Enquiries : Dr Marlene Holmner  
Tel. nr. : +27 (0)12 420-5215  
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E-mail : Marlene.holmner@up.ac.za  
Office : IT 6-43

Faculty of Engineering, Built  
Environment and Information  
Technology  
School of Information Technology

2015-08-10

### ETHICAL CLEARANCE FOR MMAKGOSHI REETSENG

**Dissertation Title: An assessment of the attitudes of undergraduate students towards information literacy training: Sefako Makgatho Helath Sciences University (SMU) library as case study**

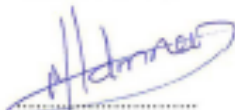
To whom it may concern:

This is to confirm that the Research Committee of the Department of Information Science approved the application by Mmakgoshi Reetseng for ethical clearance. Ms Reetseng complied with the standard requirements for ethical clearance as set out by the University of Pretoria's Faculty of Engineering, Built Environment and Information Technology (EBIT), as follows:

- She signed and submitted all the application forms required for ethical clearance;
- She submitted her data collection instruments for vetting by both the Research and Ethics Committees; and
- She implemented all corrections recommended by the above-mentioned committees.

The Research Committee of the Department of Information Science therefore requests permission for Ms Reetseng to collect the data she needs in order to complete and submit her mini-dissertation for examination. The Committee further appreciates any effort by appropriate authorities to expedite this process, and expresses its gratitude in anticipation.

Yours sincerely



Dr Marlene Holmner

---

Dr Marlene Holmner  
Academic Coordinator: Carnegie MIT  
Department of Information Science E-mail:  
marlene.holmner@up.ac.za

**APPENDIX B: Permission letter (Sefako Makgatho Health Sciences University)**



**Sefako Makgatho Health Sciences University  
Research & Postgraduate Studies Directorate  
Sefako Makgatho University Research Ethics Committee  
(SMUREC)**

Molotlegi Street, Ga-Rankuwa 0208  
Tel: (012) 521 5617/3698 | fax: (012) 521 3749  
Email: [lorato.phiri@smu.ac.za](mailto:lorato.phiri@smu.ac.za)  
P.O. Box 163 Medunsa 0204

Mrs MP Reetseng  
Library and Information Services  
P.O Box 156  
Medunsa  
0204

Dear Mrs Reetseng

**RE: PERMISSION TO CONDUCT A STUDY WITH STUDENTS FROM SEFAKO MAKGATHO HEALTH SCIENCES UNIVERSITY (SMU)**

SMUREC **NOTED** your letter dated 7 September 2015 requesting permission to conduct a research study at Sefako Makgatho Health Sciences University

**Study Title:** An assessment of the attitudes of undergraduate students towards information literacy training: Sefako Makgatho Health Sciences University library as case study.  
**Researcher:** Mrs MP Reetseng  
**University:** University of Pretoria  
Faculty of Engineering, Built Environment and Information Technology  
School of Information Technology  
**Supervisor:** Prof I Fourie  
**Approval letter date:** 10 September 2015

SMUREC **APPROVED** and **GRANTED** the researcher permission to conduct the above mentioned study at Sefako Makgatho Health Sciences University

Yours Sincerely,

**DR C BAKER  
DEPUTY CHAIRPERSON SMUREC**



**SEFAKO MAKGATHO  
HEALTH SCIENCES UNIVERSITY  
SMU Research Ethics Committee  
Chairperson**

Date: 01/10/2015

01 October 2015

## APPENDIX C: Researcher declaration

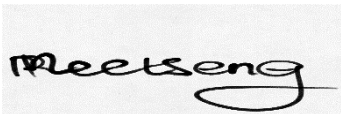
### RESEARCHER DECLARATION

#### **An assessment of the attitudes of undergraduate students towards information literacy training: Sefako Makgatho Health Sciences University (SMU) Library as case study**

Hereby I, **Mmakgoshi Precilla Reetseng** in my capacity as the **Researcher**, declare that,

- 1 Research subjects will be informed, information will be handled confidentially, research subjects reserve the right to choose whether to participate and, where applicable, written permission will be obtained for the execution of the project (example of permission attached).
- 2 No conflict of interests or financial benefit, whether for the researcher, company or organisation, that could materially affect the outcome of the investigation or jeopardise the name of the university is foreseen.
- 3 Inspection of the experiments in loco may take place at any time by the committee or its proxy.
- 4 The information I furnish in the application is correct to the best of my knowledge and that I will abide by the stipulations of the committee as contained in the regulations.

Signed:



Date: 04 September 2015

## APPENDIX D: Informed consent form for questionnaires

### Informed consent form (Form for research subject's permission)

**An assessment of the attitudes of undergraduate students towards information literacy training:  
Sefako Makgatho Health Sciences University (SMU) Library as case study.**

1. I, \_\_\_\_\_ hereby voluntarily grant my permission for participation in the project as explained to me by **Mmakgoshi Precilla Reetseng**.
2. The nature, objective, possible safety and health implications have been explained to me and I understand them.
3. I understand my right to choose whether to participate in the project and that the information furnished will be handled confidentially. I am aware that the results of the investigation may be used for the purposes of publication.
4. I agree to participate in the study: Yes  No
5. Upon signature of this form, you will be provided with a copy.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Witness: \_\_\_\_\_ Date: \_\_\_\_\_

Researcher: \_\_\_\_\_ Date: \_\_\_\_\_

## APPENDIX E: Informed consent form for individual interview and focus group interviews

### Informed consent form (Form for research subject's permission)

#### An assessment of the attitudes of undergraduate students towards information literacy training: Sefako Makgatho Health Sciences University (SMU) Library as case study

1. I, \_\_\_\_\_ hereby voluntarily grant my permission for participation in the project as explained to me by **Mmakgoshi Prescilla Reetseng**.
2. The nature, objective, possible safety and health implications have been explained to me and I understand them.
3. I understand my right to choose whether to participate in the project and that the information furnished will be handled confidentially. I am aware that the results of the investigation may be used for the purposes of publication.
4. I agree to participate in the study: Yes  No
5. I agree for the interview to be recorded: Yes  No
6. Upon signature of this form, you will be provided with a copy.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Witness: \_\_\_\_\_ Date: \_\_\_\_\_

Researcher: \_\_\_\_\_ Date: \_\_\_\_\_

## APPENDIX F: Questionnaire

Dear Potential Participant,

### Request for participation in a research study

I am Mmakgoshi Precilla Reetseng, a student pursuing a Master of Information Technology Degree (MIT) at the University of Pretoria. As a requirement for the degree, I am undertaking a study entitled: ***An assessment of the attitudes of undergraduate students towards information literacy training: Sefako Makgatho Health Sciences University (SMU) Library as case study.***

The purpose of the study is to offer students an opportunity to share their perceptions and feelings about the Sefako Makgatho Health Sciences University (SMU) Library's information literacy training programme and also about the value of information literacy.

Please note that information gathered from the study will be treated with strict confidentiality and used only for the purpose of completing this study, and the report on the results of the study.

You are invited to participate in the study – your thoughts and input would be highly appreciated. Participation is, however, voluntary.

Researcher: Mmakgoshi Precilla Reetseng: (012) 521 4527; 072 1722 073  
[Mmakgoshi.Reetseng@gmail.com](mailto:Mmakgoshi.Reetseng@gmail.com)

Supervisor: Prof Ina Fourie: (012) 420-5216; 082-707-8062  
[ina.fourie@up.ac.za](mailto:ina.fourie@up.ac.za)

***An assessment of the attitudes of undergraduate students towards information literacy training:  
Sefako Makgatho Health Sciences University (SMU) Library as case study***

This questionnaire is divided into three sections, Section A (Student demographics), Section B (Opinion on the information literacy skills training) and Section C (Perception of outcomes associated with the information literacy training). Please mark the appropriate answers with an X. For some questions it is indicated that you can mark more than one answer.

**SECTION A: DEMOGRAPHIC INFORMATION**

**1. In which school are you enrolled?** Please mark only one appropriate option.

Medicine	
Oral Health Sciences	
Health Care Sciences	
Pathology and Pre-Clinical Sciences	

**2. When did you complete the information literacy skills training?**

First term of this year	
Second term of this year	
Last year	
Other (please specify)	

**SECTION B: OPINION ON THE VALUE OF INFORMATION LITERACY SKILLS TRAINING**

**3. In which opportunities for information skills training at SMU Library did you participate?** (Please mark all applicable options.)

Library orientation	
Library tour	
Library information literacy training	
None	

**4. What is your overall opinion on the value of the information literacy *skills* addressed in the training?** (Please mark all applicable options.)

<b>Relevant</b>	<b>Valuable</b>	<b>Useful</b>	<b>Irrelevant</b>
-----------------	-----------------	---------------	-------------------

Please explain your opinion.			

5. What is your opinion on the overall information literacy training *programme* offered by the SMU Library? (Please mark all applicable options.)

Interesting	Valuable	Boring	Waste of time
Please explain your opinion.			

6. Please indicate your rating of the value of the information literacy skills addressed in the training for the following:

	Very valuable	Valuable	Somewhat valuable	Not valuable at all
Your first year studies				
Future studies				
Everyday life				
Please explain each of your choices.				
Your first year studies				
Future studies				
Everyday life				



7. Please rank the value of the following skills included in the training for your FIRST YEAR STUDIES on a scale of 1 – 12 (1 being the *most* valuable and 12 being the *least* valuable):

Library tour	
Information on library, services & registration	
Information on what is expected of library users	
Information on how to reference	
Information on how to use books	
Information on how to use journals	
Information on how to use audio-visual material	
Information on how to care for books	
Information on copyright	
Practical on searching the computer catalogue	
Practical on going to the shelves and finding books	
Practical on searching the internet and databases	

**SECTION C: PERCEPTION OF THE OUTCOME OF THE INFORMATION LITERACY TRAINING**

8. Please indicate your perception of the outcome of the information literacy training, i.e. skills and attitudes that have improved because of the training. (Please mark only one option for each issue.)

	Strongly agree	Agree	Disagree	Strongly disagree
Searching of the library catalogue is easier				
Searching of the Internet is easier				
Searching of the databases is easier				
Increase of confidence in using the library catalogue				
Increase in confidence in using the Internet				
Increase in confidence in using databases				
Increase in motivation to use the library resources and services				
Increase in ability to avoid plagiarism				
Increase inability to find information using less time and effort				

9. Please indicate any other outcomes of the information literacy training provided by the SMU Library you think I should note.

.....

.....

Thank you for participating.

## **APPENDIX G: Interview schedule for the librarian for information literacy training for undergraduate students**

### **An assessment of the attitudes of undergraduate students towards information literacy training: Sefako Makgatho Health Sciences University (SMU) Library as case study**

Interview schedule for an interview between the researcher, Mmakgoshi Precilla Reetseng, and the librarian for information literacy skills training for undergraduate students.

#### **Question 1**

What is your involvement with information literacy training at the Sefako Makgatho Health Sciences University Library and for how long have you been doing this?

#### **Question 2**

- (a) What standards or policies are used as guidelines when designing the Sefako Makgatho Health Sciences University library's information literacy training?
- (b) Do these standards or policies allow for the assessment or consideration of attitude of students towards information literacy?

#### **Question 3**

Do you assess students' information literacy skills and attitude towards information literacy?

- If yes, how and what does it entail?
- If no, why not?

#### **Question 4**

What is your perception of the attitudes of students towards information literacy skills training?

#### **Question 5**

What is your opinion about the importance of understanding the attitude of students to information literacy in addition to assessing their skills?

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## APPENDIX H: Interview schedule for focus group interviews

**Interview schedule for focus group interviews with students: An assessment of the attitudes of undergraduate students towards information literacy training: Sefako Makgatho Health Sciences University (SMU) Library as case study**

**Question 1:** What are your perceptions about the value of information literacy skills training for:

- (a) Your studies as first year?
- (b) Your future studies?
- (c) Your future careers and jobs?
- (d) Everyday life information needs?

**Question 2:** What are your thoughts about the scope and style of training offered by the SMU Library?

**Question 3:** How would you describe your emotions when attending the information literacy training offered by the SMU Library?

**Question 4:** How long is it since you attended the information literacy training offered by the SMU Library, and how would you describe your emotions about the training now?

**Question 5:** Which positive experiences did you have during the information literacy training and afterwards when applying information literacy skills?

**Question 6:** Which negative experiences did you have during the information literacy training and afterwards when applying information literacy skills?

**Question 7:** What improvements and changes would you recommend for the information literacy training offered by the SMU Library?

**Researcher:** Mmakgoshi Precilla Reetseng: (012) 521 4527 / 0721722073

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## APPENDIX I: OVERVIEW OF THE DATA COLLECTION METHODS

<b>Overview of the data collection methods</b>	
<b>Methods</b>	<p>Self-administered, semi-structured questionnaire</p> <p>Focus group interview</p> <p>Individual interview</p>
<b>Software</b>	<p>LibreOffice software package (similar to Microsoft Excel) was used to analyse quantitative data for the questionnaire</p> <p>Whatsapp messages and sms-es were sent to focus group participants to request to participate and remind them to come to the interviews.</p> <p>Digital recorder to record the interviews with focus group participants.</p>
<b>Ethical clearance</b>	<p>An ethical clearance approval letter was granted by the Department of Information Science at the University of Pretoria (the degree-granting institution) on the 10 September 2015. The Sefako Makgatho Health Sciences University, Research Ethics Committee (SMUREC) permission letter was received on the 01 October 2016.</p>
<b>Time frame for data collection</b>	<p><b>Questionnaire</b> - October to November 2015</p> <p><b>Focus group</b> - October 2015</p> <p><b>Individual interview</b> - October 2015</p>
<b>Follow-up</b>	<p><b>Questionnaire</b> - Telephone calls and sms-es sent to Class representatives</p> <p><b>Focus group</b> - Whatsapp group chats were created and participants invited and reminded of the interviews via Whatsapp and sms-es.</p> <p><b>Individual interview</b> - Face to face</p>
<b>Rate of response</b>	<p><b>Questionnaire</b> - 394 distributed, 225 were returned, Six were spoiled and 219 were analysed.</p>

	<p><b>Focus group</b> - Four groups with 18 participants.</p> <p><b>Individual interview</b> - One Librarian responsible for information literacy training at the SMU library.</p>
<b>Number of questions asked</b>	<p><b>Questionnaire</b> - Eight closed questions and One open question (see Appendix F)</p> <p><b>Focus group</b> - Seven questions (see Appendix H)</p> <p><b>Individual interview</b> - Five questions (see Appendix G)</p>
<b>Approximate time taken to answer</b>	<p><b>Questionnaire</b> - Less than 30 minutes</p> <p><b>Focus group</b> - The shortest was 19:55 minutes and the longest was 31:23 minutes</p> <p><b>Individual interview</b> - Lasted 25 minutes, 6 seconds</p>
<b>Consent</b>	<p><b>Questionnaire</b> - All participants signed a printed informed consent form (see Appendix D ) before filling the questionnaire</p> <p><b>Focus group</b> - Before the interview was held participants were given an informed consent form (see Appendix E)to sign and to indicate if they permission for the interview to be recorded</p> <p><b>Individual interview</b> - An informed consent form (see Appendix E) form was signed before the interview was held.</p>