

**TEACHING AND LEARNING OF INFORMATION LITERACY IN
INSTITUTIONS OF HIGHER LEARNING IN KWAZULU-NATAL
PROVINCE AND MALAWI.**

by

GEORGE THEODORE CHIPETA

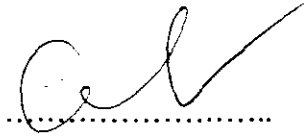
**A dissertation submitted in partial fulfillment of the Degree of
Master of Library and Information Science (MLIS)
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University of Zululand**

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Dr. J Mostert**

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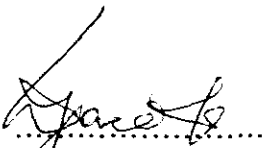
DECLARATION

I, GEORGE THEODORE CHIPETA declare that this thesis is my original work except where proper referencing is made in the text. The thesis has not been submitted for the award of any degree to any other University.



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Date: 22/08/08

DEDICATION

This work is dedicated to the following people:

Florence my wife, for her undying love, understanding, patience, care and support, my children, Lisa and George Jr, for their love and support, my mother Ms E. Chilinda for raising and educating me, my late father Mr. W.W. Chipeta, my brothers, sisters, uncles and aunties for their support.

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ABSTRACT

This study has defined Information Literacy as the teaching and learning about the whole range of information sources and formats. Information literacy enables people to interpret and make informed judgments as users of information sources and it also enables them to become producers of information in their own right, and thereby to become more powerful participants in society. Information Literacy forms the basis for lifelong learning. It is common to all disciplines, to all learning environments and to all levels of education.

The aim of this study is to investigate the teaching and learning of Information Literacy in institutions of higher learning in KwaZulu-Natal province and Malawi. It was assumed that Information Literacy presents a broad approach that offers the opportunity to educate students to understand the importance of information, and have the competence to locate, evaluate and manage it. In that way, Information Literacy contributes towards a higher level of literacy and lifelong learning. It can be argued, therefore, that students become information literate when they are comfortable in using all information formats independently, when they are able to evaluate and base decisions on information obtained. It is in this vein that students should be empowered to be literate and comfortable in using information available in printed and in electronic formats.

Qualitative and quantitative approaches were used that involved largely surveys by use of questionnaires, observations and interviews for data collection. A document study was also used in the form of literature review to examine trends and patterns in study guides and course outlines. The study targeted four hundred and twenty two (422) students as follows: Durban University of Technology, two hundred and twenty nine (229) students, University of Zululand one hundred and three (103) students and Mzuzu University eighteen (18) students. Six members of staff were targeted as follows: One (1) Lecturer from the Department of Library and Information Science and One (1) Librarian from each institution under study.

In order to test the reliability of the research instruments, a pilot study was carried out at the University of Zululand and necessary adjustments were made to the instruments before the final survey commenced.

Data were analysed using the Statistical Package for Social Sciences (SPSS), a computer-aided software. The results were represented qualitatively and quantitatively using tables, graphs, and percentages.

Problems encountered included difficulty in collecting preliminary information on the number of registered students at the Durban University of Technology; the late release of the research funds which affected the time frame of the research and a slow response to request for permission to conduct study at the institutions under study especially at the University of KwaZulu-Natal which was initially targeted, but later dropped in preference to Mzuzu University in Malawi.

The study revealed that Information Literacy is offered at the University of Zululand and Mzuzu University as a module or course. The Durban University of Technology does not offer a module or course in Information Literacy, but the library does teach Information Literacy to all the students in the university during the library orientation programme.

The study also established that a handful of students were aware of the availability and attendance of the module or course of Information Literacy at the University of Zululand and Mzuzu University, probably because the module or course is not offered across the whole universities. The mode of teaching includes lectures and learning guides, whereas the learning mode includes both theoretical and practical modes. The results also indicate that all students that had received formal information literacy training had the perception that they had the ability to independently identify, locate, retrieve and use information sources. Similarly, it was found that all respondents that had received formal Information Literacy had the perception that they had the ability to do so by using the OPAC.

It was established that Information Literacy equipped students with information handling skills such as correctly writing citations and references. The majority of the respondents that had not received formal information literacy training indicated not using citations and references in their academic works. Problems encountered in the teaching and learning of Information Literacy include inadequate time, lack of computer skills by the students, inadequate venues and equipment for teaching and students' practicals, lack of

cooperation overcrowding of classes and erratic network connections due to power disruptions.

The study recommends that the three institutions should harmonise their syllabi on Information Literacy and that the module/course should be embedded into the whole university curricula and that the DUT should introduce a dedicated module/course in Information Literacy and embed it into the students' course materials. The three universities should also publicise to academic staff, students and the decision makers the importance of having module/course of Information Literacy. The study also recommends that Information Literacy should be introduced into various modules/courses published and presented online in WebCT modules and delivered in lecture modes with the help of tutorials, and workshops. Academic staff should reinforce students' use of indexing and abstracting journals by collaborating among themselves in giving the students more work, assignments that require searching and the use of indexing and abstracting journals. In addition, academic staff should collaborate among themselves and with library staff by devising a uniform citation style to be used by students and reinforce, the students' use of citations and references and that they should give assignments to students that entail the use of citations and references.

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GLOSSARY OF TERMS

Curriculum: An aggregate of courses of study given in a school, college, university, etc.

Institutions of higher learning: A higher level of educational institution, in which students study for their diplomas, degrees and academic research is done. In South Africa, that includes Universities and Technikons. In Malawi it includes Universities and Colleges.

Learning: Entails to acquire knowledge or skill

Lifelong: Means lasting or continuing through all or much of one's life.

Literacy: Means the condition or quality of being literate, especially the ability to read and write.

Skill: Means proficiency, facility, or dexterity that is acquired or developed through training or experience.

Teaching: Means to impart knowledge or skill.

ABBREVIATIONS

ACRL	Association of College and Research Libraries
ALA	American Library Association
CA	Chemical Abstracts
CAUL	Council of Australian University Librarians
CILIP	Chartered Institutes of Library and Information Professionals
CQU	Central Queensland University
DUT	Durban University of Technology
ICT	Information and Communication Technology
INFOLIT	Information Literacy
LIASA	Library and Information Science Abstracts
LIS	Library and Information Science
MARC	Machine Readable Catalogue
MOSAIC	Making Sense of Information in the Connected Age
MZUNI	Mzuzu University
OPAC	Online Public Access Catalogue
QUT	Queensland University of Technology
SADC	Southern Africa Developing Community
SAFARI	Skills in Accessing, Finding And Reviewing Information
SCONUL	Society of College, National and University Libraries
SPSS	Statistical Package for Social Sciences
TILT	Texas Information Literacy Tutorial
UNISA	University of South Africa

UNIZUL	University of Zululand
UW	University of Washington

CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Conceptual setting

According to Abid (2004:n.p), Information Literacy is concerned with teaching and learning about the whole range of information sources and formats. The author further states that information literacy enables people to interpret and make informed judgments as users of information sources and it also enables them to become producers of information in their own right, and thereby to become more powerful participants in society. Information literacy forms the basis for lifelong learning. It is common to all disciplines, to all learning environments and to all levels of education.

De Jager and Nassimbeni in (Somi and De Jager 2005: 260) note that information literate persons are those who can:

- Recognise the need for information;
- Access information efficiently and effectively;
- Evaluate information and its sources critically;
- Incorporate selected information into one's knowledge base;
- Use information effectively to accomplish a specific purpose;
- Understand the economic, legal and social issues surrounding the use of information and
- Access and use information ethically and legally.

The Chartered Institute of Library and Information Professional (CILIP, 2006: 4.) states that an information literate person should have the ability to be a lifelong learner and to be able to reflect on what one does. Information literacy is also about commitment to value, to worth and to success.

Information literacy presents a broad approach that offers the opportunity to educate students to understand the importance of information, and have the competence to locate,

evaluate and manage it (Makhubula and Koen in Somi and De Jager 2005: 260). In that way, information literacy contributes towards a higher level of literacy and lifelong learning. It can be argued therefore that students become information literate when they are comfortable in using all information formats independently and when they are able to evaluate and base decisions on information obtained. It is in this vein that students should be empowered to be literate and comfortable in using information available in printed and in electronic formats.

In response to developments outlined above, institutions of higher learning in South Africa have in recent years increasingly engaged in activities intended to help students to become critical thinkers, problem solvers, independent information seekers and lifelong learners. Rader (n.d: par 4) for instance, opines that user education and information literacy has become an area of research in the library community of South Africa. Most institutions of learning are involved in information literacy activities and that most academic librarians are working on integrating information skills instruction into the curricula. Rader (n.d :par 4) gives an example of the University of South Africa (UNISA) and the University of Pretoria where several initiatives related to information literacy have been in operation for several years. Since 1997, UNISA has continued to offer a fully integrated course on research information skills to graduate students in Chemistry in the distance education environment, utilising workshop components such as hands-on training and innovative evaluation methods.

At the University of Fort Hare, lecturing staff responsible for certain subjects send their students to the library to be trained more specifically in the identification and use of information resources of their particular subject areas (Somi and De Jager 2005: 261). The purpose, according to Somi and De Jager (2005: 261), is to enable students to use information resources that the library has on that particular subject. The use of the library homepage on the web where students learn about the library services, the evaluation of online resources, databases, writing assignments, citation styles and library rules and regulations are also taught during the sessions.

1.1.2 The need for information literacy

The advent of the information explosion in the late 20th century has given impetus to the teaching of information literacy because individuals were faced with a myriad choices of information in both print and electronic media. The electronic media, however, do not have the variety of quality assurance processes that are inherent in print media, where the content passes from authors, through editors, reviewers and publishers and possibly through recommendations by tutors, to the learner (Idiodi, 2005:3). Uncertainties such as quality, authenticity, validity and reliability of some of the materials in electronic format via the Internet are one factor in particular that makes the need for information literacy pressing.

Idiodi (2005:3-4) further writes that Information literacy instruction assists users in identifying and selecting necessary information, and using appropriate search strategies in evaluating, organising and synthesising the information thus acquired into a meaningful state. The challenge of critically evaluating, understanding and using information in the present-day context is quite daunting, and information literacy skills help students to master content and give them the confidence to proceed with investigation and enquiry.

Another factor that has made information literacy an essential attainment is that, participative citizenship in today's world requires that all people, not only students, become information-literate (Idiodi, 2005:4). This means that they must not only be able to recognize when information is needed, but also be able to identify, locate, evaluate and use information needed for decision-making or fulfilling different goals. Information literacy is a skill that is widely relevant and extends beyond the walls of the classroom into the world of social responsibility. In this sense, it is essential that undergraduates acquire both information and the skills to use it, if they are to be able to cope in a fully formed, modern information-based society (Idiodi, 2005:4).

It is due to the above mentioned factors that African Universities are now witnessing a rapid growth in computer networking and the use of computerised data-bases to access

information in their libraries. In addition, Information Literacy programs have been introduced in some departments offering Library and Information Science (Somi and De Jager 2005: 261).

1.2 Contextual setting.

1.2.1. The University of Zululand

The University of Zululand was established in 1960. The main campus of the University is situated about 142 km north of Durban and 19 km south of Empangeni off the N2 national road on the KwaZulu-Natal Coast, (University of Zululand general prospectus 2007:4). The University of Zululand was officially opened in 1961 and it was meant to serve the surrounding communities in particular. The overall aim of the university is to provide high quality education that is relevant and accessible to full-time and part-time students, (University of Zululand calendar, 2007). According to the University of Zululand general prospectus (2007:3) the mission of the university is three fold namely to:

- Provide access to students from diverse backgrounds to an enabling and caring learning and teaching environment;
- Offer relevant programmes that are responsive to the development needs of society and
- Generate knowledge through research, disseminate it through publications, teaching and development in partnership with the community.

Currently the university has four faculties; i.e. Faculty of Arts, Faculty of Science and Agriculture, Faculty of Education and Faculty of Commerce, Administration and Law at both undergraduate and post graduate levels. Data provided by the Computer Security, ITS Training Manager (2007),¹ indicate that the university has got eight thousand, seven hundred and six (8 706) registered students, two hundred and eighty one (281) academic staff and thirty four library staff (34).

¹ V. Kungwini (2007). Computer security, ITS Training Manager, University of Zululand: KwaDlangezwa.

In order to achieve the mission stated above, the University has a Library which is within easy reach of all tutorial blocks (University of Zululand Library guide n.d:1) whose mission is to serve the teaching, learning and research functions of the University of Zululand, as well as the needs of the community in its immediate vicinity. According to the University of Zululand library guide (n.d : 2), the library holds over 360,000 bound volumes and over 358 titles of journals/periodicals, law collection, reference materials, theses, Uzulu collections and the main collection. The materials in each collection are arranged according to the class numbers of the Dewey Decimal Classification (DDC) system, which divides knowledge into main classes. There are several service points in the library that provide the following services: Circulation, Uzulu collection, Inter-Library loans, Reference collection, Audio-Visual section (AV), Periodicals, Online Public Access Catalogue (OPAC), and Databases.

The University library conducts library user education, and it echoes traditional practices such as library orientation, library instruction, one-on-one instruction and the use of guides and manuals. Library orientation is usually mandatory at the University of Zululand and it is an on- going exercise for new students. During the orientation, students are given introductory lectures on library use, and, where possible, given demonstrations on how to locate and retrieve materials, given brochures and handbooks highlighting resources and services. Library guides and manuals are hard copy materials which students can take away with them and consult for reference at leisure. They enhance the effectiveness of students' information retrieval activities, long after the tour of the library or lectures. With the advent of Information and Communication Technology (ICT), the University of Zululand library is now using electronic information storage and retrieval devices, such as CD-ROMS, OPAC and some databases. The introduction of these electronic devices has resulted in the need for users' skills to be developed (University of Zululand website, 2007: n.p.).

According to the University of Zululand website (2007: n.p.), the University of Zululand offers a 3 year programme in Library and Information Science. The Information Literacy module is offered to students in the Departments of Library and Information Science, Agriculture Science and Communication Science. The purpose of the module is to empower students with information skills so that the students should be able to handle and

manage information appropriately in an academic setting (University of Zululand Information Literacy Module guide, n.p: n.d). The module content has three broad areas namely:

- Information Handling Skills;
- Locating information and
- Expository writing

1.2.2 Durban University of Technology (DUT)

The Durban University of Technology (DUT) is a technical university in KwaZulu-Natal, South Africa. According to the DUT brochure (2007:1), the DUT was formed in 2002 through the merger of Technikon Natal and ML Sultan Technikon and was previously known as the Durban Institute of Technology. The DUT is a vibrant multi-campus tertiary level institution at the cutting edge of higher education, technological training and research. It has six campuses, four are located in Durban City, namely Ritson Campus, City campus, Steve Biko campus and ML Sultan, while the other two are Indumiso (on the outskirts of Pietermaritzburg), and Brickfield Campus in Pietermaritzburg. According to the Durban University of Technology website (2007: n.p), the mission of the DUT is to serve the needs of developing societies within a dynamic global context and to enable quality teaching, learning, research and community engagement by:

- Providing quality, career-focused education;
- Promoting a values-driven ethos sustainable partnerships with industry, community and society; excellence in applied and relevant research;
- Staff and students to succeed and
- Ensuring institutional sustainability.

The DUT has four Faculties namely, the Faculty of Arts, Faculty of Commerce, Faculty of Engineering, Science and the Built Environment and the Faculty of Health Science (Durban University of Technology website, 2007: n.p.).

According to DUT Website (2007: n.p.), the DUT has some site libraries at Steve Biko campus, ML Sultan Campus, City Campus and Ritson Campus all situated in Durban. The DUT library's mission is that, it is a client-focused service that enables teaching, learning and research and encourages lifelong learning by:

- Acquiring information resources;
- Providing information skills training;
- Ensuring equitable access to information and facilities;
- Using appropriate technology and skilled staff and
- Engaging in resource sharing and community outreach.

The library offers the following information resources: library catalogue, E-Data bases, E-Journals, E-newspapers, Open Access journals, subject guides and search engines and useful sites. Services rendered by the library include Inter-library loans, Electronic and audio-visual facilities, group room bookings and photocopying. Research assistance is also given on a one to one basis. The DUT library houses collections of printed materials such as books, periodicals, newspapers, examination papers and maps and media items such as videos, DVDs, audiotapes, stiffy discs, e.t.c. Collections in different sites vary depending on the subjects or programmes offered at a particular campus (Durban University of Technology Website, 2007: n.p.). Subject librarians offer information literacy training during the library orientation programme to various classes from beginner to advanced level on how to access information using the various resources available in the site libraries. The training is meant to familiarise students with the organisation of information in the library, the OPAC, basic and advanced searching, print and electronic resources, and referencing, among others.

According to the DUT Website (2007: n.p.), the ML Sultan Campus in Durban offers a 3 year programme in Library and Information Studies. The programme does not offer a course in Information Literacy. The Department of Library and Information Studies' mission is to strive for excellence in its contribution to the provision of relevant vocational education and training and research in the field of library and information studies to ensure

that both the career aspirations of its learners and the regional and national library and information services needs of the country are realised.

The DUT has a population of twenty one thousand, three hundred and sixteen (21,316) students, (DUT Management Information Systems, 2007²). The DUT audited head count figure of permanent academic staff as provided by Institutional audit portfolio report (2007³) is five hundred and ninety five, (595) and seventy (72) library staff.

1.2.3. Mzuzu University.

Mzuzu University (Mzuni) is situated in Luwingu area to the northwest of Mzuzu City, in the Northern region of Malawi and it is located nearly 6 km away from the city centre (Mzuni Website, 2007: n.p.). Mzuni was established by an Act of Parliament in 1997 as Malawi's second national university and its mission is to provide quality education, training, research and complementary services to meet the technological, social and economic needs of individuals and communities in Malawi (Mzuzu University website, 2007: n.p.).

According to the Mzuzu University Prospectus (2007: 9-15), Mzuni has five Faculties; namely, the Faculty of Education, Faculty of Environmental Sciences, Faculty of Information Science and Communications, Faculty of Medical and Health sciences, and Faculty of Hospitality Management and Tourism. According to data provided by the Senior Assistant Registrar⁴ of the Mzuzu University, the population of Mzuzu University is one thousand, four hundred (1,400) students, one hundred and twenty (120) academic staff and thirteen (13) library staff.

At Mzuzu University, the Department of Library and information Science offers a four year degree programme in Library and Information Science and a course in Information Literacy is offered to first year students of Library and information Science (Mzuzu University Website, 2007:n.p). The course is not offered across all Faculties and

² DUT Management Information Systems, 2007

³ Institutional Audit Portfolio Report (2007), DUT: Durban

⁴ Y. Ngwira (2007) Senior Assistant Registrar- Academics, Mzuzu University: Malawi.

Departments in the University, since the course is new and there is a shortage of teaching staff. According to the Department of Library and Information Science' course guide, (2006:n.p.) the course offers the following content:

- Identifying the need for information;
- Selecting the most appropriate information system;
- Acquiring pertinent information;
- Evaluating information obtained;
- Manipulating information in usable form and
- Communicating information.

In order to achieve its mission, the University has a modern Library, integrating print and electronic information resources like CD-ROM databases such as Emerald, Ebscohost and a wide range of multi-media formats. The collection is arranged according to the Library of Congress Classification Scheme. The principal objective of the Library and Learning Resources Centre (LLRC) is to support teaching, learning and research activities in the university and its mission is: "To provide up-to-date and relevant information resources; promote the effective utilisation of those resources; and facilitate rapid access to information held within and in remote places through conventional and electronic means." The Library has a collection of 16,671 volumes and 200 journal titles. Services that the library provides include: Readers Service, Short Loan (Reserve) Collection, Malawiana Collection, Periodicals collection, Inter-Library loans, Reference Collection, Technical services, Online Public Access Catalogue (OPAC) and Databases (Mzuzu University Website, 2007: n.p).

The Library at Mzuzu University does not teach Information literacy per se, but it does offer instructions to students in the use of the library' information resources. Some topics taught during the orientation programme are searching and retrieval tools, use of the Internet and the OPAC, classification and arrangement of information sources in the Library and citing and referencing of academic works.

1.3 Statement of the Problem

Tertiary institutions are centers of learning and knowledge generation. This means that students, academic staff, administrative staff, researchers and librarians work with information. It is imperative for students to therefore have information literacy skills to enable them to independently search, identify, locate, retrieve and use information. By imparting information literacy skills to students, the students become information literate. This is noted by Barton (n.d: 1-2) who opines that information literate students access evaluate and use information from a variety of sources. They communicate effectively and reflect on the process as well as the product. It is in this regard, therefore, that a deliberate program of teaching and learning of information literacy should be incorporated in universities' curricula. This researcher based on his experience as a student assistant in the Department of Library and Information Science and in the Library at the University of Zululand, and as an assistant lecturer at Mzuzu University in Malawi, has observed that most undergraduate students, do not possess the much needed information literacy skills for conducting their research and searching for information. They rely heavily on their lecture notes and library staff to seek information despite having been taught and equipped with information literacy skills during their first year in the university. One is thus led to ask the question: what and where is the problem? Why are students not performing as expected in regard to the application of information literacy skills? It is the intention of this study to reveal among other findings how valuable the course is.

1.4 Aim of the study

The aim of this study was to investigate the teaching and learning of information literacy in some selected institutions of higher learning in KwaZulu-Natal province and in Malawi.

1.5 Objectives

- To determine the offer and teaching of information literacy ;
- To ascertain the learning of information literacy;
- To establish who are responsible for the teaching of information literacy or library orientation programme;

- To establish the existence of collaboration between library staff and the Department of Library and Information Science in the teaching of information Literacy or library orientation programme;
- To determine students' perception about the ability to independently identify, locate, retrieve and use of information resources;
- To establish the problems faced in the teaching and learning of information literacy or library orientation programme;
- To seek suggestions from library and faculty staff on the most effective method for teaching information literacy or library orientation programme and
- To make recommendations to the curriculum developers and concerned departments at the universities regarding the effective teaching and learning of information literacy.

1.6 Research questions

- Is information literacy taught and offered in the universities?
- What learning modes exist in the institutions?
- Who are responsible for the teaching of information literacy module or course or library orientation programme?
- Is there any collaboration between library staff and the Department of library and Information science in the teaching of information literacy or library orientation programme?
- Are students able to independently identify, locate, retrieve and use information resources?
- What problems do the universities face in the delivery of information literacy programmes?
- What are the solutions to the challenges faced in the delivery of information literacy programs?

1.7 Significance of the study

This study will be used as a resource for students, teachers and librarians. Lessons learned can be put to good use at the institutions being studied and elsewhere, given that, to the best knowledge of this researcher, there is no similar study that has been conducted in the

KwaZulu – Natal province and Malawi. Additionally, the study will spur other researchers to conduct further research in the teaching and learning of information literacy, or in other subject domains.

1.8 Scope and limitations

The study included two institutions of higher learning in the KwaZulu–Natal province, namely the University of Zululand and Durban University of Technology, and the Mzuzu University in Malawi. The University of Zululand and Durban University of Technology have been selected because they represent various groupings in the country. The University of Zululand is a comprehensive rural based University and it is regarded as a historically disadvantaged institution; the Durban University of Technology is urban based and is regarded as a historically advantaged institution. Mzuzu University represents both urban and rural settings.

The study was confined to the two institutions in KwaZulu-Natal, South Africa, and one institution in Malawi. It excluded the other institutions in South Africa and Malawi because of the distance, financial, and time constraints. For instance, the researcher did not have enough funds to cover all the tertiary institutions in South Africa and Malawi. The University of Zululand and Mzuzu University were selected because of convenience. The University of KwaZulu-Natal was left out because of the delays in getting the ethical clearance, which was to affect the time frame of the study. The Durban University of Technology was selected because it has both rural and urban based students. The study mainly focused on academic staff responsible for teaching information literacy, library staff responsible for teaching information literacy or library orientation programme and students.

1.9 Dissemination of research results

Ocholla (1999:141) is of the view that being in possession of information without disseminating it is useless and that research is incomplete until it is disseminated. Results of this study will be disseminated through depositing copies of the dissertation in libraries of the institutions under the scope of the study. Results shall also be disseminated through conferences, seminars, internal workshops and hopefully through the publication of articles in peer-reviewed journals.

1.10 Structure of the dissertation

Chapter One: introduction and background of the study

This covers the introduction, conceptual and contextual setting, statement of the problem, aim, objectives of the study, research questions, and significance of the study and literature review approaches.

Chapter two: Literature review

The chapter covers the literature review of the teaching and learning of information literacy in some selected institutions of higher learning internationally, nationally, and also specifically in KwaZulu-Natal province and in Malawi. This will be done using books, journal articles, and internet resources. .

Chapter three: Methodology

This chapter focuses on how the research was carried out and covers the research methodology, research method, target population, instruments of data collection, data collection techniques and procedures and data analysis.

Chapter four: Data Presentation and analysis.

This chapter presents and analyses data collected from the questionnaires that were distributed to students, observations of students, and interviews conducted with the academic and library staff.

Chapter five: Discussions of findings

This chapter discusses the results of findings from chapter 4 which include responses from students, academic and library staff.

Chapter six: Summary, recommendations and conclusions.

This chapter provides a summary, conclusions and recommendations, based on the findings of the study.

Bibliography

Appendices

1.11 Summary

This chapter has covered the conceptual and contextual setting of the teaching of information literacy in institutions of higher learning. Other topics discussed include: the statement of the problem; aim of the study; objectives and research questions of the study; significance of the study; and scope and limitations of the study. Dissemination of research findings and the structure of the thesis are also provided.

The review of the literature shall be done in chapter two.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the literature related to the entire study. Information Literacy is firmly embedded in the practices and outcomes of education in the Information Age hence contributing to the holistic development of an individual. According to the Council of Australian University Librarians (2001:1), information literacy is an understanding and set of abilities enabling individuals to recognise when information is needed and have the capacity to locate, evaluate and use effectively the needed information. This chapter discusses the concept of information literacy, information skills, benchmarking information literacy in institutions of higher learning, information literacy models, integration of information literacy into the curriculum, collaboration on teaching of information literacy, responsibility for information literacy, learning and teaching of information literacy in institutions of higher learning, information access tools, and problems faced in the teaching and learning of information literacy.

2.2 The concept of information literacy

The concept of information literacy has been defined in the previous chapter. The intention of this chapter is however to conceptualise information literacy.

The American Library Association (ALA), (2007: 1) states that information literacy is a set of abilities which enable individuals to recognise when information is needed and possessing the ability to locate, evaluate, and utilise the needed information. The importance of information literacy in the modern environment of rapid technological change and proliferating information resources can not be over emphasised. Because of the technological advancement which has resulted in the proliferation of information, individuals are faced with diverse, abundant information choices whether in their academic studies, in the workplace, and in their personal lives. This abundant information is readily available in libraries, community resources, special interest organisations, media, and the Internet. Increasingly, information comes to individuals in unfiltered formats, raising

questions about its authenticity, validity, and reliability (ALA, 2007:2). In addition, information is available through multiple media, including graphical, aural, and textual formats, and these pose new challenges for individuals in evaluating and understanding it. The uncertain quality and expanding quantity of information pose large challenges for society. The sheer abundance of information will not in itself create a more informed citizenry without a complementary cluster of abilities necessary to use it effectively (ALA, 2007:2).

Several definitions of the term information literacy exist and among others, it includes the one provided by the United States National Commission on Library and Information Science, in CILIP (2005:n.p) which states "Information Literacy encompasses knowledge of one's information concerns and needs, and the ability to identify, locate, evaluate, organise and effectively create, use and communicate information to address issues or problems at hand; it is a prerequisite for participating effectively in the Information Society, and is part of the basic human right of life long learning."

Webber and Johnston, (2003: n.p) who were instrumental in developing the CILIP definition of Information Literacy, earlier defined Information Literacy as the "adoption of appropriate information behaviour to obtain, through whatever channel or medium, information well fitted to information needs, together with a critical awareness of the importance of wise and ethical use of information in society."

From the definitions provided it can be surmised that information Literacy is knowing when and why one needs information, where to find it, and how to evaluate, use and communicate it in an ethical manner.

CILIP (2006:n.p), defined Information Literacy as part of knowledge or learning which is made up of a series of skills or competencies that must be acquired. The information literate person cares about the quality of the answer to what he or she is investigating and is prepared to work to guarantee that quality. Information Literacy will mean slightly different things to different communities - it may also require a greater degree of skill or understanding by some communities than others. Information Literacy is relevant and it is

viewed as an important skill to be learned and used in primary and secondary schools, in further and higher education, in business, and in leisure (CILIP, 2006: n.p). The term information skills therefore need to be clarified.

2.3 What are information skills?

Lock (2003: n.p) opines that there are two ways to looking at information skills in institutions of higher learning. The first strand relates to study skills which students will need to put to use during their study and it includes skills such as being able to use a library and its resources for advancing one's studies, being able to perform literature searches to whatever depth and complexity required for a particular curriculum or discipline area, and being able to demonstrate this to the satisfaction of tutors and assessors in whatever form necessary by means of citations and references to reading and information gathering. This approach supports the idea of a competent student, one who is able to function effectively as part of the academic community. The second strand is about students being prepared to partake fully in whatever activity they may choose upon leaving higher education. This includes attributes of awareness and understanding of the way in which information is produced, some practical ideas of how information is acquired, managed, disseminated and exploited, particularly with knowledge of how appropriate professional groups use information in the workplace, in business, and in the world of culture and the arts. It also includes the critical appraisal of the content and validity of the information, (Lock, 2003: n.p). In order to know whether a student has mastered the information skills, some standards have to be made with which to measure the student. This is also known as benchmarking.

2.4 Benchmarking information literacy in institutions of higher learning.

According to De Jager and Nassimbeni (2002:3), benchmarking is a strategic assessment tool which is commonly practiced in the business sector environment and it essentially consists of comparing best practice with one's own practice in order to ensure continuous improvement. The purpose of benchmarking is to improve the current situation in order to attain excellence and an important product of such an initiative is "the discovery of innovative approaches ... as enhancement of current practices is rarely sufficient to ensure

future excellence” (Meade in De Jager and Nassimbeni, 2002:3). Information Literacy was strongly emphasised as a main theme in higher education with the publication of “Information Literacy competency standards for higher education by the Association of College and Research Libraries (ACRL) in 1999. These standards are considered the most acceptable standards to measure information competencies in institutions of higher education worldwide. According to the Council of Australian University Librarians (CAUL, 2001:4), information literacy standards provide a framework for embedding information literacy in the design and teaching of educational programs, and for assessing the information literate individual. In addition, the standards outline the process by which academics and librarians assess specific indicators which show that an individual is information literate. These standards are equally useful to the students because they provide a framework for their interaction with information in the environment. They also help to develop their awareness of the need for a metacognitive approach to learning, making them conscious of the explicit actions required for recognition of need, gathering, analysing and using information. The seven pillars of information literacy describe outcomes and examples of assessing students’ progress towards becoming information literate. The outcomes serve as guidelines for academics and librarians in developing local methods for measuring students’ learning.

There are different methods of assessing the outcomes, for instance both higher order and lower order thinking skills. These assessment outcomes are based on Bloom’s taxonomy of educational objectives, which according to Haberle (in De Jager and Nassimbeni, 2002:3) requires that students should first master the cognitive skills of the lower levels of each knowledge domain before the higher levels may be mastered. Azmi (n.d: 149) notes that because information literacy augments students’ competency with evaluating, managing and using information, it is now considered by several regional and discipline- based accreditation association as a very important competency for university students. These benchmarks or standards are explained as part of the information literacy models of which several are in use today.

2.5 Information literacy models

There are several information literacy models that have been propagated by different authors, theorists and academicians. These include the information search and use models; examples of such models are:

2.5.1 Seven Pillars of Information Literacy (SCONUL, 1999)

The Seven Pillars of Information Literacy model was developed by the SCONUL advisory committee on Information Literacy in 1999. The model has seven competence levels which include the ability to recognise a need for information, the ability to distinguish way in which the information gap may be addressed, the ability to construct strategies for locating information, the ability to locate and access information, the ability to compare and evaluate information obtained from different sources, the ability to organise, apply and communicate information, to others in ways appropriate to the situation and the ability to synthesise and build upon existing information, contributing to the creation of new knowledge (SCONUL, 1999:6).

2.5.2 The Big6 Skills (Eisenberg and Bob Berkowitz, 1990)

According to MacDonald and Darrow, (2003:1), the Big6 Skills model is one of the most well known models in the field and is being taught to students as a guide for their research. It is a process model of how people of all ages solve an information problem. It has six stages of the information problem-solving that the students apply in their information problem solving process, namely task definition, information seeking strategies, location and access, use of information synthesis and evaluation (Eisenberg and Berkowitz, 1990:n.p)

2.5.3 Information Search process (Kuhlthau, 1993)

Another well-known model is the information search process by Kuhlthau (1993). This model shows users' approach to the research process and how users' confidence increases at each stage. The model has seven stages, which include initiation, selection, prefocus exploration, formulation, collection, presentation and assessment (Kuhlthau, 1993:1-3).

2.5.4 Research Process Model (Stripling and Pitts, 1988).

Stripling and Pitts' Research Process model (1988) guides students through the stages of creating a research paper. It has ten steps starting from choosing a research topic and ending with the presentation of the final topic.

2.5.5 Pathways to Knowledge (Pappas and Tepe, 2002)

The Information Inquiry model by Pappas and Tepe includes pathways to knowledge and is meant to encourage students to continuously explore and reassess as they go about with their information process. The model has six steps namely appreciation and enjoyment, pre-search, search, interpretation, communication and evaluation.

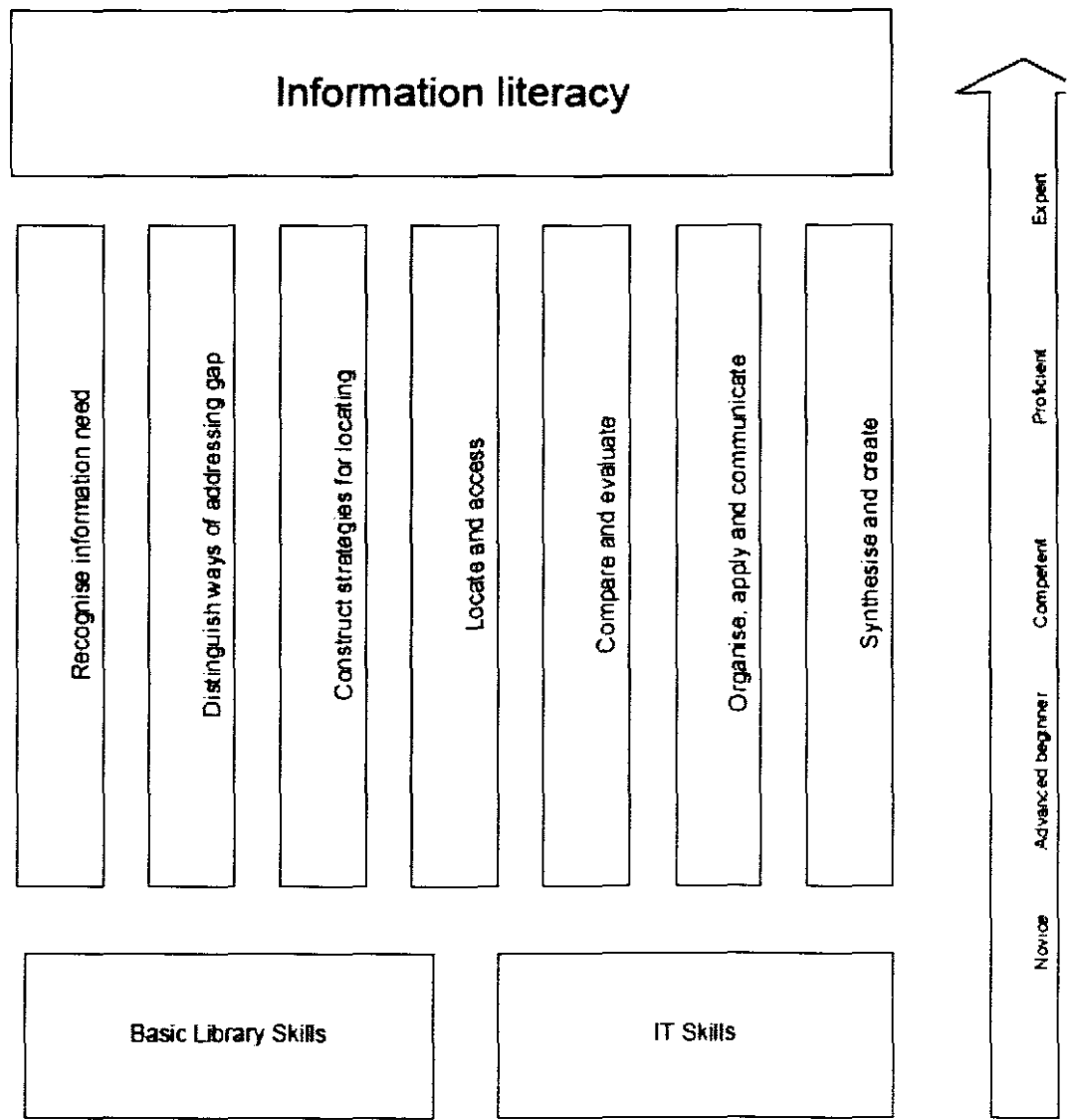
The above mentioned information literacy models will be used in conjunction with other well known information seeking processes, such as Ellis's model of information seeking behaviour, Dervin's sense making theory, and Belkin's anomalous state of knowledge (ASK) theory.

For the purpose of the study the Seven Pillars of Information Literacy, as proposed by the Sconul working group (2003), was chosen, because the model is closer to what students experience through in their daily information processes and it is closer to reality. This shall be used as the framework for the discussion, and its relevance to the other models will also be demonstrated.

2.5.5.1 The Seven Pillars of Information Literacy

The Seven Pillars of Information Literacy model is presented in the diagram below. It is from this model, that other information literacy models' discussions shall be based on. Each skill will be discussed and compared with the stages of other models. Examples of the kinds of specific activity or competence which illustrate the application of the skill are given.

Information skills model (Sourced from SCONUL position paper, 2003)



2.5.5.1.1 The ability to recognise a need for information.

This is the stage where a user is considered to be blank in terms of one’s information needs. Mostert (2004:124) describes the term “need” as a fact of or feeling of the lack of something. It can also be seen as that which a human being should have to function effectively. According to Belkin (in Kituyi-Kwake 2007:82) an information need is present

when a gap, uncertainty or deficiency in a person's cognitive state is recognised. Belkin notes that the deficiency prevents a person from making sense of the surrounding world and to this end it is described as "Anomalous State of knowledge" (ASK) or gaps in one's life path to make sense of a situation

MacDonald and Darrow (2003:2) compare this stage to task definition in the Big6 skills, and initiation and selection in Kuhlthau's information seeking process. By task definition, in the Big6 skills model, a user determines exactly what the problem is and determines the specific information needs related to the problem. In other words, the stage asks what information is needed in order to solve the problem at hand, it involves questioning. This relates to task initiation and selection by in which an individual first becomes aware of a lack of knowledge to accomplish an assignment, feelings of uncertainty and apprehension ensue. At this stage the task is to recognise a need for information. Thoughts are vague and ambiguous centering on the general problem. Feelings of apprehension and uncertainty ensue. A person is driven to seek information in order to address the problem perceived by him. An information seeker for instance discusses with others, including peers and experts, and browses different sources to identify a research topic, or other information need. This in turn leads the student to explore general information resources to increase familiarity with the topic. This involves brainstorming, discussing, thinking about possible topics and tolerating uncertainty. The student then selects the topic for a research. Thoughts at this stage centre on weighing topics which would best suit the student's research interests, project requirements, information available and time available and choosing the topic with potential for success.

When selection is delayed or postponed, feelings of anxiety, confusion are likely to intensify until a choice is made. Feelings of uncertainty give way to a brief sense of elation after selection has been done. Actions involve seeking information by consulting with informal mediators, making preliminary search of the library and other sources. Strategies used are discussing possible topics with peers, experts and using sources for overview of possible topics. In Strippling and Pitts' Research process model (1988: n.p) also known as (REACTS), choosing a broad topic, getting an overview of the topic, is regarded as recalling which entails fact-finding such as reporting on the information. This is followed

by narrowing the topic and developing a statement of purpose. In other words, it involves explaining, asking and searching by posing questions, for instance whether the topic chosen will meet the users' research interests, and finding answers to such questions. It also entails exploring a variety of literature by reading, viewing and listening. In their model, Pappas and Tepe (2002: 1-2) consider this stage as appreciation and enjoyment. Appreciation and enjoyment involves questioning or raising the information need. The authors argue that appreciation fosters curiosity and imagination which in turn leads to discovery in an information seeking activity. As students go through the stages of information seeking, by viewing, listening, reading and sensing, their appreciation grows and matures.

The pre-focus exploration stage in Kuhlthau Information Search Process Model also fits in this first stage of the Seven Pillars model. The student investigates information with the view to finding a focus. Thoughts involve becoming informed about the general topic, identifying several possible focuses and inability to express the exact information needed. The student feels confused, doubtful, uncertain, and sometimes threatened and then takes action by reading to become informed, taking notes and making bibliographic citations. Strategies that a student employs include making a survey of the notes, listing possible foci of the topic and combining several themes to form one focus. The student then proceeds to the next stage which is finding ways in which the information gap can be addressed.

2.5.5.1.2 The ability to distinguish ways in which the information 'gap' may be addressed.

The second step of information process in the Seven Pillars of Information Literacy model entails an information user being knowledgeable about both print and non-print information resources, selecting the information resources which would go towards accomplishing a user's research task and an ability to understand issues affecting accessibility of sources (Sconul, 1999:7).

Baker (2005:1-2) compares this stage to focus formulation in Kuhlthau's Information Search Process Model, formulating questions to guide research and plan for research production in Pitts and Stripling Research Process Model and the pre-search stage in the Pathways to Knowledge model of Pappas and Tepe. Kuhlthau (1993:1-2) notes that

exploration or investigation stage in her model is the most difficult stage for users and the most misunderstood by the intermediaries. Feelings of confusion, uncertainty and doubt frequently increase during this time. The task is to investigate information on the general topic in order to extend personal understanding. Thoughts center on becoming oriented and sufficiently informed about the topic to form a focus or a personal point of view. An inability to state exactly what information is needed makes communication awkward between the user and the system. Actions involve locating information relevant to the general topic, reading to become informed and relating new information to what is already known. Formulation involves becoming more focused on a more specific topic within the topic. Feelings of uncertainty diminish and confidence begins to increase. The task is to form a focus from the information encountered in exploration. Thoughts become more clearly defined as focused perspective of the topic is formed. In formulating questions to guide research and plan for research production stage of the Research Process Model, Baker (2005:5) opines that the stage involves analysing, by examining and organising, and pondering as to whether the questions lay a good foundation for the research task and whether the research plan is feasible. The researcher then organises the information to fit the research task at hand. Whereas at the pre-search stage, Pappas and Tepe (2002:2) are of the opinion that, the stage enables searchers to make a connection between their topic and the knowledge that they already have with the view to exploring the relationships among subtopics. This purports the searchers brainstorming and questioning on what they know about their topic and what they want to know.

2.5.5.1.3 The ability to construct strategies for locating information.

The third step in the Seven Pillars of Information Literacy model implies articulating information needs to match against information sources, developing a systematic method appropriate for the information need and understanding the principles of construction and generation of databases. Baker (2005:1-2) compares this stage to information seeking strategies of the Big6 skills model and search in the Pathways to Knowledge model. During the information seeking strategy, in order for a student to find topic ideas or the amount of information needed, the student would need to consult a variety of literature such as journal articles, books on his subject. It also means determining a wide range of information

sources and prioritising the best of all the possibilities. This is also accomplished through information seeking and it entails the student to assess the value of various types of print and electronic sources such as CD-ROMS, databases, browsing the Online Public Access Catalogue (OPAC) and so on.

The sources found would give the student an idea on how to narrow his broad area of interest. Ellis (in Choo, Detlor and Turnball, 2003: n.p) and (Wilson, 1999:6) call it chaining and browsing. Chaining can be forward or backward. Backward chaining occurs when pointers or references from an initial source are followed, scientists and researchers follow this routine in their information seeking. Forward chaining on the other hand, identifies and follows up on other sources that refer to an initial source or document and it is less commonly used. This is whereby the individual simplifies browsing by looking through table of contents, lists of titles, subject headings, name of organisations or persons, abstracts and summaries and so on. Browsing takes place in situations in which related information has been grouped together according to subject affinity, or when the user views displays at an exhibition, or scans a book on a shelf Ellis (in Choo, Detlor and Turnball :2003: n.p). Having accomplished this activity the student moves on to the next activity.

2.5.5.1.4 The ability to locate and access information.

The fourth stage of the Seven Pillars of Information Literacy Model state that a student or an information user should be able to develop an appropriate searching technique such as the use of the Boolean operators, communication and information technologies, appropriate indexing and abstracting services, citations indexes and databases, and to use current awareness methods to keep up to date. To this end, the models that fit here include the Big6 skills' location and access, information location in Kuhlthau's Information Search Process, find, analyse and evaluate resources in the Pitts and Strippling Research Process Model and search in the Pathways to Knowledge model.

Eisenberg and Berkowitz (1990:n.p) refer to this stage as locating and accessing information. This is concerned with the student selecting the most appropriate investigative methods by developing a research plan, and identifying keywords, synonyms and related

terms for the information needed. The student thereafter constructs a search strategy using appropriate commands for the information access tool selected such as the use of Boolean operators“ AND”, “OR” and “NOT”, truncation, and proximity operators for databases/search engines and the use of OPAC, indexes and abstracts. The student goes on to retrieve information in a variety of formats using various information access tools, classification schemes and other systems such as call number systems or indexes, to locate information resources within a library. Kuhlthau (1993:2-3) on the other hand, calls it collection, this is when interaction between the user and the system functions most effectively and efficiently. At this point, the task involves gathering relevant information on the focused topic. A user has a clearer sense of direction and can specify the need for particular information. Thoughts are engrossed in seeking information to support focus, defining extending focus through information, gathering pertinent information and organising information in notes. At this moment, feelings of confidence continue to increase as uncertainty subsides with interest in the project deepening. Actions focus around using the library and other resources to collect significant information, and taking detailed notes with bibliographic references. Strategies used include using key words to search out significant information, making a comprehensive search of various types of materials such as reference, periodicals and non-fiction, using indexes and requesting assistance of the librarian. This stage is equivalent of find, analyse and evaluate resources in the Research Process Model.

In this model, a student or researcher asks oneself as to whether the sources found are usable and adequate. In the search stage of the Pathways to Knowledge model, Pappas and Tepe (2002:3) point out that, searchers identify appropriate information providers such as libraries, records and archives centers, museums and so on, select information resources and tools such as indexes, people, Internet the media and references resources, and then plan and implement a search strategy to find information relevant to their research question or information need. This they can do by scanning, interviewing and confirming information sources and recording information to determine the relevancy of information, explore and browse widely. Ellis (in Choo, Detlor and Turnbull: 2003: n.p) regards this as extracting, which is an activity of systematically working through a particular source or sources with the view to identify materials of interest. This is achieved by directly

consulting the source or by indirectly looking through the bibliographies, indexes or online databases.

2.5.2.1.5 The ability to compare and evaluate information obtained from different sources.

The fifth stage of the Seven Pillars of Information Literacy signifies that students or researchers should be aware of bias and authority issues, the peer review process of scholarly publishing and appropriate extraction of information matching the information need. This is compared to evaluation in the Big6 skills model, search closure in Kuhlthau's information Search Process, evaluating evidence/taking notes and compiling bibliography in the Research Process Model and interpretation in Pathways to Knowledge model.

Eisenberg and Berkowitz, (1990:n.p) observes that the student assesses the quantity, quality, and relevance of the search results to determine whether alternative information access tools or investigative methods should be utilised and identifies the gaps in the information retrieved and determines if the search strategy should be revised. The student repeats the search using the revised strategy as necessary, summaries the main ideas extracted from the information gathered and examines and compares information from various sources to evaluate the reliability, validity, accuracy, authority, timeliness and point of view or bias. The student should be able to recognise the cultural, physical, or other context within which the information was created and should understand the impact of context interpreting the information. In search closure, Kuhlthau (1993:3) asserts that the task is to wrap up the search for information. A student or researcher's thoughts are immersed in identifying whether there is any need for additional information, increasing redundancy and exhausting resources.

At this stage, the student or researcher feels a sense of relief, sometimes satisfaction and sometimes disappointment. The student or researcher rechecks sources for information that might have at the outset been unnoticed and, confirming information and bibliographic citations relevant to the focus and research questions. Strategies used include returning to the library to sum up the search and keeping books until completion of writing to recheck

information. In evaluating evidence or taking notes and compiling bibliography in the Research Process Model, Baker (2005:5) affirms that this involves judging information on the basis of authority, significance, bias and other factors. In Ellis' model of information seeking behaviour (in Choo, Detlor and Turnbull: 2003: n.p) this is referred to as differentiating. This means an individual filters and selects from among the sources scanned by noticing differences between the nature and quality of the information offered. Priority of sources and types of sources can be made according to three main criteria namely: by substantive topic; by approach or perspective and by level, quality, or type of treatment. The differentiating process is likely to depend on the individual's prior experiences with the sources, word of mouth recommendations from personal contacts, or reviews in published sources.

2.5.5.1.6 The ability to organise, apply and communicate information to others in ways appropriate to the situation.

The stage, calls for students or researchers to cite bibliographic references in their academic works, construct a personal bibliographic system, apply information to the problem at hand, communicate information effectively using the appropriate medium and to understand issues pertaining to copyright and plagiarism (SCONUL, 1999:6). This can be related to information use in the Big6 skills model, communication in Pathways to Knowledge model. According to Pappas and Tepe (2002:3), the communication stage allows searchers to organise, apply, and present new knowledge applicable to their research questions or information need. In applying information, searchers choose an appropriate communication format and respect intellectual property. In sharing knowledge, the searcher composes, designs, edits, revises and uses the most effective medium such as the video, report, animation and conveys the information.

In communicating information to others, the student, should understand cultural, ethical, legal, and socio-economic issues surrounding information and identify articulate issues in relation to privacy. In addition, the student needs to note security in both the print and electronic environments, identify and articulate issues in relation to free versus fee based access to information, identify and discuss issues in relation to censorship and freedom of

speech and to demonstrate an understanding of intellectual property, copyright and fair use of copyrighted materials. To avoid issues of plagiarism, the student should acknowledge the use of information sources by selecting an appropriate citation style in project reports and theses.

2.5.5.1.7. The ability to synthesise and build upon existing information, contributing to the creation of new knowledge.

Synthesis in the Big6 skills Model by Eisenberg and Berkowitz, presentation in Information Search process by Kuhlthau, and establish conclusions/organise information in outline and create and present final product in Research Process model by Pitts and Stripling fit in the seventh stage of Seven Pillars model.

In Synthesising information, according to Eisenberg and Berkowitz (1990:n.p), the student brings information together, and relating what the student learnt to what he already knows. The student chooses a communication medium and format that best supports the purposes of the product and the intended audience. By writing a draft which links various pieces of information into a coherent piece and revises the draft a number of times for a better understanding before submitting it. Kuhlthau's (1993:n.p), on the other hand, views it as presentation. This is when the task is to complete the search and to accomplish the assignment. A sense of relief is common, with satisfaction if the search has gone well or disappointment if it has not. Thoughts center on culminating the searching with a personalised understanding of selected aspects of the topic under study. Finally, the student has to combine concepts into potentially useful primary statements with supporting evidence and integrate the prior and new information including words and ideas, in a manner that supports the purposes of the project. In establishing conclusions and organising information in an outline, a searcher, according to Pitts and Stripling (Stripling and Pitts, 1988: n.p) draws conclusions by creating a personal perspective based on information obtained. The outline should logically organise conclusions and evidence. In creating and presenting final the final product. Pitts and Stripling (Stripling and Pitts, 1988: n.p) are of the view that this should reflect on whether the paper is satisfactory.

In the Information skills model diagram above, at the base of the model are the twin fundamental building blocks of basic library skills and basic Information Technology skills (Lock 2003:n.p.). The progression from novice to expert is indicated by an arrow. First year undergraduates will largely be at the bottom of the arrow, perhaps only practicing the first four skills, whilst postgraduate and research students will aim to be towards the expert end, and will be aspiring to the seventh

The skills discussed above, shall be used to investigate the students' ability to handle various aspects of information such as using information ethically by writing citations and references in their academic works, to determine whether students are able to independently search and retrieve information. The competencies shall also be used to find out whether the institutions under study have incorporated them in their curricula. The above competencies can be inculcated into the students by teaching them in the form of formal classes in their respective subjects. If the module or course of information literacy is to be taught in formal classes, and attract marks, it then has to be embedded into the curriculum of the teaching department.

2.6. Integration of information literacy into the curriculum

Integrating information literacy into the curriculum is one of the ways by which students can effectively be taught skills and gain the ability to perform various information tasks as discussed above. Zais (in Selematsela 2005:24) defines a curriculum as a race course of subject matters to be mastered. Styn (in Selematsela 2005:24) clarifies the concept racecourse as meaning the idea of schooling is a race over a course to receive something at the finishing line. It includes a list of subjects that need to be completed. Curriculum may refer to the planned learning experiences to which the student is exposed. Zais (ibid) gives the components of a curriculum as including the aims, goals, and objectives; the subject matter or content; learning activities; and evaluation following a pattern of content organisation.

Many authors and practitioners have debated on the model that the integration of information literacy into the curriculum should take, with one school of thought proposing the idea of having a stand-alone information literacy course, and another school for the idea

of integrating Information Literacy into the overall curriculum. Proponents of an across-the-curriculum approach, Orr, Appleton and Wallin, (2001:n.p) indicate that “one-off,” demonstration-style information skills classes delivered out of curriculum context do not necessarily coincide with the students’ need for information, are sometimes not valued by the students, and do not necessarily prepare them for the challenges of research, problem solving and continuous learning. As such, librarians prefer to use an across-the-curriculum model that incorporates the process of seeking, evaluating, and using information into the curriculum and consequently, into all students’ experiences. This approach allows the use of information to become part of the learning process. This view is shared by De Jagger and Nassimbeni (2002: 12) who observe that, there was a shift among librarians in South Africa from being satisfied with the standalone, generic model for information literacy programs, to the recognition that integration into subject curricula is a more effective approach to information literacy training. Parker (2003:n.p.) upholds the view that “the total integration of information literacy into the curriculum where an information literacy activity is embedded into the student’s course materials, delivered in the context of the subject they are studying, attracts marks, and is devised on the basis of collaboration between library staff and academic colleagues, is often put forward by practitioners as the most effective method for enabling students to develop their information literacy skills. However, the reality in most institutions is that this approach is not always feasible given the demands of already overloaded curricula.”

To gain insight into the variety of approaches this study discusses the practices in universities in different parts of the world referring to Denmark and the United Kingdom in Europe, Qatar in the Middle-East and South Africa in Africa.

Reporting on the practices in Denmark, Skov and Skærbak (2003:n.p.) state that integration of Information Literacy into the curriculum ensures that students attend and receive credit for information literacy sessions. The two authors argue that it makes more sense to teach information literacy skills to students within the context of their subject areas, rather than as an optional add-on skill. Skov and Skærbak (ibid) give a synopsis of the situation in Danish institutions of higher education where librarians agree that integration is the key to successful implementation of information literacy skills, and work hard to forge alliances

with teaching faculty in a number of ways. Integration of information literacy into the curriculum requires collaboration among faculty, librarians and administrators. Skov and Skærbak (ibid) report some success stories that have been recorded at other institutions of education such as the Holstebro School of Occupational Therapy and Physical Therapy. According to Skov & Skærbak (2003: n.p.), integration of Information Literacy into the curriculum has been a carefully planned joint venture among all parties involved. A number of preconditions for success were present. The requirements of information literacy were laid down in the study plans, there was a new library environment with no pre-established routines, the management was committed to the project, and there was a wish to break down the walls from all stakeholders. A new organisational scheme based on teams involving a librarian and a number of teachers ensured that the library was integrated into the learning environment of the school, and that all parties had ownership of the vision of the library as a focal point for learning. All courses in information literacy are incorporated into the curriculum and taught by the librarian in conjunction with the subject teacher. Moreover, members of the teaching staff work in the library as subject and pedagogical advisors, guiding students in their literature search. This example of best practice shows that integration of information literacy into the curriculum is arguably most successful when it is developed as part of an institution-wide policy, and when the requirements of information literacy are laid down in study plans (Skov & Skærbak 2003: n.p.).

Parker (2003: n.p.) notes that at the Open University in the United Kingdom, an on-line information literacy package named Skills in Accessing, Finding and Reviewing Information (SAFARI) has been developed. The academic staff has been involved in writing course material. The model is ideal for students seeking to update their skills since it can be used as a training package from start to finish. Students are encouraged to work through SAFARI in its entirety, or parts of it. It is, therefore, a useful tool towards the total integration of Information Literacy into the curriculum. Parker (2003:n.p) observes that the package is cost effective, easy to update since it features no printed materials, and ensures that there is a “scalable, practical solution to the problem of delivering information literacy, both in bulk and at a distance.” Another model that the Open University had been testing is the provision of small, manageable chunks of learning that places an increased focus on the

skills agenda, the result being, *Making Sense of Information in the Connected Age* (MOSAIC), which is an assessed, credit-bearing short course in information literacy (Parker 2003:n.p). It had been written by staff in the Library's Information Literacy Unit and is hosted by the Faculty of Education and Language Studies. The development of MOSAIC, according to Parker (2003:n.p), was made possible with the collaboration between academic and library staff, in terms of the delivery of information literacy. It also relied on bringing together other expertise from across the University and further afield. This expertise was provided by the Information Literacy Unit staff who were the main authors, academic advisors from the Faculty of Education and Language Studies, the Centre for Outcomes-Based Education, together with input from members of the SCONUL Advisory Committee who critically read the course. The main teaching materials are delivered via the course Web site, and consist of short pieces of text and graphics interspersed with interactive activities, based on those created for SAFARI. Students also receive a course folder containing printed materials. These consist of a course guide, course readings, some of which are available on-line and a printed version of the on-line assessment portfolio, intended to help students get a "feel" for what the assessment is about (Parker, 2003: n.p).

In Qatar, Azmi (n.d: 159) reports that in order to conform to the Qatar University vision of adding information competence as a graduation requirement for students, the Qatar University has integrated the Information Literacy Course into the main curriculum. The new course being Information and Research Skills is offered as a compulsory course to all university students regardless of their subject specialty. Azmi (ibid) affirms that integrating Information Literacy into the overall curriculum requires collaboration among the library, academic departments and administration so as to meet the common goal of teaching information literacy.

In writing about Information Literacy initiative in South Africa, of which Information Literacy (INFOLIT) project has been the prominent one, Underwood (2002:8), reports that the University of Cape Town had recognised the importance of information literacy by establishing the Centre for Information Literacy. The members of staff at the Centre for Information Literacy are responsible for working with the academic staff of all the faculties

with the view to developing strategies for the integration of information literacy within the faculties' curricula. A series of discipline based workshops on Web searching had been developed using a template. The workshops were delivered on request to academic, library staff and students at each of the five institutions in the cape region. The INFOLIT project sponsored the development of a Web-based information literacy course. The site is meant to help explore, how to find, evaluate, use and communicate information. It is available at all the tertiary institutions in the Western Cape Province (Underwood, 2002:7).

The incorporation of information literacy into the curricula of universities under study can not be overemphasised. Of critical significance is the information literacy competencies discussed above, that have to be incorporated into the curricula of the universities and taught to students in the form of module or course. In order to effectively inculcate information literacy skills to students, various players have to partake in the teaching of information literacy that has been embedded into the department's curriculums.

2.7 Collaboration on teaching of teaching Information literacy.

Collaboration in this case means teamwork or forming partnerships in the teaching of information literacy. Various authors have supported the idea of collaborative teaching in information literacy. Bruce (2002:13) observes that Information literacy is not possible without partnerships with students, information specialists, Information Technology specialists, curriculum designers and others. All these need to collaborate since there is no single group that can claim responsibility for information literacy amongst students. This view is in tandem with that of Orr, Appleton and Wallin (2001:n.p) who assert that faculty and librarians at Central Queensland University (CQU) in Australia share responsibilities in the sense that the faculty delivers the content and librarians deliver the information literacy segments thereby introducing the skills at the same time and making the students to learn the information inquiry process, hence furthering their comprehension of the course content. Barbour, Gavin and Canefield (2004: 3) note that collaboration among faculty, librarians and technical staff is important for coming up with appropriate training needs, information sources, learning modules, and computer and information literacy requirements, as well as to assist students gain expertise in technical design and interface

issues that will help them succeed in a university environment and beyond. In South Africa, the introduction of Computer skills and information literacy at the University of Pretoria in 1998 necessitated collaboration between the Departments of Information Science, Informatics and Computer Science as well as the academic information service in the development of the course (Thompson, 2000:3). Williams and Zald (1997:n.p) states that at the University of Washington, Seattle, Washington, in the United States of America, librarians play a vital, and evolving role in collaborating with faculty to implement the changes necessary for an effective information literacy curriculum. From workshop presentations to one-on-one consultations, faculty perceive librarians as more than a collections-related resource, and more of a service and training-centered resource. From the foregoing, it shows that collaboration to some extent involves sharing of the roles and responsibilities in the teaching of information literacy which shall be discussed in the next section.

2.8 Responsibility for Information literacy.

Responsibility in this context connotes being accountable or in charge of the design, delivery and evaluation of information literacy.

2.8.1 The Role and Responsibilities of the Institution

According to Allen (2000:n.p) the university or college has an opportunity, and a challenge, to prepare students to meet the demands of the Information Age. Institutions need to identify what graduates should know and be able to do. Jones in Allen (2000: n.p) note that recipients of a quality education share certain attributes: critical thinking, problem solving, a global vision and a multicultural perspective, scientific literacy, preparedness for work and good citizenship. It is for this reason that institutions must be accountable for how far their students go from the freshman year to graduation. Allen (2000: n.p) further opines that Universities and other institutions of higher learning should be responsible for producing graduates who are able to find, evaluate and apply needed information. In this case, administrators must set the tone for the entire campus, by incorporating information literacy into the undergraduate curriculum and developing

programs that immerse students into information literacy throughout their undergraduate years. Rather than producing graduates who are simply equipped to enter the workforce, institutions should go beyond this goal and broaden their scope to produce enlightened graduates who are able to freely pursue happy lives and shape the information society of which they are a part.

2.8.2 The Role and Responsibilities of the Academic Library and Librarian

According to Angeley and Purdue (n.d: n.p) libraries have centrally positioned themselves in defining and implementing information literacy programs for many reasons; libraries are concerned with information in that, they acquire, describe and make available information in a variety of formats, including print, video, audio, and electronic. Libraries have also traditionally provided a place for quiet contemplation and scholarly pursuits as well as instruction in research methods. Angeley and Purdue (n.d: n.p), note that the information literacy model necessitates positive change in the instructional mission of the library. Rather than just providing traditional library orientations and tours, often taught out-of-context of an assignment, the library's expanded instructional role emphasises information-seeking behavior within the context of an information need, today's library instruction is focused on teaching students research strategies that require active engagement, fosters problem solving, and emphasises critical evaluation of information. The emphasis is on enabling students to become independent researchers and thereby encouraging lifelong learning.

According to Allen (2000: n.p.) the incorporation of information literacy across curricula requires collaboration between all members of the higher education community, particularly faculty, librarians and administrators. Schaffner, Stebbins, & Wyman in (Allen 2000: n.p) opine that libraries and librarians have an opportunity to improve the quality of undergraduate education by participating in and strengthening information literacy programmes. In order to do this, libraries need to adopt a broader conceptualisation of the role of the academic library beyond collecting, organising and preserving materials. In other words, the academic library becomes a teaching library, which is actively involved in all aspects of higher education, teaching, research and community service A teaching

library according to Boisse, Guskin and Stoffle (in Allen 2000: n.p) is characterised by its commitments to:

- Instructing students, faculty and staff;
- Fostering a climate which encourages lifelong learning;
- Maintaining a collection which stimulates inquiry;
- Making the library the cultural center for the campus and community; and
- Engaging in research to improve library services. The same purpose applies though, to teach students and faculty how to find, evaluate and use information effectively.

2.8.3 The Roles and Responsibilities of the Teaching Faculty

Allen (2000:n.p) lay emphasis on the fact that the faculty engage librarians as co-teachers. The faculty' role remains that of facilitators of learning, helping their students, with the assistance of librarians. Faculty instruct their students, as they work through their own thought processes. This is more valuable to students' development as lifelong learners than simply transmitting information in a specific field.

This brings us to the next topic of learning and teaching of information literacy in institutions of higher learning.

2.9 Learning and teaching of information literacy in Institutions of higher learning.

The discussion on learning and teaching of information literacy looks at different learning and teaching modes being employed in different institutions of higher learning starting from Australia, to Canada, New Zealand, United States of America and Kenya and South Africa in Africa.

In order to come up with an educated and information literate graduate of the 21st century, who is able to find, evaluate and apply needed information, universities need to rethink the teaching-learning process and implement programs where information literacy skills are incorporated and taught. Schaffner, Stebbins, and Wyman (in Allen, 2000:n.p) report that, in order to improve undergraduate education, resource-based learning should be the standard model of learning on university campuses given that it allows for an active undergraduate learning environment. It also incorporates undergraduate research, service learning, inquiry learning, problem-based learning and evidence-based learning. Additionally, it fosters the achievement of information literacy competencies and results in a tangible outcome or accomplishment, such as a solution to a community problem.

Some benefits of this type of learning are:

- Development of interpersonal skills through teamwork;
- Achievement of greater academic success through accommodating differences in learning needs and
- Development of critical thinking skills. Critical thinking is linked to resource-based learning, as healthy skepticism of mass media and assessment of scholarly quality of information is part of such a curriculum. As a result, students become wary consumers of information (Brevier, in Allen 2000:n.p).

Universities can incorporate information literacy into the undergraduate learning experience in a variety of ways: in freshman courses, general education or core courses, or integrated within subject-specific courses.

A scrutiny of the learning and teaching of information literacy modes in Australia reveals that at the Queensland University of Technology (QUT, 2006: n.p) three approaches to learning and teaching strategies for information literacy are applied; namely Extracurricular, Inter-curricula and Intra-curricula. Extracurricular strategy involves lectures, workshops and short courses on basic information skills and are provided by library staff and attended at the discretion of individual students. Information literacy content learnt in such interactions is generic, that is, they are discipline-neutral and non-targeted, meaning they are not aligned with any unit and/or course. The outcome is short-

term functional application of basic information skills (QUT, 2006: n.p). The second approach is Inter-curricula, in which information literacy learning activities develop specific enabling skills linked to the core curriculum of students. These activities generally take the form of lectures, workshops and/or short courses on basic information skills which are designed and delivered by library staff in at the request of, the individual teaching academic. They are typically attended by groups of students as a unit requirement and may be scheduled into a unit timetable. Information literacy content is generally contextualised within a unit curriculum or discipline and timetable and targeted to the broad but immediate needs of students in a single unit. The outcome is task-specific application of basic information skills (QUT, 2006: n.p). The third and final strategy used by the QUT (2006: n.p) is Intra-curricula. Information literacy learning opportunities develop transferable skills embedded within the core curriculum of students. The learning is designed, delivered, assessed and evaluated through collaboration between academic and library staff. Conceptual knowledge and skills development is addressed within the full curricula of a course. Information literacy content is always contextualised within the content. Through recursive and iterative learning opportunities, the outcome is deep, durable learning and transferable understanding and application of complex information literacy concepts and skills (QUT, 2006: n.p).

According to Dazkiw and Forsyth (2003:3) at the La Trobe University, in Canada Information Literacy as a subject for the Bachelor of Nursing degree is published and presented online in WebCT modules and is delivered as a set of lectures. Formal lectures were improved with standard tutorials, and workshops. In New Zealand, at the University of Otago, Wartho (n.d:4) reports that there has been a development of a three tiered teaching and learning programme in information literacy. The three tiers are; traditional user education which mostly requires the library providing a range of tours and classes. The teaching sessions are offered throughout the academic year, with the peak demand being at the beginning of each semester and is offered to the whole academic community. Attendance is voluntary, though highly recommended by some academic staff. Some problems experienced include the different levels and abilities that may be represented in a particular session. Each of the subjects taught has a reference librarian who contacts each

academic department to promote the subject classes. The sessions range from subject-oriented tours to the use of discipline specific academic databases. In addition sessions also extend to personalised research consultations with post-graduate students and staff. The second tier offered is Information Literacy competency guide, which according to (Wartho, n.d: 7) is an interdisciplinary framework that provides a range of competencies appropriate for particular academic levels. The Information Literacy guide is designed to provide academic staff, librarians and students from all academic disciplines at the university with a general indication appropriate information literacy competencies for each level of academic study. The guide, argues Wartho, has enabled academic staff to easily identify skills appropriate for their students and has proved to be very popular across a diverse range of subjects. In other words, the model is moving in the direction of assisting the integration of information literacy into the curriculum at all academic levels across many different subjects. The third tier is Curriculum embedded information literacy, which according to Wartho involved the selection of Sociology in 2003 as the first subject in which to embed Information literacy programme at first and third year level. The embedding of information literacy into sociology programme has a closer working relationship between librarians and academic staff. In short, (Wartho, n.d.:8) observes that the three tiers of information literacy at the University of Otago are proving to be an effective model for the development of transferable Information Literacy skills.

According to Williams and Zald (1997: n.p.), the trend at the University of Washington (UW), in the United States of America, is that in order to address the information literacy needs, a holistic, campus-wide approach called UWired has been developed. The primary goal of UWired is to create an electronic community in which communication, collaboration, and information technologies are integral to teaching and learning; ultimately, the aim is for information literacy to be a hallmark of a UW degree. Librarians, faculty, computing staff, administrators, and students from a number of units across campus are collaborating in this project, including Undergraduate Education, Computing & Communications, University Libraries, and University Educational Outreach. The UWired programme has a series of lectures, which include specific teaching techniques. Collaboration exists between faculty and Librarians and faculty, with the latter regarding

librarians as a service and training-focused resource. Both faculty and librarians have stepped out of their normal roles to transform teaching to incorporate information and technological literacy. The Center for Teaching, Learning and Technology provides consulting, training and support to faculty who want to integrate learning technologies into their courses. A team of consultants, including a librarian, is available to assist with course-related technology projects, and drop-in workshops are also offered. (Williams and Zald, 1997: n.p). Kasowitz-Scheer and Pasqualoni (2003:4) state that at the University of Texas at Austin's Texas Information Literacy Tutorial (TILT), there is an integration of Web-based Information Literacy Tutorial into first year college courses, which enhances students' conceptual grasp of information resource selection, databases searching and internet source evaluation.

In Africa, Kavulya (2003:n.p) reports that the development of information literacy efforts in Kenyan universities involve the offer of communication skills course to undergraduate students regardless of their subject specialisation. In the course, students are taught a wide variety of skills including the use of the library, reading and writing skills, so that the students can become familiar with skills associated with university academic work. The gist of the course is to make interaction between students and information resources possible by enhancing user independence, confidence and accuracy in exploiting the information resources for learning purposes. The library skills component of the communication skills course is to ensure that the user can exploit library resources adequately, by establishing a link between the subject taught and the literature available. It was found that in most institutions of higher learning that Kavulya had examined, the communication skills course is compulsory and examined. Fidzani (2006:111) adds that information literacy form part of an accredited Communication skills course at the University of Nairobi, in Kenya, while at the University of Botswana, the Information Literacy component is offered as part of the computing and Information skills course, which is compulsory to all first year students. Fidzani (ibid) observes that Information Literacy also takes the form of user education programmes, which cover similar topics as those offered in examinable courses above. The programmes range from one-off sessions on the use of the library and its resources to structured sessions offered throughout the year.

These instruction lessons are not compulsory, but they are offered to those who register for them.

In South Africa, De Jager, Nassimbeni and Underwood (2007: 143) narrate that the current position is that most institutions of higher learning offer library orientation, whose training include the use of the OPAC, electronic databases, citations and referencing. De Jager, Nassimbeni and Underwood note that there is growing evidence of a greater number of Information Literacy modules being embedded into various curricula. While the majority of courses are still generic and stand alone, others are credit bearing. Most institutions have a librarian whose primary responsibility is information literacy education very often supported by subject librarians who offer training in their specific fields or disciplines. Some of the training is delivered in classrooms or computer laboratories while others are offered virtually through platforms such as Web-CT. A training librarian makes the point, however, that at her institution they are unable to offer an online course as many of their students come “from rural areas, farms and townships where there are no libraries and computers.”

At the former Rand Afrikaans University Molepo and Vuren (2005: 144), recount that the university launched a multimodal approach to teaching and learning in 2003. The multimodal approach was aimed at optimising, learning and assessment and has been defined as the use of different media or modes of delivery of teaching. The different media and technologies used in the integrated, multimodal learning environment include; lectures by lecturers, support by tutors, paper based learning guides, interactive CDs, textbooks, videos, videoconferencing and the Web (electronic classes based on WebCT software and offered to students via Edulink virtual learning environment portal).

At Monash University, South Africa, Kibirige (2005: 131) gives an account that the learning and teaching process involve in some instances, lecturers arranging for customised classes for groups of students for search assistance related to a specific assignment. Such a session covers the Voyager catalogues as well as reference works, search strategies and online databases relevant to an essay topic. There is liaison between the library and the Center for Learning and Teaching and some lecturers attend Information literacy skills

taught to subject groups on an ad hoc basis. The other process is through curriculum integrated sessions, in which there is one formally scheduled session in the academic timetable: a two- hour class on “Doing research on the Internet”, a part of first year course in Contemporary studies. Students complete an assignment for credit towards their semester mark. The students develop the skills that are necessary for effective Internet research by completing specific exercises. The model could be extended to other course unit (Kibirige, 2005: 131).

Most South African institutions of higher learning discussed above, teach students searching and retrieval of information by using different access tools such as the OPAC. The use of the access tools forms the basis for the next discussion.

2.10 Information Access tools

With the plethora of information that exists on most topics, without information access tools, a user would be frustrated by not knowing if information required exists and where to find it. It is for this reason therefore that Ojedokun (2007: 64) argues that the research process which requires a user to find information on a particular subject/topic depends on the users’ skillful use of the appropriate access tools. Access tools include indexes and abstracts, bibliographies, catalogues and web search tools.

2.10.1 Open Access Public Catalogue (OPAC)

Rowley and Farrow (1992: 246) define a catalogue as a list of the documents in a library with the entries representing the documents arranged for access in some systematic order. Catalogues today are often held as a computer database, usually called an OPAC. An OPAC can be searched using an authors’ name, a title or a key word. A catalogue comprises a number of entries, each of which is an access point for a document. A document may have several entries or just one.

2.10.2 An Index

Indexes can be referred to as are reference tools that point to pieces of information located within a document, and they are also a list of records that describe some selected

publications such as periodical indexes. In other words, an index represents, what has been published in a certain subject area within a particular period of time. An example of such is a periodical index (Ojedokun, 2007: 65).

2.10.2.1 Periodical Indexes

Periodical indexes are lists of records organised by subject or author that describe articles published in elected sets of magazines, journals or newspapers during a certain period. A basic periodical index enables a user to search for citations to articles by subject or by author, but does not give description of the content of the article beyond the basic citation such as the author, title, journal title, volume and the page that allows one to locate the article. Most periodical indexes are published periodically such as on a monthly or quarterly basis. These could be general indexes such as the Reader's guide to Periodical Literature and subject specific such as a Periodical Literature in Library and Information Science (Ojedokun, 2007: 65-66).

2.10.3 Abstracts

Abstracts are summaries of the content of an article with some bibliographic information. Abstracts allow a user to assess the relevance of a document before obtaining it (Hart, 2001: 80). Most indexes and abstracts are now available as online computer databases that offer more powerful searching and enable the user to cover many years with a single search. A database contains machine-readable records for the purpose of information storage and retrieval. Examples of abstracts include Library and Information Science Abstracts (LIASA), Chemical Abstracts (CA) and so on (Ojedokun, 2007: 67).

Training is based on the assumption that both students and academics already have a basic knowledge of computer operations and so only minimal instruction is given on navigating the particular software being used. But the reality is that most students come from a background where they have never used a computer and only very few students have this capability, and so very few approach computers to try out their search skills. This leads to problems that are faced in the teaching and learning of information literacy.

The above mentioned information access tools shall be used to investigate whether the students have the ability to use them in their searching and retrieval of information.

2.11 Problems faced in the teaching and learning of information literacy

Several problems faced in the teaching and learning of information literacy has been identified and they are discussed below:

2.11.1 Diverse groups.

Winfred and Manning in (Sele matsela, 2005:30) observe that the student population of today is very diverse and teachers are responsible for classrooms that represent students of different colours, racial and ethnic groups, religion languages, backgrounds, ages and learning styles and computer skills. As such, students enter the university with a greater polarity of skills thereby making it difficult for academic and library staff to pitch information literacy sessions at the same level (Moore and Abson in Sele matsela, 2005:30). In any case, Winfield and Manning in (Sele matsela, 2005:30) note that diversity in the case of students involves two issues, namely intergroup and individual differences. Intergroup differences are more pronounced in socio-economic levels, racial, ethnic and language groups and physical ability. Within the intergroup differences and within each learner group, there are individual differences in learning rates, attitudes and motivational rates, which have a bearing in achievement outcomes that academic and library staff must accommodate.

2.11.2 Language and Cultural barriers.

Sele matsela (2005:31) notes that most learners that study in South African Universities have come from Southern African Developing Countries (SADC) and beyond and also include locals, whose mother tongue is not English. Most of these learners use English as a second language. This has some implications on their learning. Conteh (in Sele matsela, 2005: 31) asserts that the inclusion of learners from diverse language and cultural backgrounds in the same information literacy instruction session becomes problematic in the teaching of information literacy and the risk of misunderstanding. Students from disadvantaged backgrounds have unique obstacles that they have to overcome in order for

them to independently use the library and information resources. It is for this reason that academic and library staff during their teaching should be sensitive to issues of communication, learning styles and students' previous experiences.

In addition to language barriers, there are also cultural barriers, which include students' reluctance to ask for help and their shyness and relationship to authority.

2.11.3 Research skills

Throll in (Selematsela, 2005:31) is of the view that students tend to use the Internet for playing games, chatting, downloading music and movies, such that if they turn to scholarly electronic resources licensed by libraries, their search skills are poor and they are unable to distinguish appropriate from inappropriate resources for their assignments. Undergraduate students from the disadvantaged backgrounds have little experience of using a research library. This is summed up by Kaufman in (Selematsela, 2005:31), who says "students come complete with the confidence that they can find anything they want to know or need on the Web."

2.11.4 Changes in students and the curricula

Throll in (Selematsela, 2005:31) observes that "modern students' behaviour leaves much to be desired." The perception is that they read less and have less intellectual curiosity. Or it could be that they are too busy to explore and learn about what libraries have to offer. The other factor might be that academic departments are assigning fewer projects that require use of library resources. The postgraduate honours students and students enrolled in pre-professional programmes are more frequently library users than masters and doctoral level students and those majoring in business, mathematics or science.

Zabel in (Selematsela, 2005:31) note that students regard library instruction as an isolated activity, unless they are required to apply what they have learned. The answer lies in delivering instruction that is directly applicable to students' projects. This needs the collaboration of academic department and the library staff.

2.11.5 Technology issues

Insufficient computer facilities and slow Internet connections makes efficient information literacy teaching very difficult. To compound the problem some students do not have computing skills. The problem of slow connectivity affects the time frame in which a topic could be taught and its completion (Dazkiw and Forsyth (2003:7).

2.12 Summary

From the above writing, it can be deduced that information literacy is a very important component of our daily lives whether one is at an academic institution, at home and at work place. Information literacy helps individuals in planning for the information task, searching for information, retrieving information, locating information and selecting the information.

Without information skills, individuals would be lost in the vast amount of information that is available on the arena. It is for this reason therefore, that individuals should be equipped with information skills in order for them to interact with the information resources independently and competently without unnecessarily depending on information intermediaries. Hence the justification for institutions of higher learning to incorporate information literacy courses in their curricula so as to make it mandatory to teach students such a course.

The methodology, which explains the way in which the research has been conducted, is presented in Chapter 3.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The main purpose of this chapter is to indicate how the research was conducted. This chapter reports on the methodology and methods used, study population, sampling, research instruments, data collection procedures, pilot study, data analysis and ends with a conclusion.

3.2 Methodology

Research methodology is the way in which data is collected for the research project. It is basically a set of procedures and methods used to conduct research. Two approaches; quantitative and qualitative approaches can be distinguished. Quantitative research according to Burns (2000: 43), uses descriptive aspects of statistics which enables the researcher to summarise quantities of data by using graphs and numbers such as values and percentages. In other words, a researcher would reduce a large amount of data to simpler, more understandable terms. Research methods in a quantitative study include experiment, survey, content analysis and existing statistics (Neumann, 2000:56).

Qualitative research method, according to Neuman (2000:122), does not use statistics, but data in the form of words, pictures, sound, visual, images or objects. Furthermore, Neuman (2000:122) defines a qualitative study as an investigation meant to understanding a social or human problem. Qualitative research involves a detailed reporting of feelings, opinions, attitudes, beliefs and behaviour of the respondents by use of words aided by pictures, sound, visual, images or objects.

This study employed qualitative and quantitative approaches as it allowed the researcher to obtain comprehensive and detailed data about the teaching and learning of information literacy at the institutions under study.

3.2.1 Method

3.2.2 Survey method

A research method is the first step by which a research project is implemented. There are many research methods that are used in the Social Sciences; chief among these is the survey method. A social survey research involves a systematic and comprehensive collection of information about the opinions, attitudes, feelings, beliefs and behavior of people. This collection is often accomplished through observation, interviewing or administering of questionnaires to a relatively large and representative sample of the population of interest (Aina & Ajiferuke, 2002:32).

3.3 Population

The term population refers to a large well defined group from which a sample is drawn and which is specified in very concrete terms (Neuman 2000:201). An example of population can be a person, a group, an organisation, a written document or symbolic message or even a social action that is being measured. To define the population, a researcher specifies the unit being sampled, the geographical location and the temporal boundaries.

This study targeted lecturers in the Departments of Library and Information Science responsible for teaching information literacy, library staff and students of the selected institutions. The population for students, academic staff and library staff of the University of Zululand, Durban University of Technology and the Mzuzu University is illustrated in table 1 below.

Table 1: Students, academic and library staff population.

Institution	Population		
	Students	Academic staff	Library staff
University of Zululand	8,706	281	34
Durban University of Technology	21, 316	595	72
Mzuzu University	1, 400	120	13

The data provided by Computer Security, IT ⁵(2007) for the University of Zululand, DUT Management Information Systems ⁶(2007), and Institutional Audit Portfolio Report ⁷(2007)

⁵ V. Kungwini (2007). Computer security, ITS Training Manager, University of Zululand: KwaDlangezwa.

for the Durban University of Technology and Senior Assistant Registrar for Academics⁸, for Mzuzu University.

3.4 Sampling

Neuman (2000:195-196) identifies two types of sampling namely probability sampling and non-probability sampling. Probability sampling is sampling in which the researcher can determine the chances each element in the sampling frame has to be included in the sample. It gives each and every member of the population an equal chance of being selected for the sample. Examples of types of probability sampling include simple random sampling, stratified sampling and cluster sampling.

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

This study used non-probability sampling, in particular quota sampling for students. Aina and Ajifuruke (2002:37-38) write that quota sampling attempts to create a representative sample by specifying quotas, or targets, of particular types of people that need to be included to represent the population. Once defined, the researcher approaches people in the relevant categories. People become sample members as long as the quotas have not been filled. The population in this study was first categorised according to faculties, levels of study whether undergraduate or post-graduate, male and female and then selected haphazardly. As for staff, the study used purposive sampling. Purposive sampling refers to a judgemental form of sampling in which the researcher, bases his or her knowledge of the population, handpicks certain groups or individuals for their relevance to the issue being studied (Aina and Ajifuruke, 2002:37-38).

⁶ Management Information Systems (2007). Durban University of Technology: Durban.

⁷ Institutional Audit Portfolio Report (2007). Durban University of Technology: Durban

⁸ Ngwira, Y. (2007). Senior Assistant Registrar-Academics, Mzuzu University: Malawi

3.4.1 Sample size and Sample frame

Sample size depends largely on the degree to which the sample population approximates the qualities and characteristics of the general population. Gay and Airasian in Leedy and Ormrod (2005:207) provide the following guidelines for selecting a sample size:

- For small population (with fewer than 100 people or other unit), there is little point in sampling. A researcher has to survey the entire population;
- If the population size is around 500, 50% of the population should be sampled;
- If the population size is around 1,500, 20% should be sampled and
- Beyond a certain point (at least 5, 000 units or more), the entire population size is almost irrelevant, and a sample size of 400 should be adequate.

The larger the population, the smaller the percentage, but not the number and one needs to get a representative sample. The larger the sample, the smaller the amount of sampling error to be expected. However, a larger sample does not guarantee good results if it is not representative (Leedy and Ormrod 2005:207). This study falls within the recommended sample size of 400. A sample frame refers to a list of population elements from which a sample can be drawn. In order to come up with a manageable sample size in this study, the sample size for students was calculated at 1.3% across the board for all the institutions under study. The library and academic staff were purposively hand-picked. The sample size and sample frame for the students, academic and library staff is presented in Table 2 below and Table 3 on the next page.

Table 2: Sample size for students.

Institution	Population	Sample size.	%
University of Zululand	8, 706	113	1.3
Durban University of Technology	21,316	277	1.3
Mzuzu University	1,400	18	1.3

Table 3: Sample size for Library and academic and staff.

Institution	Personnel targeted
University of Zululand	1 Lecturer–Library and Information Science Department 1 Senior Librarian
Durban University of Technology (M.L Sultan Campus)	1 Subject Librarian
Mzuzu University	1 Lecturer – Library and Information Science Department 1 Senior Librarian

3.5 Research instruments

Research instruments are tools that are used to collect data for a research project. Both qualitative and quantitative studies largely use the same research instruments for data collection. Examples of data collection techniques include, questionnaires, interviews observations and so on (Force 1997:143).

3.5.1 Questionnaire

A questionnaire consists of a set of questions for submission to a number of persons or respondents in order to gather data (Onyango, 2002:65). Questionnaires are generally categorised as open-ended or unstructured questionnaires and closed-ended or structured questionnaires (Onyango, 2002:65 and Babbie, 2005:254). In the case of closed-ended or structured questionnaires, the respondent is asked to select an answer from among a list provided by the researcher. Closed-ended questions are very popular in survey research because they provide a greater uniformity of responses and are more easily processed than open-ended ones (Babbie, 2005:254).

In open-ended or unstructured questionnaires, the respondent is asked to provide his or her own answer to the question (Babbie: 2005:254). Open-ended or unstructured questionnaires are designed to permit free responses from participants rather than ones limited to specific alternatives. It provides for a great depth of response. The respondents reveal their frame of

reference and possible reasons for their responses (Onyango (2002: 65). However, the main drawback of open-ended or unstructured questionnaires according to Onyango (2002:65) is that, because it requires greater effort on the part of the respondents, returns are often meager, particularly if self-administered. This is because open-ended questions tend to discourage responses, as they typically take longer to answer. In addition, there is no limit to possible responses to an open-ended questionnaire. This makes answers more difficult to categorise and analyse than those of closed-ended or structured questionnaires. This sometimes makes the open-ended item difficult to interpret, tabulate and summarise in the research report. It is for this reason that a single questionnaire should contain both open-ended and closed-ended questions. In practice, a combination of structured and unstructured question is most efficient (Onyango 2002:65-66).

3.5.2 The Interview

The other most utilised data collection method in qualitative research studies is the interview. An interview is the process whereby the researcher interviews the target population either by phoning or in a face to face situation. Questions are asked and recorded by the researcher rather than the respondent (Force, 1997:43). In addition, an interview involves direct personal contact with the participant who is asked to answer questions relating to the research problem. One method of getting people to express their views is the non-scheduled interview, which consists of asking respondents to comment on broadly defined issues. The interviewees are free to expand on the topic as they see fit, to focus on particular aspects, to relate their own experiences, and so on (Bless and Higson-Smith, 2000:104-105). An interview also allows for possibilities of seeking the same information in several ways at various stages of the interview, hence checking the truthfulness of the responses. The interviewer will intervene to ask for clarification or further explanation, but not to give directives or to confront the interviewee with probing questions (Onyango, 2005:84). Usually no time limit is fixed for completing an interview of this kind (Bless and Higson-Smith, 2000:104-105). Interviews are structured when the questions to be asked have been listed in what is called an interview schedule. The interviewer will adhere strictly to the questions listed in the schedule. The questions are presented to each respondent in exactly the same way to minimise the role and influence of

the interviewer and to enable a more objective comparison of the results (Onyango, 2005:84-85 and Bless and Higson-Smith, 2000:105).

3.5.3 Observation.

Observation provides a rich source of hypotheses about behaviour and so it can be a first step in discovering why people behave the way they do. Observation can be categorised mainly into participant and non-participant observation. In participant observation, observers play a dual role, they observe people's behaviour and they participate actively in the situation they are observing (Bless and Higson-Smith, 2000:103-104, Shaughnessy, Zechmeister and Zechmeister, 2006:111-114 and Onyango, 2002:92). In undisguised participant behaviour, individuals who are being observed know that the observer is present for collecting information about their behaviour. In disguised participant observation, those who are being observed do not know that they are being observed. People do not always behave in the way they ordinarily would when they know their behaviour is being recorded. People' behaviour is likely to be affected by knowing that they are being watched (Shaughnessy, Zechmeister and Zechmeister, 2006: 111 and Onyango, 2002:92). It is because of this possibility that researchers hide the real purpose of their presence by themselves becoming participants. They join the community or group under investigation as one of its members, sharing in all activities. People that are being observed do not know that they are being observed. Becoming an insider allows a deeper insight into the research problem, since the researcher enjoys the confidence of participants and shares their experiences without disturbing their behaviour (Bless and Higson-Smith, 2000:104).

Non-participant observation, according to Bless and Higson-Smith, (2000:103), is the recoding of events as observed by an outsider. A distinction can be made between obtrusive non-participant observation and unobtrusive non-participant observation. In obtrusive non-participant observation, the participant is undisguised as she or he is very visible, but does not directly participate. For example, a researcher can observe the social behaviour of people interacting in shops, bars, by recording the number of times people who do not know each other exchange words, the topic and length of conversation, the way the

interaction starts and ends, and so on (Onyango, 2002:92). On the other hand, in unobtrusive non-participant observation, the researcher is completely disguised. For instance, a researcher may decide to gather data on vandalism of library materials by collecting all the books that have been torn in the library or damaged in one way or another.

There are number of issues to consider alongside a decision to use observation technique. One of these is whether the participant observers should make their purpose known to members of the group being observed. One school of thought feels that concealing the intentions of the participant observers raises ethical questions of an invasion of privacy and established a false, hypocritical, interpersonal relationship with the individuals in the group. The other school of thought is of the view that in some cases, informing those to be observed of the complete purpose of the study may affect behaviours as to make the study meaningless (Onyango, 2002:92).

This study used questionnaires, interviews and observations to gather data. Questionnaires were used because they give respondents time and freedom to independently respond to issues. The questionnaires contained both open and closed ended questions in order to cater for both qualitative and quantitative techniques. Questionnaires were divided into the following six sections:

Section one

The section sought to solicit information on demographic data of the respondents such as institutional affiliation, level of study and gender.

Section two

The section sought to elicit information on embedment of information literacy into the curricular of the universities under study.

Section three

The section sought to elicit information on modes of teaching and learning of information literacy.

Section four

The section sought to elicit information on problems being faced in the teaching and learning of information literacy.

Section five

The section sought to elicit suggestions on the most effective learning and application of information literacy module and

Section six

Finally, the section sought to elicit information on students' ability to independently identify, locate, retrieve and use information.

The researcher physically self-administered the questionnaires to students.

Students' behaviours were also observed over a period of one week, in their respective libraries on how they search, locate, identify and retrieve information. In order to do so, an observation schedule was prepared to record their behaviours. Each participant was observed for a period of one (1) day. The purpose was to establish what was taking place in the libraries and particular emphasis was paid to systematic noting and recording of events and behaviour of students in searching, locating, identifying and retrieving information in the library. Attention was also paid to time the students took from searching to retrieving information. In order for the participants not to know that they were being observed, in case they changed their behaviour, the researcher applied participant observation in which students' behaviours were observed and the researcher participated actively in situations that were being observed. The researcher also intended to enjoy the confidence of participants and shares their experiences without disturbing their behaviour.

In order to collect in-depth information about the teaching of information literacy, interviews were conducted face to face with librarians and lectures who teach information literacy. This was accomplished through the use of interview schedules for academic staff and librarians. The interview schedule for academic staff was divided into six sections as follows:

Section one

Section one sought to elicit demographic data of the interviewees.

Section two

The section sought to elicit information on the embedment of information literacy into the curricula of the universities under study; if so who was responsible for the design and formulation of the information literacy syllabus and how the syllabus was designed.

Section three

The section sought to elicit information on responsibility for the teaching of information literacy such as what topics were covered in teaching information literacy, the mode of teaching used and to whom the course or module of information literacy was taught, and so on.

Section four

The section sought to ascertain the existence of collaboration between library staff and the department responsible for teaching information literacy and if there any collaboration between them and the roles and responsibilities of the teaching department and the library staff.

Section five

The section sought to find out the problems faced in the delivery of information literacy; if there were any problems, what problems were being faced and suggestions to the mentioned problems.

Section Six

Lastly, section six sought suggestions from faculty staff on the most effective method for teaching information literacy to the students.

Similarly, the interview schedule for library staff was divided into six sections.

Section one

The section sought demographic data of the interviewees such as institutional affiliation, and the rank.

Section two

Section two sought to establish responsibility for the teaching of library orientation programme/information literacy, topics covered in teaching library orientation programme/information literacy and the modes of teaching used.

Section three

The section sought to ascertain the existence of collaboration between library staff and the department responsible for teaching of library orientation programme or information literacy. The section also sought to establish the roles and responsibilities of the teaching department and the library staff.

Section four

Section four sought to find out the problems faced in the teaching of library orientation programme or information literacy and suggestions to the mentioned problems.

Section five

Lastly, section the sought suggestions from library staff on the most effective method for teaching library orientation programme or information literacy to the students.

See the appendix for the questionnaire and interview schedules used.

3.6 Data collection procedures

Permission to conduct the study at the selected institutions was sought and granted. Legal and ethical issues pertaining to this study were also adhered to. The researcher drew up a list of academic staff, librarians, and students and physically distributed and collected

questionnaires from them. Interviews were conducted face to face with Librarians and Lecturers responsible for teaching information literacy.

3.7 Pilot Study

In order to test the reliability of the research instruments, a pilot study was carried out at the University of Zululand. Problems encountered included students not understanding the meaning of information literacy, because initially, the definition of the term information literacy was not provided in the questionnaire, and most students indicated taking a module in information literacy at the University of Zululand. This brought about problems of the validity. An adjustment was made in which a brief definition of the term information literacy was inserted in section 2.

The other problem was that some questions such as ability to independently identify, locate, retrieve and use information were not clear and the question was misunderstood by the students, leading to the results being skewed. An adjustment was made so as to specify the type of information such as books, databases, encyclopedia, journals, newspapers and handbooks and directories.

An interview schedule for library staff was also problematic in that an assumption was made that all libraries teach information literacy, which was for a course or module. Questions such as “responsibility for the teaching of information literacy” had to be changed to read, “responsibility for teaching library orientation programme or information literacy” so as to cater for some libraries that do not formally teach information literacy. Similarly, all questions that had an information literacy component had to be adjusted to library orientation programme or information literacy.

After the necessary adjustments were made to the instruments, a final survey commenced.

3.8 Data Analysis

Data were analysed using the Statistical Package for Social Sciences (SPSS), a computer - aided software. The results were represented quantitatively using tables, graphs, Pie charts and percentages.

3.9 Problems encountered

Problems encountered included difficulty in collecting preliminary information on the number of registered students at the Durban University of Technology; the late release of the research funds which affected the time frame of the research and the slow response to a request for permission to conduct the study at the Durban University of Technology.

3.10 Summary

This chapter has presented the methodology and the methods that were used in carrying out the study, the sample and sampling used research instruments that were used in gathering data, data analysis and problems encountered. It is hoped that the problems encountered would offer as a learning experience, so that whoever wishes to replicate the research, could avoid going through similar problems.

Data Presentation and analysis will be presented in chapter four.

Bibliography

Appendices

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 Introduction

The chapter presents results collected from three sets of data namely questionnaires, observations with students and interviews with academic and library staff from the University of Zululand (Unizul), the Durban University of Technology (DUT) and Mzuzu University (Mzuni). The chapter provides perspectives and an insight into the research findings by collating results from the three sets of data and analysing them critically through comparison. The analysis of results is made within the framework of the research aim, which was to investigate the teaching and learning of information literacy in some selected institutions of higher learning in KwaZulu-Natal and Malawi. The study's targeted students and their responses are tabulated below:

Table 4: Target population and their responses. (N= 287).

Institution	Students targeted	Students Responded	%
University of Zululand	113	89	79
Durban University of Technology	277	180	65
Mzuzu University	18	18	100

The response rates could have been better, had it not been that students were busy with their end of term or semester tests and examinations. Four (4) students from each of the universities studied were observed to determine how they go about searching, locating, identifying, and retrieving information sources from the library.

One (1) lecturer responsible for teaching Information Literacy and one (1) library staff member responsible for library orientation programme were interviewed at Unizul. At DUT, one (1) library staff member responsible for teaching information literacy in the library was interviewed. At Mzuni, one (1) lecturer responsible for teaching Information Literacy was interviewed and also (1) library staff member responsible for the library

orientation programme were interviewed.

4.2 Students’ Analysis

Section 1: Personal Information

The section sought to determine personal information of the respondents such as institutional affiliation and faculty that the respondents belonged to, level of study and gender of the respondents.

4.2.1 Institutional affiliation, Faculty and level of study of Respondents.

The results presented in Table 5 below and Table 6 on the next page show the variations of responses from the sampled faculties and level of study among students at Unizul, DUT and Mzuni. Students were asked to state their institution and faculty and responded as illustrated in the sections that follow.

Table 5: Responses per institutional affiliation and faculty. (N=287)

	Unizul		DUT		Mzuni
Faculty	Frequency	%	Frequency	%	Frequency
Arts	23	26	42	23	0
Science and Agriculture	22	25	0	0	0
Education	20	22	0	0	4
Commerce, Law and Administration	24	27	0	0	0
Accounting and Informatics	0	0	50	28	0
Engineering, Science and the Built Environment	0	0	42	23	0
Health Sciences	0	0	46	26	3
Information Science and communications	0	0	0	0	4
Environmental Sciences	0	0	0	0	4
Hospitality and Tourism Management	0	0	0	0	3
Total	89	100	180	100	18

The results shown in Table 5 on the previous page reveal that at the Unizul, there were eighty nine (89) respondents, at DUT, there were one hundred and eighty (180) respondents, and at Mzuni, there were eighteen (18) respondents.

Findings of the level of study at the Unizul, DUT and Mzuni are illustrated in Table 6.

Table 6 : Level of Study. (N= 287)

	Unizul		Dut		Mzuni
Level of Study	Frequency	%	Frequency	%	Frequency
Under-graduate	69	78	140	78	17
Post-graduate	20	22	40	22	1
Total	89	100	180	100	18

An assessment of the level of study among the sampled students from the three Universities yielded the following results: There were 226 undergraduate respondents of which, 69 (78%) respondents belonged to Unizul, 140 (78%) of the respondents belonged to DUT and 17 respondents belonged to Mzuni.

There were sixty one (61) post-graduate students, of which 20 (22%) belonged to Unizul, 40 (22% belonged to DUT, and only 1 respondent belonged to Mzuni.

4.2.2 Gender of the respondents.

The results from the analyses of gender are illustrated in Table 7 on the next page

Table 7: Gender of the respondents by institution and faculty. (N= 287)

	Gender									
	Unizul				DUT				Mzuni	
	Male		Female		Male		Female		Male	Female
Faculty	Fre	%	Fre	%	Fre	%	Fre	%	Fre	Fre
Arts	10	11	13	15	12	7	30	17	0	0
Science and Agriculture	9	10	13	15	0	0	0	0	0	0
Education	9	10	11	12	0	0	0	0	2	2
Commerce, Law and Administration	8	9	16	18	0	0	0	0	0	0
Accounting and Informatics	0	0	0	0	22	12	28	16	0	0
Engineering, Science and the Built Environment	0	0	0	0	31	17	11	6	0	0
Health Sciences					19	10	27	15	1	2
Information Science and communications	0	0	0	0	0	0	0	0	2	2
Environmental Sciences	0	0	0	0	0	0	0	0	2	2
Hospitality and Tourism Management	0	0	0	0	0	0	0	0	1	2
Total	36	40	53	60	84	46	96	54	8	10

An analysis of the gender in Table 7, shows that the majority of the respondents were female who accounted for 159 (55%) of the 287 respondents, with the Unizul accounting for 53 (19%), DUT 96 (33%) and Mzuni 10. The male respondents at the three institutions accounted for 128 (45%) out of the total 287 respondents, with Unizul accounting for 36 (13%), DUT 84 (29%), and Mzuni 8 .

4.3. Section 2: Offer and teaching of Information Literacy.

The objective of this section was to determine the students’ awareness of the availability of the course or module in information literacy, attendance of information literacy classes, title and code of the of the course or module, department responsible for information literacy module or course, topics covered in the course or module of Information Literacy,

satisfaction with the content being offered in information literacy module or course, areas that need to be removed and /or added from and to the module or course, and relevance of the Course or module of Information Literacy. The findings are presented in the next sections.

4.3.1 Awareness of the availability of the course or module in information literacy.

The results of institutions that offer a course or module in information literacy and their responses are presented in Table 8.

- A = Aware, NA= Not aware, DNK= Do not Know

Table 8: Awareness of the availability of the Course or Mod teaching teaching ule of Information Literacy. (N= 287)

	Unizul						DUT						Mzuni		
	A		NA		DnK		A		NA		DnK		A	NA	DnK
Faculty	F	%	F	%	F	%	F	%	F	%	F	%	F	F	F
Arts	12	13	0	0	11	12	0	0	12	7	30	17	0	0	0
Science and Agriculture	7	8	0	0	15	17	0	0	0	0	0	0	0	0	0
Education	1	1	6	7	13	15	0	0	0	0	0	0	2	0	2
Commerce, Law and Administration	0	0	2	2	22	25	0	0	0	0	0	0	0	0	0
Accounting and Informatics	0	0	0	0	0	0	3	2	14	8	33	18	0	0	0
Engineering, Science and the Built Environment	0	0	0	0	0	0	1	1	8	4	33	18	0	0	0
Health Sciences	0	0	0	0	0	0	0	0	18	10	28	16	0	0	3
Information Science and communications	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0
Environmental Sciences	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1
Hospitality and Tourism Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	20	22	8	9	61	69	4	2	52	29	124	69	7	2	9

Responses to an awareness of the availability of the course or module of information literacy in the three institutions as illustrated in Table 8 on the previous page, shows that, the majority of the respondents, 194 (68%) out of the 287 respondents indicated that they did not know about the availability of the course or module of Information literacy, with respondents from Unizul accounting for 61 (21%), DUT 124 (43%) and Mzuni accounting for 9 respondents. This is because most respondents do not take the module or course of information literacy.

There were 31 (11%) out of the 287 respondents from the three institutions that indicated that they were aware of the availability of the course or module of information Literacy, of these, the Unizul accounted for 20 (22%) respondents, DUT accounted for 4 (3%) respondents and Mzuni accounted for 7 respondents.

4.3.2 Attendance of the course or module in Information Literacy.

The question sought to find out whether students from the three Universities attend a formal course or module in Information Literacy or not. Results are illustrated in Table 9 on the next page.

Table 9: Attendance of a formal course or module in Information Literacy. (N= 287)

Faculty	Unizul				DUT				Mzuni	
	Yes		No		Yes		No		Yes	No
	Fre	%	Fre	%	Fre	%	Fre	%	Fre	Fre
Arts	10	11	13	15	0	0	42	23	0	0
Science and Agriculture	4	5	18	20	0	0	0	0	0	0
Education	0	0	20	22	0	0	0	0	0	4
Commerce and Administration	0	0	24	27	0	0	0	0	0	0
Accounting and Informatics	0	0	0	0	2	1	48	27	0	0
Engineering, Science and the Built Environment	0	0	0	0	0	0	42	23	0	0
Health Sciences	0	0	0	0	0	0	46	26	0	3
Information Science and communications	0	0	0	0	0	0	0	0	2	2
Environmental Sciences	0	0	0	0	0	0	0	0	0	4
Hospitality and Tourism Management	0	0	0	0	0	0	0	0	0	3
Total	14	16	75	84	2	1	178	99	2	16

Responses on the attendance of a formal course/module in Information Literacy by students at the three institutions presented in Table 9 above, shows that the majority, 269 (94%) out of the 287 respondents indicated that they did not attend a formal course or module in information literacy. Of these, 75 (84%) respondents were from Unizul, 178 (99%) respondents were from DUT and 16 (89%) respondents were from Mzuni.

Only 18 (28%) out of 287 respondents from the three institutions indicated attending a formal course or module in information literacy, of these, 14 (16%) respondents were from Unizul, 2 (1%) respondents were from DUT and 2 (11%) respondents were from Mzuni.

4.3.3. Title and code of the course or module

An analysis of the title and code of the course or module by the students at the three institutions yielded results summarised in Table 10 below.

Table 10 : Title and code of the course or module. (N= 287)

Title and code of the course/ module	Unizul				DUT				Mzuni	
	Response		No Response		Response		No Response		Response	No Response
	Fre	%	Fre	%	Fre	%	Fre	%	Fre	Fre
Information Literacy/ AIHLOO/ AIHLOI	14	16	75	84	0	0	0	0	0	0
Information Retrieval II	0	0	0	0	2	1	178	99	0	0
Information Literacy/ LIS 1204	0	0	0	0	0	0	0	0	2	16

Respondents that had indicated taking a formal course or module of Information Literacy when asked to state the Title and Code of the course or module, responded as follows; 14 (16%) respondents from the Unizul, indicated the title as Information Literacy and the code as AIHLOO/ AIHLOI, 2 (1%) respondents from DUT cited the name of the course as Information Retrieval II, but they did not give the code of the course and the 2 respondents from Mzuni, indicated the title as Information Literacy and the code as LIS 1204.

4.3.4 Department responsible for information literacy course or module.

When asked to state the Departments responsible for teaching formal Information Literacy Course or Module, 14 (16%) respondents from the Unizul, 2 (1%) respondents from DUT, and 2 respondents from the Mzuni all indicated the Departments of Library and Information Science as being responsible for teaching the formal course or module of Information Literacy.

4.3.5 Topics covered in the course or module of Information Literacy.

The topic coverage in the course or module of Information Literacy is considered by this study a prerequisite for enhancing the students' ability to demonstrate and appreciate theories and applications of the course or module in the information industry. Respondents that ascribed to attending the course or module of Information Literacy responded as follows:

Unizul

The 14 (16%) respondents from the Unizul cited the following topics:

- Mastering information skills;
- Information sources;
- Search engines, searching and retrieval tools;
- Databases;
- Referencing and citations,;
- Copyright;
- Note taking and communication and
- Information handling skills.

Mzuni

The 2 respondents from Mzuni cited the following topics:

- Identifying the need for information;
- Selecting the most appropriate information systems ;
- Acquiring pertinent information;
- Evaluating and information manipulating information in usable form, and
- Communicating information.

DUT

The 2 (11%) respondents from DUT cited the following topics:

- Searching and retrieval;
- Basic searching;
- Searching strategies;
- Search engines and
- Databases

4.3.6 Satisfaction with the content being offered in information literacy.

An assessment of the satisfaction with the content being offered in information literacy is presented in Table 11.

Table 11: Satisfaction with the content being offered in information literacy. (N= 287)

Institution	Satisfied		Not satisfied		No response	
	Frequency	%	Frequency	%	Frequency	%
Unizul	11	12	3	3	75	84
DUT	0	0	0	0	180	100
Mzuni	2	0	0	0	16	0

The results presented in Table 11 above, show that 13 (4%) out of the 287 respondents from the three institutions indicated being satisfied with the content being offered, out of these, 11 (12%) respondents were from Unizul and 2 respondents were from Mzuni. Respondents that indicated not being satisfied with the content being offered cited the content as being old as the main reason. Respondents from the DUT did not indicate any reason.

The 271 (94%) non- responses in the three institutions can be attributed to the fact that most students do not take the course of Information Literacy (Refer to Table 9).

4.3.7 Areas or content that need to be removed and /or added.

The respondents from the University of Zululand that indicated not being satisfied with the content of information literacy being offered responded to this question as follows:

- That more practical sessions on library use such as searching for journals, accessing online-databases should be offered and
- That the historical component should be removed to pave way for modern topics in information literacy such web learning.

4.3.8 Relevance of the Course or module of Information Literacy.

The objective of the question was to seek respondents’ views on the relevance of a course or module of Information Literacy in institutions of higher learning. The responses are presented in Figure 1 below.

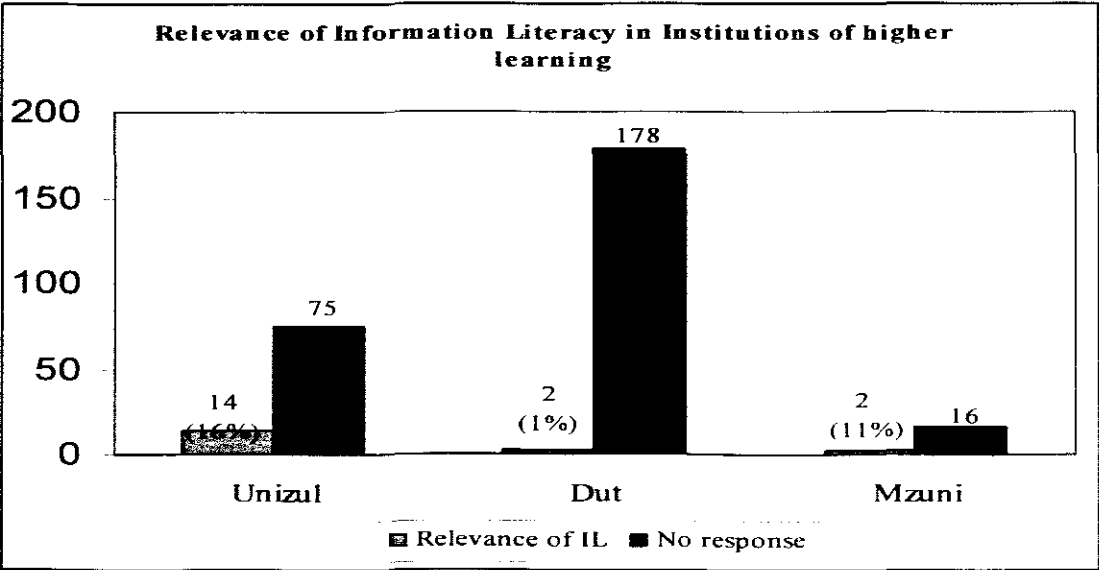


Figure 1: Relevance of information literacy course or module in institutions of higher learning. (N=287)

Results in Figure 1 above show that 18 (6%) out of the 287 respondents from the three institutions indicated that it was relevant to have the course/module of information literacy. The respondents indicated attending a Module or Course in Information Literacy. Of these 14 (16%) respondents were from Unizul, 2 (1%) respondents were from DUT and 2 respondents were from Mzuni. The 269 (94%) non-responses are because of respondents that did not indicate taking the Module or Course of Information Literacy.

4.4 Section 3: Mode of teaching information literacy.

This section intended to find out the mode of teaching information literacy classes.

4.4.1 Mode of teaching the information literacy classes.

An assessment of the modes of teaching the information literacy classes yielded responses illustrated in Figure 2 below.

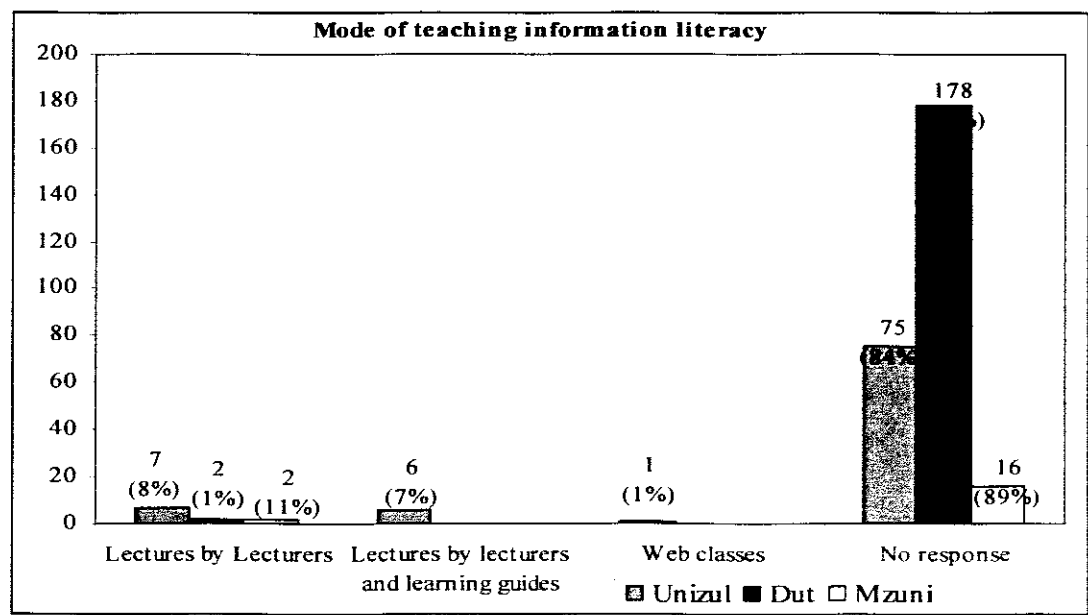


Figure 2: Mode of teaching information literacy classes. N= (287)

Results in Figure 2 above show that 11 (4%) out of the 287 respondents from the three institutions indicated that the mode of teaching information literacy classes was mostly through lectures by lecturers, and there were 6 (7%) respondents who indicated a combination of lectures by lecturers and learning guides and 1 (1%) respondent indicated web classes. The 269 (94%) non-responses are due to the fact that the respondents do not take the module or course of Information Literacy.

4.4.2 Learning modes offered by the module or course.

The objective sought to ascertain the learning modes offered by the information literacy course or module. The findings are presented in Figure 3 on the next page.

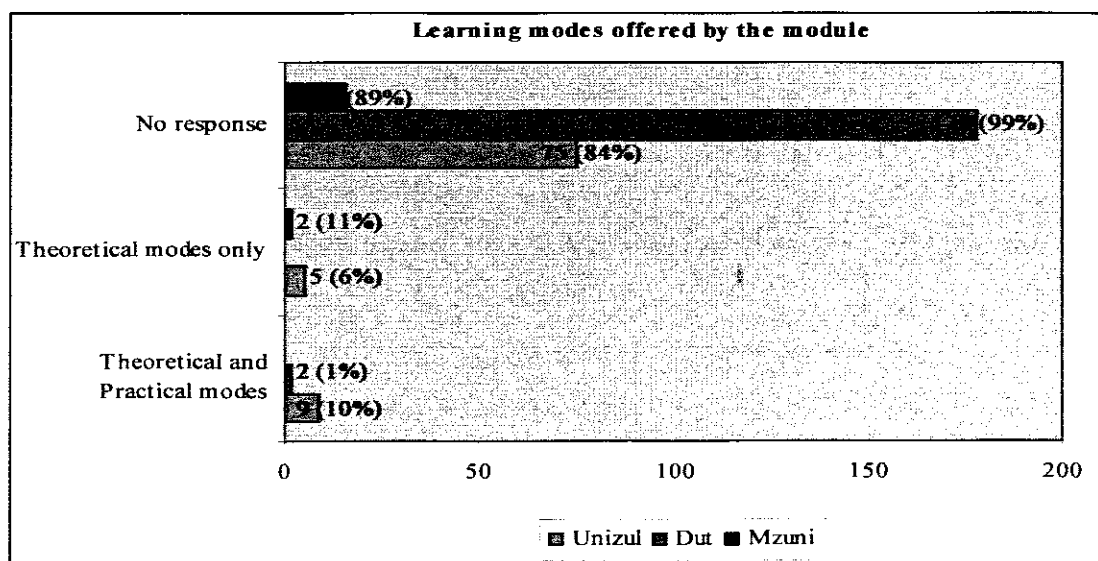


Figure 3: Learning modes offered by the module or course. N= (287)

Results presented in Figure 3 above, are those ascribed to respondents that had indicated taking a formal Module or Course in Information Literacy. There were 11 (4%) out of 287 respondents that indicated that the learning mode is offered by both theoretical and practical, of these 9 (10%) respondents were from Unizul and 2 (1%) respondents were from DUT. There were 7 (2%) respondents that indicated the learning mode being offered by theoretical mode only, of these 5 (6%) respondents were from Unizul and 2 respondents were from Mzuni.

The 269 (94%) non-responses indicate that the respondents did not take the formal Module or Course of Information Literacy.

4.4.3 Learning modes favoured by the students.

The objective of the question was to find out the learning modes favoured by the students. From the qualitative results, respondents that ascribed to attending a course or module in information literacy answered as follows:

Unizul

- Eleven (13%) respondents favoured both theoretical and practical modes;
- Two (2%) respondents favoured practical modes only and

- One (1%) respondent favoured group work and discussions.

Mzuni

- Two respondents from Mzuni indicated that they favoured both theoretical and practical modes of learning.

The 2 respondents from DUT did not indicate the learning modes that they favoured.

4.5 Problems faced in learning and application of information literacy.

The question solicited data on problems that students faced in learning and application of the course or module of Information Literacy. There were 6 (6%) out of 89 respondents from the **Unizul** that responded to the question as follows:

- One (1%) respondent cited a lack of adequate practicals being offered, hence making it difficult for students to be competent in the full utilisation of the library;
- One (1%) respondent indicated that the class was overcrowded with students from other departments (Communication Science and Agriculture Science) and could not grasp what was being taught. One (1%) respondent was of the view that lack of fluency in English language contributed to her failing, and
- Three (3%) respondents viewed the duration of eight (8) weeks as being too short, yet lot of content was churned out, making it difficult for students to master the content within such a short period of time.

At Mzuni 2 out of 18 respondents responded to this question as follows:

- The shortage of computers, led to a limited access to computers and lack of practicals.

The 2 respondents from **DUT** did not indicate the difficulties that they faced in the learning and application of the course of “Information Literacy” (Information retrieval).

4.6 Suggestion of solutions to problems.

Suggestions offered by the respondents include the following:

Unizul

- More practical classes than theory should be offered;
- Smaller manageable classes of twenty five to thirty students should be offered;
- Either the duration of the course/module should be extended beyond eight (8) weeks or the content should be reduced;
- Some tutors should be sought to help out the lecturer and
- Communicating in English should be made mandatory.

Mzuni

Suggestions offered by the respondents include the following:

- More computers should be purchased by the University and
- Students should frequently be sent to the ICT Laboratories and the library for practicals.

4.7 Students' perception of their ability to independently identify, locate, retrieve and use information sources.

The objective of the question was to: firstly establish whether the students have the abilities to independently identify, locate, retrieve and use information sources such as books, databases, encyclopedias, handbooks and directories, journals and newspapers; secondly, to ascertain students' ability to independently identify and locate collections in the Library by using the Open Access Public Catalogue (OPAC), Indexing and Abstracting journals; thirdly, to find out access points used in the retrieval of information, fourthly, to establish purposes for the use of information, fifthly to find out students' use of citations and references in academic works and sixthly to ascertain how respondents learnt about citing and referencing and problems faced by respondents that do not know how to write citations and references.

There are two related concepts in information literacy, which are, one; searching and two; locating information. Information literacy equips one to develop the two abilities before

enhancing other aspects like information retrieval and use. The respondents are split according to those that had received formal Information Literacy training in class in the form of a Module or Course and those that had not received formal Information Literacy training from class, but had received Information Literacy training in the Library. The respondents were asked to indicate whether they were able to independently identify locate, retrieve and use information sources such as books, databases, encyclopedias, handbooks and directories, journals and newspapers. An investigation into students' abilities to independently identify, locate, retrieve and use information is presented in Table 12.

- Bks = Books,**
- Db s= Database,s**
- En c= Encyclopedias,**
- Hbk& Dir = handbooks and Directories,**
- Ident= Identify,**
- Info sour = Information source,**
- Jour = Journals,**
- Loc= Locate,**
- N/ps =Newspapers,**
- Non Res= Non Response,**
- Ret= Retrieve**

Table 12: Students' perception of their ability to independently identify, locate, retrieve and use information sources. (N= 287)

Info sour	Unizul															
	With formal Information Literacy training (N=14)								Without formal Information Literacy training /With library training/other modules or courses (N=75)							
	Ident	Non Res	Loc	Non Res	Ret	Non Res	Use	Non Res	Ident	Non Res	Loc	Non Res	Ret	Non Res	Use	Non Res
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Bks	14	0	14	0	14	0	14	0	8	67	8	67	8	67	8	67
N/ps	13	1	13	1	13	1	13	1	10	65	15	60	15	60	15	60
Db	4	11	4	11	4	11	4	11	3	72	3	72	3	72	3	72
Jour	8	6	8	6	8	6	8	6	3	72	3	72	3	72	3	72
Enc	4	10	4	10	4	10	4	10	0	75	0	75	0	75	0	75
Hbk & Dire	3	11	3	11	3	11	3	11	0	75	0	75	0	75	0	75
DUT																
Info sour	With formal Information Literacy training (N=2)								Without formal Information Literacy/ With library training/other modules or courses (N=187)							
	Ident	Non Res	Loc	Non Res	Ret	Non Res	Use	Non Res	Ident	Non Res	Loc	Non Res	Ret	Non Res	Use	Non Res
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Bks	2	0	2	0	2	0	2	0	131	56	131	56	131	56	131	56
N/ps	2	0	2	0	2	0	2	0	138	49	138	49	138	49	138	49
Db	0	2	0	2	0	2	0	2	40	147	40	147	4	183	40	183
Jour	2	0	2	0	2	0	2	0	46	141	46	141	46	141	46	141
Enc	0	2	0	2	0	2	0	2	20	167	20	167	20	167	20	167
Hbk & Dire	0	2	0	2	0	2	0	2	10	177	10	177	10	177	10	177

Table 12: Students' perception of their ability to independently identify, locate, retrieve and use information sources. (N= 287)																
Mzuni																
With formal Information Literacy training (N=2)									Without formal Information Literacy training / With library training/other modules or courses (N=16)							
Info sour	Ident	Non Res	Loc	Non Res	Ret	Non Res	Use	Non Res	Ident	Non Res	Loc	Non Res	Ret	Non Res	Use	Non Res
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Bks	2	0	2	0	2	0	2	0	6	10	6	10	6	10	6	10
N/ps	2	0	2	0	2	0	2	0	4	12	4	12	4	12	4	12
Dbs	1	1	1	1	1	1	1	1	2	14	2	14	2	14	2	14
Jour	2	0	2	0	2	0	2	0	1	15	1	15	1	15	1	15
Enc	2	0	2	0	2	0	2	0	0	16	0	16	0	16	0	16
Hbk & Dir	0	0	0	0	0	0	0	0	0	16	0	16	0	16	0	16

Results presented in Table 12 on the previous pages, regarding respondents that had received formal Information Literacy training from the module/ course of information Literacy, show that 18 out of 287 respondents, from the three institutions had the perception that they had abilities to independently identify, locate, retrieve and use books, 17 respondents had the perception that they had abilities to independently identify, locate, retrieve and use newspapers, 5 respondents had the perception that that they had abilities to independently identify, locate, retrieve and use databases, 12 respondents had the perception that that they had abilities to independently identify, locate, retrieve and use journals, 6 respondents had the perception that that they had abilities to independently identify, locate, retrieve and use encyclopedias and 3 respondents had the perception that they had abilities to independently identify, locate, retrieve and use handbooks and directories.

Pertaining to the 269 respondents that had not received formal information literacy training in class, but had received information literacy training elsewhere such as in the Library during the library orientation, or from other courses such as communication skills/studies or computer literacy, the responses are as follows:

Out of the 269 respondents, 145 had the perception that they had abilities to independently identify, locate, retrieve and use books, 152 respondents had the perception that they had abilities to independently identify, locate, retrieve and use newspapers, 45 respondents had the perception that they had abilities to independently identify, locate, retrieve and use databases, 50 respondents had the perception that they had abilities to independently identify, locate, retrieve and use journals, 20 respondents had the perception that that they had abilities to independently identify, locate, retrieve and use encyclopedias and 10 respondents had the perception that they had abilities to independently identify, locate, retrieve and use handbooks and directories.

The above results show that most respondents had mostly an ability to independently identify, locate, retrieve and use newspapers and books. The information source that the

respondents had the perception that they had least ability to independently identify, locate, retrieve and use were handbooks and directories.

4.7.1 Students' perception of their ability to independently identify and locate collections in the Library by using the Open Access Public Catalogue (OPAC), Indexing and Abstracting journals.

The use of retrieval tools such as the OPAC help users to search, identify, locate and retrieve information. An abstract journal provides a guide to the content of periodicals and other information sources, it enables users to identify, locate and retrieve information. An index is an alphabetical list of names, places and subjects that a user could use for identifying, locating and retrieving information.

Results are presented in Table 13 on the next page.

Inst= institution, OP= OPAC, Ind= index and AJ= Abstract journals

Table 13: Students' perception of their ability to independently identify and locate services in the Library by using the OPAC, indexing and abstracting journals.
(N=287)

Unizul																
	With formal Information Literacy training (N=14)								Without formal Information Literacy training/ with library training/other modules or courses (N=75)							
Tool	Ident	Non Res	Loc	Non Res	Can Not Ident	Non Res	Can Not Loc	Non Res	Ident	Non Res	Loc	Non Res	Can Not Ident	Non Res	Can Not Loc	Non Res
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
OP	14	0	14	0	0	14	0	14	8	67	8	67	27	48	27	48
Ind	10	4	10	4	4	10	4	10	4	71	4	71	42	33	42	33
AJ	7	7	6	8	7	7	8	6	3	72	3	72	50	25	50	25
DUT																
	With formal Information Literacy training (N=2)								Without formal Information Literacy training / with library training/other modules or courses (N=187)							
Tool	Ident	Non Res	Loc	Non Res	Can Not Ident	Non Res	Can Not Loc	Non Res	Ident	Non Res	Loc	Non Res	Can Not Ident	Non Res	Can Not Loc	Non Res
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
OP	2	0	2	0	0	2	0	2	131	56	131	56	20	167	20	167
Ind	0	2	0	2	0	2	0	2	100	87	100	87	0	187	0	187
AJ	0	2	0	2	0	2	0	2	40	147	40	147	0	187	0	187
Mzuni																
	With formal Information Literacy training (N=2)								Without formal Information Literacy training/ with library training/other modules or courses (N=16)							
Tool	Ident	Non Res	Loc	Non Res	Can Not Ident	Non Res	Can Not Loc	Non Res	Ident	Non Res	Loc	Non Res	Can Not Ident	Non Res	Can Not Loc	Non Res
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
OP	2	0	2	0	0	2	0	2	6	10	6	10	0	16	0	16
Ind	2	0	2	0	0	2	0	2	5	11	5	11	11	5	11	5
AJ	2	0	2	0	0	2	0	2	3	14	3	14	13	4	13	3

Results presented in Table 13 on the previous page, show that of the respondents that had received formal information literacy training, 18 out of the 287 respondents had the perception that they had abilities to independently identify and locate collections in the library by using the OPAC, 12 respondents had the perception that they had abilities to independently identify and locate collections in the library by using indexing journals, while 4 respondents had perceptions that they could not identify and locate collections in the library by using indexing journals and 9 respondents had the perception that they had abilities to independently identify and locate collections in the library by using abstracting journals and respondents indicated that they could not independently identify and locate collections in the library by using abstracting journals.

While respondents that had not received information literacy training, out of the 269 respondents, 145 respondents had the perception that they had abilities to independently identify and locate collections in the library by using the OPAC, 47 respondents had the perception that they could not identify and locate collections in the library by using the OPAC. There were 109 respondents had the perception that they had abilities to independently identify and locate collections in the library by using the indexing journals, 53 respondents had the perception that they could not independently identify and locate collections in the library by using the indexing journals.

Concerning the use of abstracting journals, 46 respondents had the perception that they had abilities to independently identify and locate collections in the library by using abstracting journals, and 63 respondents had the perception that they could not independently identify and locate collections in the library by using abstracting journals.

The non responses could probably indicate that the respondents do not use the OPAC, indexing and abstracting journals. They instead go straight to the shelves to retrieve the materials that they need with the help of their friends.

4.7.2 Access points used in the retrieval of information

Access points are important for providing an avenue for users to search, identify, locate and retrieve information. As such it is important that users of information services should be equipped with the skills for searching information using the different access points. The respondents are split according to those that had received formal Information Literacy training in class in the form of a Module or Course and those that had not received formal Information Literacy training from class, but had received Information Literacy training in the Library. An assessment of students' access points used in the retrieval of information is presented in Table 14 on the next page. .

Table 14: Access points used in the retrieval of information (N=287).

Unizul				
	With formal Information Literacy training (N=14)		Without formal Information Literacy training/ with library training/ other modules or courses (N=75)	
	Non Response		Non response	
Access points Used	F	F	F	F
All of them	5	9	0	75
Author and Title	5	9	0	75
Author	4	10	0	75
Title	0	14	6	69
Subject	0	14	2	73
DUT				
	With formal Information Literacy training (N=2)		Without formal Information Literacy training/ with library training/other modules or courses (N=187)	
	Non Response		Non Response	
Access points Used	F	F	F	F
All of them	2	0	43	144
Author and Title	0	2	42	145
Author	0	2	26	161
Title	0	2	0	187
Subject	0	2	0	187
Mzuni				
	With formal Information Literacy training (N=2)		Without formal Information Literacy training/ with library training/ other modules or courses (N=16)	
	Non Response		Non Response	
Access points Used	F	F	F	F
All of them	2	0	2	14
Author and Title	0	2	2	14
Author	0	2	0	16
Title	0	2	2	14
Subject	0	2	0	16

Results presented in table 14 on the previous page, show that, the mostly used access points in the retrieval of information are, all the access points (author, title, and subject). Nine respondents that had received formal information literacy training indicated using all the access points, while 45 respondents that had not received formal information literacy training, but had received training in the library also indicated using all access points. The least used access points in the retrieval of information is the subject, with only 2 respondents who had not received formal information literacy training ascribing to their use.

The above results indicate that students were able and comfortable with accessing information sources by using all the access points (i.e. author, title and subject).

For non responses, this could be attributed to the fact that may be the students, use the library less for searching for information and more for reading and preparing for the examinations only, and that they acquire their information needs from the internet.

4.7.3 Purposes for the use of information.

Information is used for various purposes, namely decision making, entertainment, general information, learning and problem solving. Respondents were asked to indicate the various purposes that they use information for. Options were given for them to choose from, hence the various combinations presented in Table 15 on the next page.

Table 15 : Purposes for the use of information. (N= 287)

Purposes for the use of information	Unizul		DUT		Mzuni
	Fre	%	Fre	%	Fre
General information, Learning and Problem solving	4	5	46	26	0
Learning	20	23	35	19	8
General information and Learning	17	19	34	19	3
Learning and Problem Solving	10	11	27	15	5
All of them	11	12	13	8	2
Decision making, General information, Learning, Problem Solving	10	11	11	6	0
Decision making, Learning, problem solving	10	11	8	4	0
Entertainment, General Information, Learning, Problem Solving	7	8	6	3	0

Results in Table 15 above, show that out of 89 respondents from the Unizul, 20 (23%) respondents indicated using information for learning purposes and 4 (5%) respondents indicated using information for general information, learning and problem solving purposes.

Whereas at the DUT, 46 (26%) respondents indicated using information for general information, learning and problem solving purposes, and 6 (3%) respondents indicated using information for entertainment, general information, learning, and problem solving purposes.

At Mzuni, 8 out of 18 respondents indicated using information for learning purposes and 2 respondents indicated using information for all purposes (i.e. decision making, problem solving, learning, general information and entertainment).

4.7.4 Use of citations and references in academic works.

A citation is a written reference to a specific information source, which are included in a list of sources cited. It is imperative, therefore, for students to be knowledgeable about the use of citation and references to avoid plagiarism. Students’ response to this question yielded the results presented in Tables 16 on the next page.

Table 16: Use of citations and references in academic works. (N= 287)

With information literacy training										Without Information Literacy training/with library training/other modules or courses									
Use citations and references					Do not use citations and references					Use citations and references					Do not use citations and references				
Unizul		DUT		Mzuni	Unizul		DUT		Mzuni	Unizul		DUT		Mzuni	Unizul		DUT		Mzuni
F	%	F	%	F	F	%	F	%	F	F	%	F	%	F	F	%	F	%	F
14	16	2	1	2	0	0	0	0	0	25	26	91	50	10	52	58	87	49	6

The use of citations and references in academic works by the respondents at the three institutions under study as presented in Table 16 above, reveals that for respondents who had received formal information literacy training, 18 (6%) respondents indicated that they use citations and references in academic works, while for respondents who had not received formal information literacy training, 124 (43%) respondents indicated that they use citations and references in academic works and 145 (51%) respondents indicated that that they do not use citation and references in their academic works.

4.7.4.1 How respondents learnt about citing and referencing and problems faced by respondents that do not know how to write citations and references.

The objective of the question was to find out how respondents learnt about citing and referencing, for those that did not know how to cite and make reference, the question sought to find out what the problem was.

4.7.4.2 How respondents learnt about citing and referencing

Respondents from the three institutions that indicated that they used citations and references in their academic works and when asked to state how they learnt about citing and referencing, they responded as follows:

Unizul

At Unizul, there were 37 (42%) out of 89 respondents that had indicated that they used citations and references in their academic works:

- Fourteen (16%) respondents learnt the use of citations and references from the course/module of information literacy;

- Twelve (14%) respondents learnt the use of citations and references from their lecturers at their previous universities at undergraduate level;
- Five (6%) learnt the use of citations and references at undergraduate level from their lecturer in the module of Economic Methodology and Research;
- Three (3%) learnt from their lecturer in the module of Social Work research methodology and
- Three (3%) respondents indicated that they learnt the use of citations and references in their academic works from their lecturer in the Module of Educational Research Methodology.

DUT

There were 93 (52%) of the 180 respondents that had indicated that they use citations and references in their academic works:

- Sixty five (36%) respondents indicated that they learnt from the library during the orientation programme in which information literacy is taught;
- Nineteen (10%) respondents indicated that they learnt from the course of Communication Skills in English department;
- Seven (4%) respondents indicated that they learnt from their respective lecturers and
- Two (1%) respondents learnt from the course of Information Retrieval II

Mzuni

There were 12 out of 18 respondents that had indicated that they use citations and references in their academic work:

- Eight indicated that they learnt in the courses of Communication skills and
- Four respondents indicated that they learnt in the courses of Communication studies and Information literacy.

4.7.4.3 Problems faced by respondents that do not know how to write citations and references.

Unizul

Fifty two respondents from Unizul indicated that they did not use citations and references in their academic works, and when asked to state the problems they faced they responded as follows:

- Twenty (22%) respondents indicated that they did not write assignments in their module that required the use of citations and references;
- Seventeen (19%) respondents indicated that they have never attended a module that teaches about the use of citations and references, neither have their lecturers taught them;
- Fifteen (17%) respondents indicated that they have never bothered to learn about the use of citation and references;

DUT

There were 87 (48%) of the 180 respondents that indicated that they do not use citations and references in their academic works and they responded as follows:

- Thirty three (19%) respondents indicated that they have never bothered to learn about the use of citations and references in their academic works ;
- Twenty six (14%) respondents indicated that their lecturers have never bothered to send them to the library to learn about the use of citation and references in their academic works ;
- Seventeen (9%) respondents indicated that they have never been taught by their lecturers and
- Eleven (6%) respondents indicated that their courses do not require the use of citation and references

Mzuni

At Mzuni 6 out of 18 respondents that had indicated that they do not use citations and references in their academic works responded as follows:

- Four respondents indicated that they have never bothered to learn the use of citations and references in their academic works and

- Two respondents indicated that their courses do not require the use of citations and references.

4.8 Observations

Observations were carried out at the same time that questionnaires were being administered to students in the libraries at the Unizul, DUT and Mzuni. Students were targeted when they were using the Open Access Public Catalogues (OPAC), searching for information resources. Students from each University under study were observed in their respective libraries on how they search, locate, identify and retrieve information. At Unizul, four (4) students from each of the four Faculties, Arts, Commerce, Law and Administration, Education and Science and Agriculture were observed, similarly at the DUT four (4) students from each of the four Faculties of Accounting and Informatics, Arts, Engineering, Science and the Built Environment and Health Sciences were observed and at Mzuni, only (2) two students from the Faculties of Health and Medical Sciences and the Faculty of Environmental Sciences were observed. Each student was observed for a period of one day.

4.8.1 Participants with Information Literacy Training

Unizul

4.8.1.1 Participant One.

Participant one was a student from the Faculty of Arts who was taking a course/module of Information Literacy. The main retrieval tools that the student was observed on using were the Open Access Public Catalogue (OPAC) and Indexes. Observations revealed that the participant was comfortable in searching for information sources using the (OPAC) by using different access point such as author and title. The participant did not face any problems in identifying the information material, in this case the books, on the shelf. The draw back was that the I-link was slow and this took a lot of time between the time the search terms were punched in, to the time the results were displayed. The slowness could be attributed to the fault inherent in the performance of the Library's computer system and instability of the power supply. This in turn prolonged the whole process of searching, identifying and retrieving information. It took four (4) hours from the time the search query was made to the time results were displayed. The participant was conversant with the

location of the books and was able to go to the shelf and locate the books though, the books identified were not on the shelf.

4.8.1.2 Participant Two.

The second participant was a Post-graduate student, from the Faculty of Science and Agriculture, who was searching for some journals. The participant was comfortable in using the (OPAC) without asking for any assistance, in searching for journals to meet his research objectives. The problem experienced by the participant was the speed of the system, which was slow. It took a long time, two (2) hours from the time the search terms were punched in, to the time the results were displayed. In addition, the participant was able to use the title of journals as access points, marked the retrieval term, i.e. the class mark. The participant was able to use the journal abstract and an index showing where find to the journal and went to the journal section to locate the journals being sought and retrieved them from the shelf. The participant had once taken a Module in Information Literacy at Undergraduate level and had attended some Library Orientation programme in the Library.

4.8.1.3 Participant Three

The third participant was a student from the Faculty of Commerce, Law and Administration. The participant was searching for books. The participant used subject and author as search phrases. However, the subject terms that the participant used seemed not to have yielded the desired results and this prompted the participant to use title. The participant marked the class marks and went to the shelf to locate and retrieve the books, but none of the books sought were on the shelf. The participant however, showed knowledge and familiarity with the whole process of searching and retrieving books. It took half a day between the time the search terms were typed in, to the time the participant went to the shelf to retrieve the book.

The fact that the students coped well with searching of information using the OPAC is proof of the fact that the students had either had some training in Library orientation programme or had attended some information Literacy training.

4.8.2 Participant without Information Literacy Training

4.8.2.1 Participant Four

The fourth and final participant was from the Faculty of Education, who was searching for some books. It took almost the whole day with the user searching for the books using several retrieval terms. The user did not know how to go about searching for the information and was asking her friends for help. The participant relied on her friends on how to go about using the OPAC as she had no training in Information Literacy. The fact that the student struggled with her searches, shows that the student had never attended neither the Library orientation programme nor some information Literacy training.

4.8.3 Participants with Information Literacy Training

DUT

4.8.3.1 Participant Five

Participant Five was a student from the Faculty of Accounting and Informatics at the DUT and was searching for books and newspapers in the Library. The participant seemed familiar and comfortable with the use of OPAC as she was able to type in the search terms using a combination of author and title for books and was able to retrieve the books from the shelf. For newspapers, the participant did not have to search on the OPAC as the newspapers are clearly displayed on the tables where she had to sit and read. It did not take a long time for the participant to search and retrieve the books as the I-link was faster than the one at the Unizul. She took thirty minutes from the time she started searching up to the time that she had retrieved the books.

4.8.3.2 Participant 6

The participant was a Post-graduate student from the faculty of Engineering, Science and the Built Environment, who was searching for some data bases. Firstly, the participant had to click on the name of the database sought. The participant had to type in the logging details, i.e. the user name and password in order to gain access to the database. Having gained access to the database, the participant typed in the search terms i.e. the title of the article, which was displayed on the screen database, when the result was displayed on the screen, the participant, searched the title and author of the article. When the article

appeared on the screen, the participant read from the screen since the software does not allow for copying of the articles. The participant took at the utmost 20 minutes from searching to retrieving the article.

4.8.3.3 Participant 7

The participant was from the Faculty of Health Sciences and was observed searching for information from an encyclopedia. The participant typed in the name of the encyclopedia that was being sought, and the name and shelf number where the encyclopedia could be located was displayed on the screen. The participant was able to locate the encyclopedia on the shelf and retrieve it. It took the observer only 15 minutes from the time the searching started to the time the participant retrieved the material from the shelf.

4.8.3.4 Participant 8

The last participant was from the Faculty of Arts, who was observed on the searching of books. In searching for books using the OPAC, the participant typed in the search terms using a combination of author/title/ subject and was able to get the class mark and the shelf on which the book was located. The participant was able to follow the shelf guide to locate the book on the shelf and retrieve it. The participant seemed familiar with the system and it took her 20 minutes from the time the search started up to the time she retrieved the books. All four participants from the DUT showed that they had abilities to independently search, identify and retrieve the relevant information materials. This can be an indication that the students had probably undergone some training by attending the information literacy course run by the library.

4.8.4 Participant with Information Literacy Training

Mzuni

Only two students were observed at Mzuni, because most of the students were busy preparing for their end of the semester examinations.

4.8.4.1 Participant 9

The participant was a student in the Faculty of Information Science and Communications and was being observed while searching for text books. The participant was able to type in the search term title/author for the text books that were sought. The details of the books appeared on the screen, the participant, took note of the details and went to the shelf to retrieve the texts. Unfortunately, the texts that were being sought were not found in the Library. It took thirty minutes between the start of the search up to the time the participant went to retrieve the materials from the book shelf. However, the participant showed that she had an ability to independently search, identify and retrieve the relevant information materials. This means that the student had probably undergone some training in information literacy.

4.8.5 Participant without Information Literacy Training

4.8.5.1 Participant 10

The participant, who was in the company of fellow students, belonged to the Faculty of Environmental Sciences, and was searching for books to complete her research tasks. The participant seemed not comfortable in using the OPAC as she took the whole day searching using different search terms and soliciting the assistance of library assistants. The participant showed that she did not have the ability to independently search, identify and retrieve the relevant information materials, as she had probably not attained any information literacy training.

Results from the observations show that the offering of a compulsory information literacy training/module/course equips students with the ability to independently search, identify and retrieve the relevant information materials.

Responses for academic and library staff are arranged as follows: Respondent A is an ex-lecturer from the Unizul and respondent B is an Assistant Lecturer from Mzuni. Respondent C is a Senior Librarian from the Unizul library, respondent D is a Senior Librarian at the DUT library, and respondent E is a Periodicals librarian from the Mzuni. The results are presented in the sections that follow.

4. 9 Academic staff

4.9.1. Section 1: Personal information.

The main purpose of the section was to solicit demographic data of the respondents such as their institutional affiliations, faculties and departments that the respondents belong to and the ranks of the respondents.

Respondent A belongs to the Unizul and she is an ex- lecturer in the Department of Library and Information Science, in the Faculty of Arts, but left the Department and Faculty at the beginning of the year (2007). **Respondent B** is an Assistant lecturer in the Department of Library and Information Science, Faculty of Information Science and Communications at Mzuni.

4.9.2 Section 2: Offer and teaching of information literacy.

The section set to find out whether the module or course of Information Literacy is offered and taught, which department is responsible for the formulation of the Information Literacy syllabus, how the syllabus on Information Literacy is designed and whether it is reviewed and if so how often it is reviewed.

Respondent A indicated that an Information Literacy is offered and taught as a module by the Department of Library and Information Science. It was also indicated that the lecturer responsible for teaching Information Literacy was responsible for designing and formulation of the information literacy syllabus in consultation with the Head of Department of Library and Information Science. The Syllabus of Information Literacy at Unizul until recently has been based on the one offered at the University of Cape Town, which had been running the programme for a long time. The respondent indicated that the module of Information Literacy is reviewed periodically, though a periodic timeline does not exist. The reviewing of the syllabus is at the discretion of the lecturer concerned in consultation with the Head of the Department.

Respondent B indicated that Information Literacy is offered and taught as a course by the Department of Library and Information Science. The respondent indicated that Lecturers in

the Department of Library and information Science and Librarians are responsible for the design and formulation of the Information Literacy curriculum and that the Curriculum developed through the Curriculum development workshop and is reviewed annually.

4.9.3. Section 3: Responsibility for the teaching of information literacy.

The purpose of the section was to establish the topics covered in teaching information literacy, modes used in teaching information literacy and to whom the course of information literacy is offered or taught. The section also sought to determine whether the module adequately equip students with the skills for writing assignments, doing research and independently identifying, locating and retrieving information. In addition, the section sought to ascertain whether the module instills in students the ability to correctly write citations and references and if not what problems are experienced. It also sought to determine how many lecturers are involved in teaching information literacy.

Respondent A indicated that topics covered in the teaching of information literacy include three broad areas, with their sub-topics namely:

1. Information Handling Skills

- Introduction and background of information literacy;
- Information tasks and plans;
- Planning the information task;
- Retrieving information for the task and
- Organising information to complete tasks;

2. Locating information

- Finding information;
- Reference sources,
- Bibliographies, indexing and abstract journals,
- Electronic information sources and
- Citations and

3. Expository writing

- knowing your audience and purpose;
- Reading for writing;
- thinking for writing;
- the writing process and
- Completing your writing tasks.

The modes of delivery as cited by the respondent were mainly lectures, group discussions and practicals in the computer laboratory where students were required to go and access Internet sources. The course of Information Literacy is taught to students in the Departments of Library and Information Science, Communication Science and Agriculture Science. No reason was given as to why the course was taught to only these students in these departments and not the whole campus. The respondent indicated that due to time constraints, the module partly equipped students with the skills for writing assignments, doing research and other information related tasks. She felt that the duration (3 months) was not adequate to teach students and impart the skills within such a short period of time.

The respondent was of the opinion that, lecturers in the Departments of Library and Information Science, Communications Science and Agriculture Science need to familiarise themselves with the information literacy content, so that they could reinforce what was being taught in the Information Literacy module, such as correctly writing citations and references. There is a lack of coordination among the lecturers from the various departments to reinforce what is being taught to students taking Information Literacy. The respondent indicated that, as such the module could not instill in students the ability to correctly write citations and references. It was indicated that there is only one lecturer involved in the teaching of Information Literacy.

Respondent B indicated that topics covered in the teaching of Information Literacy included the following:

- Identifying the need for information;
- Selecting the most appropriate information system;
- Acquiring pertinent information;
- Evaluating information obtained;

- Manipulating information in usable form and
- Communicating information.

The course of Information Literacy is taught to first year Library and Information Science Students only, because the department lacks the capacity to teach the course to all students at the University. The respondent indicated that the course of Information Literacy partially equipped students with the skills for writing assignments, doing research and other information related tasks because most students do not have computer skills. The respondent indicated that the course of Information Literacy does adequately equip students with the skills to independently identify, locate and retrieve information and that the course does instill in students the ability to correctly write citations and references. Only one (1) lecturer is involved in teaching information literacy.

4.9.4. Section 4: Existence of collaboration between library staff and the Department of Library and Information Science responsible in teaching information literacy.

The section sought to find out if there is any collaboration between the library staff and the Department of Library and Information Science in the teaching of information literacy to students of Library and Information Science, Communication Science and Agriculture Science, and if so, what roles and responsibilities are played by the teaching department and the library staff.

Respondent A was of the view that formal collaboration does not exist. The lecturer concerned would request librarians at personal level to assist the students with the happenings in the library. In addition, the lecturer teaching Information Literacy did not know the content librarians taught to the students and vice versa.

The respondent categorised the roles and responsibilities played by the teaching department as designing the syllabus in information literacy, teaching the theoretical part, whereas the roles and responsibilities of the library staff are practical, because they are the custodians of the information resources and that this would also avoid overlaps in the teaching of Information Literacy.

Respondent B indicated that there was no collaboration between the library staff and the Department of Library and Information Science in teaching information literacy to students of Library and Information Science. The respondent indicated that the roles and responsibilities of library staff in the teaching of Information Literacy were to impart practical skills to students on how to search, locate and retrieve information sources. On the other hand, the respondent mentioned the roles and responsibilities of the Department of Library and Information Science in the teaching of Information Literacy to students of Library and Information Science as teaching the theoretical part, giving students exercises, assignments, tests and exams.

4.9.5. Section 5: Problems faced in the delivery of Information Literacy Module or Course.

The purpose of the section was to establish the problems that staff faces in the delivery of Information Literacy and to seek solutions to the problems identified.

Respondent A highlighted some problems faced in the delivery of the Information Literacy module:

- Time factor - the duration of 3 months was seen as not being adequate to treat each area in-depth, as a lot of content had to be taught in a very short period of time. This necessitated student to do self study;
- Lack of computer literacy - The lack of computer literacy by the lecturer made teaching difficult, since the module of Information Literacy needed computer skills. This made the lecturer to depend on students that were computer literate for teaching computer oriented topics. In addition, the majority of students had not seen and used a computer before. This made teaching by the lecturer even more difficult.
- Many students absconded from practicals in the computer laboratory, because the computer laboratory was booked most of the time;
- Learning by using the Internet and accessing Internet resources needed students having money in their Internet accounts. This proved difficult considering the students' social and economic backgrounds, and

- Lack of coordination among the lecturers to reinforce what the students had been taught.

Responded A proposed the following solutions:

- Reverting to the semester system addresses the time factor problem;
- Lecturers teaching computer oriented modules such as Information Literacy should be computer literate;
- The university management should buy more computers and build more computer laboratories, since most modules are computer oriented. This would ease the congestion off the available computer laboratories and it would make the students to easily access the computers in the laboratories for their practicals;
- A mechanism should be devised whereby students accessing the Internet for practical purposes should not be required to have funds in their accounts and
- An understanding should be made among Library and Information Science, Communications Science and Agriculture Science lecturers to familiarise themselves with the information literacy content so that they could reinforce the skills taught to the students.

Respondent B indicated that staff in the department of Library and Information Science responsible for teaching Information Literacy faced some problems which are outlined as follows:

- Inadequate computers for students' practicals;
- Lack of time, to use the ICT laboratory;
- Erratic network connections, due to power disruptions and
- Lack of computer skills by the students.

Some suggested solutions to the above outlined problems are as follows:

- The University management should purchase more computers;
- A proper timetable should be allocated for the use of the ICT laboratory to students in the Department of Library and Information Science students, as the laboratory is dominated by students in the Department of ICT.

- The University management should come up with a reliable network as the current one in use frequently breaks down and that
- The University should establish a policy to make it mandatory for all first year students to enroll for computer lessons.

4.9.6. Section 6: Suggestions from faculty staff on the most effective method for teaching information literacy.

The section sought to elicit suggestions from the faculty staff on the most effective method for teaching information literacy.

Respondent A suggested that the most effective method for teaching Information Literacy was in a computer laboratory setting, where there are computers. Since most students are not computer literate, it was felt that such an arrangement would quickly make the students to become computer literate. The module of information literacy is computer oriented. As such it needs a lecturer who is computer literate.

Respondent B suggested that the most effective method of teaching Library Orientation Programme or Information Literacy was through practicals such as in the Computer Laboratory setting where students would have hands-on, in searching for information using computers.

4.10 Library staff

4.10.1 Personal Information

The main purpose of the section was to solicit demographic data of the respondents such as institutional affiliation, that the respondents belongs to and the rank of the respondent.

Respondent C is a Senior Librarian at the Unizul library while **respondent D** is a Senior Librarian at the DUT Library and **respondent E** is a Periodicals Librarian at Mzuni.

4.10.2. Section 2: Responsibility for the Teaching of the Library Orientation

Programme or Information Literacy.

The purpose of this section was to establish the teaching of the Library Orientation Programme or Information Literacy by the library staff, topics that are taught in the Library Orientation Programme information literacy, mode of teaching the Library Orientation Programme or Information Literacy and to whom are the Library Orientation Programme or Information Literacy taught. In addition, the section also sought to find out if the teaching of Library Orientation Programme or Information Literacy adequately equips students with the skills to independently identify, locate and retrieve information.

Respondent C indicated that senior library staff teach Library Orientation Programme or Information Literacy. The teaching is done during the library orientation programme, which is usually mandatory at the University of Zululand and it is an on-going exercise for first year and new students.

Some topics taught during the Library Orientation Programme or Information Literacy include:

- An overview of collections, services and facilities;
- Library rules and policies;
- Information retrieval skills;
- The use of the Open Access Public Catalogue and other retrieval tools, and
- Online databases.

It was indicated that both practical and theoretical modes are used in teaching Library Orientation Programme or Information Literacy. Students are taken to the Electronic Class (Library lab) in the library, where Library staffs run theoretical classes. After completing the theory part, the students are taken for a library tour where they are taken to various sections of the library such as the central circulation, inter-library, reference, journal, Audio-visual and the short loan. The students are also taken to the Open Access Public Catalogue (OPAC) to have hands-on experience in the use of the OPAC.

The teaching of the Library Orientation Programme or Information Literacy was designed to introduce the new students to the library and its layout, the staff, the collections, the service and how to use the library to locate information. For senior students or post-graduates, special training sessions are also organised for searching and retrieval of online databases.

The respondent indicated that students that attend the teaching of the Library Orientation Programme or Information Literacy are equipped with skills to independently identify, locate and retrieve information, to the extent that that they also can assist fellow students.

Respondent D indicated that senior library staffs do teach Information Literacy. The teaching is done during the library orientation programme to first year students at the University.

Some topics taught in Information Literacy include:

Unit 1

- Nature and need of information:
 - What is information;
 - Need of information;
 - Different sources of information.

Unit 2

- Dewey Decimal Classification:
 - Need to know how information is arranged in the library.

Unit 3

- I-Link-OPAC
 - Basic search;
 - Advanced search.

Unit 4

- Printed sources of Information.
 - Books, Encyclopedias, theses e.t.c and
 - An in-depth print sources e.g. title page, index and so on.

Unit 5

- E- resources
 - All electronic databases subscribed to by the University.

Unit 6

- How to locate information using different retrieval tools.

Unit 7

- Evaluation of information resources.

Unit 8

- Plagiarism and referencing.

Both practical and theoretical modes are used in teaching Library Orientation Programme or Information Literacy. Basic background about a topic, assignments and exercises such as retrieving information from the I-Link, are given to the students.

The teaching of Information Literacy in the Library depends on the group of classes. Students are interviewed first to find out the level they are at. For instance, first years are taught Unit 1, nature and need of information, second year students are taught Units 2, Dewey Decimal Classification, Unit 3, I-Link and Unit 4 Printed sources of information. Students from third years upwards are taught Unit 5, is E-resources, Unit 6, which is how to locate information using different retrieval tools, Unit 7, evaluation of information resources and Unit 8 plagiarism and referencing. Post-graduate students are taught advanced searches in Electronic databases.

The respondent indicated that students that attend the teaching of information literacy are equipped with the skills to independently identify, locate and retrieve information. Pilot students are monitored in the completion of their tasks. When students are given an assignment by their lecturers, they are supposed to search for information in the library and the library staffs monitor the students up to the time they complete their assignments. Library staff marks the referencing part to find out whether the students have grasped the topic on referencing and use of citations.

Respondent E indicated that the Library teaches library orientation programme to first level and new students in the University. Both theoretical and practical modes such as the use of the Internet and OPAC are used in the teaching of library orientation programme. Some topics covered in the teaching of library orientation programme include:

- Searching and retrieval tools;
- Use of the Internet and the OPAC;
- Classification and arrangement of information sources in the Library and
- Citing and referencing of academic works.

The respondent indicated that the library orientation programme partly equips students with the skills to independently identify, locate and retrieve information because the time allocated for the teaching is not adequate.

4.10.3. Section 3: Existence of collaboration between library staff and the Department of Library and information Science.

Collaboration in this case entails cooperation that exists between any two departments in teaching of the Library Orientation Programme or Information Literacy. The section sought to ascertain the existence of collaboration in the teaching of the Library Orientation Programme/Information Literacy between library staff and the Department of Library and Information Science, to determine if there are any problems faced in the collaboration between library staff and the Department of Library and Information Science and to establish the roles and responsibilities of the library staff and the Department of Library and Information Science.

Respondent C indicated that collaboration between the library staff and the Department of Library and Information Science exists, though not formal, in the form of some lecturers sending students to the library for hands-on practicals such as searching and retrieval of databases, use of the indexes and the Open Access Public Catalogue. The problem faced by library staff in collaborative teaching of the Library Orientation Programme or Information Literacy as cited by the respondent is that Library staff are not notified well in advance by the lecturers that they are sending the students for practical lessons in the Library . This

means, the Library staffs do not prepare the topics adequately for teaching the students when ever they are sent to the Library by the lecturers.

The respondent further indicated that the roles and responsibilities of the teaching department are those of facilitators of learning, helping students, with the assistance of librarians, to evaluate information. Whereas, the roles and responsibilities of the library staff are to participate in, and strengthen information literacy programmess, teaching students research strategies that require active engagement, foster problem solving, and emphasise critical evaluation of information. The emphasis is on enabling students to become independent researchers and thereby encouraging lifelong learning.

Respondent D indicated that the Library collaborates with all Departments in the teaching of Information Literacy. Some departments also collaborate by giving up their lecture periods so that they can send the students to the library to learn about searching, identifying, locating, retrieving of information. In addition, students are sent to the library to also learn about citation and referencing. The only time that the Department of Library and Information Studies assist the library staff is when the department delegate students to the library to help out during the library orientation. The major problem faced in the collaboration of teaching Information Literacy with other departments is when some lecturers refuse to send students to the Library.

The respondent indicated that the roles played by the teaching Departments should be those of teaching students their specific areas of specialisation, reinforcing what the students have learnt in Information Literacy, such as the use of citations and references and co-operating when it comes to releasing students for the learning of Information Literacy. The roles of Library staff are to empower students with skills to searching and retrieving information, teach students referencing and produce a reference guide book which students can buy for five Rand.

Respondent E indicated that the only form of collaboration that the Library is involved in, is with the Department of Library and Information Science, when students are sent to the

library to have hands-on in the use of the OPAC and to familiarise themselves with collections in the library. It was indicated that the library does not face any problems with such collaboration. The respondent indicated that the roles played by the teaching department are those of teaching students and reinforcing what has been taught, whereas the roles and responsibilities of library staff are to teach and impart skills to students on how to search for information, citations and referencing.

4.10.4. Section 4: Problems faced in teaching Library Orientation

Programme or Information Literacy.

The section intended to find out whether library staffs face any problems in the teaching of Library Orientation Programme or Information Literacy to students and to seek solutions to the problems being faced.

Respondent C indicated that senior librarians involved in teaching Library Orientation Programme or Information Literacy do encounter some problems. Some problems faced were cited as follows:

- Lack of a formal agreement between the library staff and the Department of Library and information Science for the collaborative teaching of Library Orientation Programme or Information Literacy;
- The lack of a structured programme, which makes most students not to take the orientation programme in the library seriously. As a case in point, it was mentioned that an advertisement was placed about training in the use of the databases for senior students, for which only 1 - 3 would turn up.
- One training session per week per student is seen as being inadequate, because a lot has to be covered within a short period of time;
- Students lack hands-on, in the use of computers because they have never had access to computers where they are coming from. Since searching and retrieval of information in the library entails using computers, students have to be taught how to operate the computer first. This again takes up a lot of time instead of going straight to teaching Library Orientation Programme or Information Literacy.

In order to solve the problems mentioned in the previous paragraph, the respondent made the following suggestions:

- The library and the Department of Library and Information Science should come up with a formal agreement for collaborative teaching of Library Orientation Programme or Information Literacy;
- The library and the Department of Library and Information Science should come up with, and agree on a well structured programme for teaching Library Orientation Programme or Information Literacy in which subject librarians would be invited to class and teach about the resources available in the library and an assessment of students should be done at the end of the teaching or training sessions and marks or grades awarded should count towards their end of the term or semester continuous assessments;
- Training sessions for students should be increased from one session in a week to two or three.
- More computers need to be bought by the university management and computer laboratories built to enable students using the computer for the first time to learn and practice before the commencement of lectures.

Respondent D indicated that senior librarians involved in teaching Library Orientation Programme or Information Literacy do encounter some problems. The problems faced were cited as follows:

- Lack of co-operation from lecturers in some of the Departments;
- Lack of adequate venues, - the library has two small laboratories;
- Lack of adequate equipment such as computers and projectors;
- One hour teaching sessions are not enough;
- Most students are not computer literate/students are so slow (makes teaching difficult) and
- Staff shortages.

In order to solve the problems mentioned in the previous paragraph, the respondents made the following suggestions:

- Deans should tell the Heads of Departments and the lecturers about the importance of Information Literacy, so that they could allocate extra hours for library training by the students;
- The Universities' Management should lease equipment such as computers and projectors from external companies so that after one or two years the equipment could be returned and upgraded;
- More time slots for teaching Information Literacy should be negotiated with some Departments. In addition, when Departments are planning for their curricula, they should provide more slots for Information Literacy;
- The University should consider buying dummy computers connected to the terminals where students can practice their computer skills. In addition, computer skills should be compulsory starting from first year and
- Budgeting for staff should be increased.

Respondent E acknowledged that library staffs face some problems in the teaching of Library Orientation Programme or Information Literacy to students. Some problems cited include:

- Students are computer illiterate;
- Inadequate amounts of computers, and
- Limited time of two weeks is given to teach Library Orientation Programme, in which one hour training session is given to first level students and thirty minutes training session is given to post-graduate students.

Some suggested solutions to the problems presented above are as follows:

- The University Management should come up with a policy to make it mandatory for all first year students to enroll for computer lessons;
- The University management should purchase extra computers;
- In order to beat the time factor, the library orientation programme should be made a stand alone module or course for the whole semester;

- The library orientation programme should be incorporated into the course of Communication skills in which library staff would teach the practical part about the use of search tools, search strategies and the use of the OPAC.

4.10.5. Section 5: Suggestions from library staff on the most effective method for teaching Library Orientation Programme or Information Literacy.

The section sought to elicit suggestions from the library staff on the most effective method for teaching Library Orientation Programme/Information Literacy.

Respondent C suggested that both theoretical and practical modes of teaching be favoured. It was felt that a theoretical background offers students knowledge of what information literacy is all about, while the practical part equips the students with the necessary experience in the use of the library resources.

Respondent D made the following suggestions:

- Integration of Information Literacy into the Departments' curricula;
- Slots should be given to the library staff to teach students on referencing when students are doing their assignments;
- Web tutorials should be introduced where students would download Information Literacy tutorials; and
- Departments should allocate marks for proper referencing.

Respondent E suggested that the most effective method of teaching Library orientation programme or information literacy was through practicals such as in the computer laboratory setting where students would have hands-on, in searching for information using computers.

4.11 Summary

This chapter has presented the findings obtained from students, academic and library staff. The focus area of the study was the embedment of Information Literacy Module or Course into the Universities' curricula, awareness of its availability and attendance by the students and the ability to identify, locate and retrieve information by the students.

The study revealed that Information Literacy Module or Course is embedded into the curricula of the University of Zululand and Mzuzu University and that only a few students are aware of its availability and attendance. At Durban University of Technology, Information Literacy is taught in the library during the library orientation programme.

Students that had received formal and informal information literacy training were better off in identifying, locating and retrieving information than those that had not.

Discussions of findings are done in Chapter five.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.1 Introduction

This chapter discusses the major findings obtained through the three sets of data collection tools: questionnaires, interviews and observations. An attempt has been made to collate the findings obtained from these techniques and draw correlations with the objectives of the study. Issues that are considered to be of major importance in this discussion are:

- The offer and teaching of the Module or course of Information Literacy in the Universities;
- Formulation, design and review of the module or course of Information Literacy;
- Awareness of the availability and attendance of the module or course in Information Literacy;
- Responsibility for teaching information literacy or library orientation programme;
- Topics covered in the Module or Course of Information Literacy or Library Orientation programme
- Mode of delivery or learning of information Literacy module or course or Library Orientation Programme;
- Equipping students with the skills for doing academic work and handling information;
- Students' perception about their ability to independently identify, locate, retrieve and use of information resources;
- Students' perception about their ability to independently identify, locate retrieve and use information sources by using the OPAC, Indexing and abstracting journals;
- Use of citations and references in academic works by the students;
- Challenges faced in the teaching and learning of information literacy and
- Suggestions from library and faculty staff on the most effective method for teaching information literacy.

5.2 Offer and teaching of Information Literacy.

The offering of the teaching of the course of Information Literacy in universities under study was considered to be of very big significance in this study, because it lays the foundation for the teaching and inculcation of information literacy skills in the students. It has been observed that information literacy is offered and taught as a Module or Course by the Departments of Library and Information Science at the University of Zululand and Mzuzu University. It is also embedded into the Departments' curricula at the two Universities just mentioned. At the Durban University of Technology, information literacy is taught in the library during the library orientation programme. Parker (2003: n.p.), and Orr, Appleton and Wallin (2001:n.p) advocate for the total integration of information literacy into the student's course materials. This module or course should attract marks, and be devised on the basis of collaboration between library staff and academic colleagues. This is often considered by practitioners as the most effective method for enabling students to develop their information literacy skills, because it ties information literacy into all student experiences. De Jager and Nassimbeni (2002:12) observe too, that there was a discernable shift among librarians in South Africa from being satisfied with the standalone, generic model for information literacy programs to the recognition that integration into subject curricula is a more effective approach to information literacy training.

5.3 Formulation, design and review of the module or course of Information Literacy.

The best practice for the design and review of the curriculum is through the involvement of various stakeholders, such as librarians, administrators, lecturers, and curriculum designers, in the form of a workshop, as is the case at the Mzuzu University, where participants can deliberate and come up with a curriculum that is acceptable to all parties. However, the norm at the University of Zululand is that the module of Information literacy is designed and reviewed periodically by the lecturer concerned in consultation with the Head of Department of Library and Information Science. At Mzuzu University, the lecturers in the Department of Library and Information Science and librarians from across the country are responsible for the design and formulation of the information literacy curriculum and that the curriculum is developed through the Curriculum development workshop and is

reviewed annually. This is similar to what occurred at the Open University in the United Kingdom, in which during the design of Making Sense of Information in the Connected Age, (MOSAIC), an assessed, credit bearing short course in Information Literacy, a number of stakeholders were involved. Parker (2003:n.p) notes that, the development was made possible with the collaboration between academic and library staff, academic advisors from the Faculty of Education and Language studies, the Centre for Outcome-Based Education, with input from members of the SCONUL Advisory Committee who critically read the course.

5.4 Awareness of the availability and attendance of the module or course in Information Literacy.

The trend at institutions studied is that only a small number of students are aware of, and attend the formal classes in Information Literacy at the University of Zululand and Mzuzu University. This could probably be attributed to the fact that the module or course is offered to students in the Department of Library and Information Science, Communication and Agriculture Science at the University of Zululand and to students in the Department of Library and Information Science only at Mzuzu University as a stand-alone module or course, since it is not integrated into other departments' curricula.

Allen (2000: n.p) notes that universities need to introduce campus wide information literacy so as to produce graduates who are able to find, evaluate and apply needed information. In this case, administrators must set the tone for the entire campus by incorporating information literacy into the undergraduate curriculum and developing programs that immerse students into information literacy throughout their undergraduate years. Azmi (n.d: 159), Orr, Appleton and Wallin (2001:n.p), Skov and Skærbak (2003:n.p.) and Parker (2003: n.p.) agree that the best model is the total integration of information literacy across-the curriculum, where an information literacy activity is embedded into the student's course materials.

5.5 Responsibility for Information Literacy or Library Orientation Programme.

Responsibilities and roles of academic staff and library staff need to be spelt out, so that there should be no overlap in what the other group is doing. Academic staff are employed to teach, therefore their responsibility is to design the syllabus in information literacy, facilitate learning, teach students their areas of specialisation, reinforce what the students have been taught in information literacy, and giving students exercises, assignments, tests and exams. This point is in agreement with Allen (2000:n.p), who notes that academic staff are facilitators of learning, helping their students, how to evaluate information and fit it into the developing framework of knowledge in that course. This view conforms to the study's findings, in which at the University of Zululand and Mzuzu University, lecturers in the Departments of Library and Information Science are responsible for designing, reviewing and teaching Information Literacy modules or courses.

Library staff on the other hand, are solely responsible for teaching library orientation programme. They are responsible for imparting practical skills to students on how to use the library, searching, identifying, locate and retrieving information by using the OPAC, indexing and abstracting tools, databases and writing citations and references. This is so, because librarians are the custodians of the information resources and that this would also avoid overlaps in the teaching of Information Literacy or library orientation programme. They know the operations of the library and the resources housed therein. The trend in the libraries at the three institutions under study is that, senior library staffs are responsible for conducting or teaching information literacy or Library orientation programme.

However, the academic teaching and library staff ought to work together in the teaching of information literacy or library orientation programme since their goal is the same, namely to impart information literacy skills to students to enable them to independently search, identify, retrieve and use information responsibly. This view is supported by Bruce (2002:13), who observes that information literacy is not possible without partnerships with students, information specialists, Information Technology specialists, curriculum designers and others. All these need to collaborate since there is no single group that can claim responsibility for information literacy amongst students.

5.6 Topics covered in the Module or Course of Information Literacy or Library orientation programme.

There is no prescription as to what should be included in the content of information literacy. This is supported by Underwood (n.d:7-8), who in reporting on the results of the INFOLIT project, noted that there had been a development of a Web-based Information literacy course which is available at all the tertiary institutions in the Western Cape, though each institution is responsible for the content of Information literacy and how it should be taught. However, the topics offered should incorporate the information literacy standards such as the Seven Pillars of Information Literacy, the Big6 Skills, the Information Search Process, Research Process Model, and Pathways to Knowledge. According to the Council of Australian University Librarians (CAUL, 2001:4), information literacy standards provide a framework for embedding information literacy in the design and teaching of educational programs, and for assessing the information literate individual. In addition, the standards outline the process by which academics and librarians assess specific indicators which show that an individual is information literate. These standards are equally useful to the students because they provide a framework for their interaction with information in the environment.

Some topics that are commonly taught in the institutions under study include sources of information, searching and retrieval tools, the use of I-Link OPAC, use of the Internet and electronic sources such as Databases, evaluating and manipulating information in usable form, organisation of information resources in the library, communicating information and citing and referencing of academic works.

5.7 Mode of delivery or learning of information Literacy module or course or Library Orientation Programme

The mode of delivery is very important in the teaching of Information Literacy module or course, because it entails the imparting of rare skills. The learning modes offered in the information literacy module or course, theoretical and practical, as cited by the respondents involve lectures by lecturers in class, group discussions, and hands-on, in the use of the library such as browsing and using the Open Access Public Catalogue and other resources

in the library. The use of the theoretical mode only is not adequate as it does not allow self-directed learning and problem solving among students. The students do not become active participants in the process of identifying, locating, retrieving and using information responsibly such as citing sources and writing references, hence the mix of practical learning modes. The use of different modes of delivery such as lectures, groups discussion and practicals by academic teaching staff is of critical importance. This is supported by Dazkiw and Forsyth (2004:3), who illustrate the point with an example at La Trobe University, in Canada where a new Information Literacy subject introduced into the Bachelor of Nursing degree was presented as a set of lectures published online in WebCT modules and delivered in the traditional university lecture mode. Formal lectures were also improved with standard tutorials, and workshops.

5.8 Equipping students with the skills for doing academic work and handling information.

The purpose of teaching information literacy is to equip students with information handling skills in order for them to become independent in searching, identifying, locating, retrieving and handling information ethically. This view is in line with Lock (2003: n.p), who asserts that the skills that the students need to put to use include the ability to use a library and its resources for advancing one's studies, being able to perform literature searches to whatever depth and complexity is required for a particular curriculum/discipline area, and being able to demonstrate this to the satisfaction of tutors and assessors in whatever form necessary by means of citations and references to reading and information gathering. The other component of skills includes attributes of awareness and understanding of the way in which information is produced, some practical ideas of how information is acquired, managed, disseminated and exploited, particularly with knowledge of how appropriate professional groups use information in the workplace, in business, and in the world of culture and the arts. It also includes the critical appraisal of the content and validity of the information. The module or course of information requires that the students should be computer literate for their learning and practical skills in searching for information. In addition, the duration should be long enough for inculcating information literacy skills in students.

5.9 Students' perception about their ability to independently identify, locate, retrieve and use information sources.

The teaching of information literacy is very important in institutions of higher learning considering the vast amount of information resources being produced. It makes students to depend less on their lecture notes and on librarians for their information needs, as they are able to do the searches on their own. This view conforms to that of the American Library Association (ALA), (2007:1) which states that information literacy is a set of abilities, which enable individuals to recognise when information is needed and possessing the ability to locate, evaluate, and utilise the needed information. Because of the technological advancement, which has resulted in the proliferation of information, which is readily available in libraries, community resources, special interest organisations and the media, individuals are faced with diverse abundant information choices, whether in their academic studies, in the workplace, or in their personal lives.

Students from the three institutions, who have received information literacy training, be it formally, or informally, through the library, were found to be most familiar with locating and retrieving newspapers and books. This can be attributed to the fact that newspapers are mostly visible in the institutions' libraries under study. Students do not need searching using the OPAC to identify and retrieve newspapers, hence, the easiness of their identification, retrieval and use. Books on the other hand, are the most known and common sources of information. This is supported by the fact that lecturers prescribe texts for students' use. Similarly, most students find books easier to use than other sources of information such as journals and databases. It was discovered that the students who have received some form of Information Literacy training, had the perception that they were able to independently identify, locate and retrieve information, unlike those that had not received any kind of Information Literacy training. It could also be that students lack the information search and use skills such as described in the the Big6 Skills model by Eisenberg and Berkowitz (1990:n.p), the Information Search Process model, by Kuhlthau (1993:1-3), the Seven Pillars of Information Literacy (Sconul, 1999: 6-8), the Research Process model by Stripling and Pitts (1988: n.p) and the Pathways to Knowledge model by

Pappas and Tepe (2002:1-3). Bruce (2002:5) notes that information literacy encourages deep, rather than surface learning and it has the potential to change dependent learners into independent, self-directed, lifelong learners. People who lack information literacy depend upon others to search, identify, locate and retrieve knowledge and information.

The majority of the students who were had the perception that they were able to identify, locate, retrieve and use information were from the Durban University of Technology who had acquired the skills to independently identify, locate, retrieve and use information resources from the Library. The library offers information literacy to the students at all level of study and teach about I-link, basic search, advanced search, sources of information, E-resources, and locating information using different retrieval tools. Others may have acquired the skills from attending the Communication Skills modules or course offered by the English Department. While respondents from the University of Zululand most likely could have acquired the skills from the module of Information Literacy and library orientation programme which is mandatory to first year students in the University and teach students information sources, search tools, databases and search engines. Respondents from Mzuzu University could probably have acquired the skills from the course of Information Literacy offered to first year students in the Department of Library and Information Science, Communication Studies which is offered to all first year students in the university and teach students about information sources, search tools, search engines, databases and searching and locating information using different search tools and in the library during the library orientation programme in which some topics such as searching and retrieval tools, use of the internet and the OPAC, classification and arrangement of information sources in the library and citing and referencing of academic works are taught.

5.10 Students' perception about their ability to independently identify, locate retrieve and use information sources by using the OPAC, Indexing and abstracting journals.

The OPAC and indexing and abstracting journals are access tools which have been defined as "a resource, the sole purpose of which is to lead the user to particular types of information" (Ojedokun 2007: 65). Without information access tools, a user would be

frustrated by not knowing if information required exists and where to find it. It is important therefore that students learn about, and become familiar with their use.

The students' perception about the familiarity in the use of the OPAC at the DUT, can be attributed to the fact that Subject Librarians teach students Information Literacy in the library, so as to equip the students with the skills to independently search, identify, locate and retrieve information sources, using retrieval tools such as the OPAC, and indexing and abstracting journals. At the University of Zululand, respondents' perception about the familiarity to use the OPAC can be ascribed to the fact that they acquired the skills from the module of Information Literacy and during the Library Orientation programme in which first timers in the university are taught and have hands-on, in the use of the OPAC, indexing and abstracting journals. At Mzuni, the reason that can be advanced for students who have not received formal information literacy training, but have the perception about the ability to independently identify and locate collections in the library by using the OPAC is that, students learn search and retrieval of information in their first year of study in the course of Communication skills, which is compulsory to all first year students in the University. In addition, during the library orientation programme, students are taught how to search and retrieve information in the library by the use of the OPAC, indexing and abstracting Journals.

However, the trend at the University of Zululand and Mzuzu University show that the majority of the students that had not received formal information literacy training had the perception that they did not have the ability to use indexing and abstracting journals. The reason could be that some students are not interested as they are so absorbed into the use of the Internet. This view is supported by Throll in (Selematsula, 2005:31) who observes that students are so used to the use of the Web, such that their search skills are poor and they are unable to distinguish appropriate from inappropriate resources for their assignments that. In addition, Throll in (Selematsula, 2005:31) notes, "modern students' behaviour leaves much to be desired." The perception is that they read less and have less intellectual curiosity. Alternatively, it could be that they are too busy with other activities to explore and learn what libraries have to offer. Another factor might be that academic departments

are assigning fewer projects to students that require exploring and using library resources. It could also be that some students had been absconding from attending library orientation programmes because they felt they were not important as they never carried any marks in their subjects.

It can be deduced that inculcation of Information Literacy skills in students is important for their information seeking, identifying, retrieval and use.

5.11 Use of citations and references in academic works.

The use of citations and references in institutions of higher learning can not be over emphasised. The writing of citations and references in academic works is best summed up by the SCONUL working group (1999: 6), Information Literacy Pillar number six, which is, the ability to organise, apply and communicate information to others. It states that, in communicating information to others, the student should understand ethical, legal, and socio-economic issues surrounding information. In addition, the student should demonstrate an understanding of intellectual property, copyright and fair use of copyrighted materials. To avoid issues of plagiarism, the student should acknowledge the use of information sources by selecting an appropriate citation style in project reports and theses. Throll in (Selematsula, 2005:31) found that students majoring in business, mathematics or science infrequently use the library. This explains why most of respondents that indicated not using citations and references come from the same field of study. The trend shows that the majority of respondents who have not received information literacy training be it, formal or informal do not use citations and reference in their academic works. All respondents that had received formal information literacy training had indicated using citations and references in the academic works and references.

5.12 Challenges faced in the teaching and learning of Information Literacy or library orientation programme.

Some of the most critical common problems faced in the three institutions pertaining to the teaching and learning of information literacy, include inadequate time, lack of computer

skills, inadequate venues and equipment, lack of cooperation, overcrowding of classes and erratic network connections.

Time plays a very important role in the teaching of information literacy. The shorter the period of teaching, the more likely that teaching cannot be done effectively and that the important information skills cannot be adequately imparted to the students. If, on the other hand, the teaching period is longer, there is more likelihood that students can grasp the topics being taught. All the three institutions showed lack of adequate time in effectively teaching their students. Information Literacy requires that students do practicals, but again, within such a short period of time, this has a bearing on students, especially the slow learners in grasping a lot of topics within such a short time frame. Moore and Abson (in Selematsula, 2005:30) affirm that, students enter the university with a greater polarity of skills thereby making it difficult for academic and library staff to pitch Information Literacy sessions at the same level. Additionally learning in such an environment is made difficult, because students have different learning abilities. In some cases, students would need personal attention in order for them to grasp the content. It is difficult to personally attend to each student in overcrowded classes. This view has been noted by O' Hair and Odell, Hope et al. and Winfred and Manning in (Selematsula, 2005:30) who tend to agree that the student population of today is very diverse and teachers are responsible for classrooms that represent students of different colours, racial and ethnic groups, religion languages, backgrounds, ages and learning styles and computer skills.

Another problem encountered in the teaching of the information literacy or library orientation programme in the three institutions under study was students' lack of computer literacy or skills. Some topics such as the use of the OPAC, databases, search engines, searching and retrieval in the module or course of information literacy involve the use of the computers and the Internet. As such, it requires that the students should be computer literate. This has an implication in teaching, in that a lot of time is taken for teaching students basic computer literacy instead of going straight to teaching Information Literacy or Library Orientation Programme since students are slow and it makes teaching very difficult.

Another problem faced is inadequate equipment such as computers and overhead projectors and venues for students' practicals. The teaching of Information Literacy requires that it be in a setting where there are computers for students' practicals. This contributes to a smooth teaching and learning environment. The shortage of equipment and venues means limited access to computers and subsequent lack of adequate practicals being offered.

Lack of teamwork between academic teaching staff and library staff in teaching library information literacy or orientation programme was found to be a problem faced by the library staff. Lack of cooperation hinders the successful running of Information Literacy or Library Orientation Programmes. This might result in frictions, fighting for equipment and venues for teaching as well as duplication of topics being taught. For any teaching programme to run successfully, it needs the partnership of key players. In this case academic staff and library staff need to collaborate when it comes to the teaching of Information Literacy or Library Orientation Programmes, because it involves the inculcation of skills into students in order for them to independently identify, locate, retrieve and use information responsibly by writing citations and references in their academic works, without bothering their lecturers. This argument is supported by Barbour, Gavin and Canefield (2004:3), who noted that collaboration among faculty, librarians and technical staff is important for coming up with appropriate training needs, information sources, learning modules, and computer and information literacy requirements, as well as to assist students gain expertise in technical design and interface issues that will help them succeed in a university environment and beyond. Thompson (2000:3) also notes that the introduction of computer skills and information literacy at the University of Pretoria in 1998 necessitated collaboration between the Departments of Information Science, Informatics and Computer Science as well as the academic information service in the development of the course.

The other problem that was observed as being common was erratic network connections due to power disruptions at both the University of Zululand and Mzuzu University. According to the researcher's own views, load shedding of power is beyond the Universities' control and it is viewed as a national as well as a regional crisis pertaining in most of the countries in the Southern Africa region. The power blackouts tend to disrupt

the teaching and learning of Information Literacy in that classes are based on the use of computers, overhead projectors and the Internet. Once power goes out, it means, the network server is disrupted for some time and classes are dismissed. This also has a bearing on students' practicals as most often the servers are down.

5.13 Summary

This chapter has discussed issues arising from students, academic teaching staff as well as from library staff. It has incorporated findings from all the data gathering tools. The chapter has established that information literacy is offered and taught at the University of Zululand and Mzuzu University. It has been evident from the discussion that at both, the University of Zululand and Mzuzu University lecturers in the Department of Library and Information science take the lead in the design, formulation and review of the syllabus. Some students alluded to the fact that they were aware of the availability of and attended the module or course in information literacy. It has been made clear in the discussion that the academic staff are responsible for teaching the module or course of information literacy, whereas library staff are responsible for teaching library orientation programme. It was indicated too, that teaching academic staff and library staff form partnerships in teaching information literacy or library skill to students albeit loosely. A strong collaboration exists at DUT.

It has been revealed that, modes of delivery by the academic teaching respondents are mostly by lectures, group discussions and practicals, whereas delivery by library staff was mainly by both theory and practical modes. Students' learning modes, theoretical and practical, involved lectures by lecturers in class and group discussions. Some common topics taught in Information Literacy classes and during the Library Orientation Programmes include among others; sources of information, searching and retrieval tools, referencing and citing and copyright, use of the Internet and electronic sources such as databases.

It was found that most students that had attended information literacy training in the form of a module or course, and library orientation programme, had the perception that they had the ability to independently search identify, locate, retrieve and use information. The study also found that students were more familiar with the OPAC than indexing and abstracting journals. A good number of students used citations and references in their academic works, though the majority does not. Some common problems faced by academic teaching staff, library staff and the students had to do with include inadequate time, lack of computer skills, inadequate venues and equipment, lack of cooperation, overcrowding of classes and erratic network connection.

Chapter Six provides the summary, recommendations and conclusion based on the research objectives.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

The purpose of the chapter is to summarise the research findings, and to propose recommendations on the teaching of information literacy in institutions of higher learning under study. The chapter also suggests items for further research. To this end, the chapter is divided into introduction, summary, conclusions and recommendations.

The aim of the study was to investigate the teaching and learning of information literacy in institutions of higher learning in KwaZulu-Natal province and Malawi. In order to accomplish the aim of the study, the following objectives were generated:

- To determine the offer and teaching of information literacy.
- To ascertain learning of information literacy.
- To establish who is responsible for the teaching of Information Literacy module/course/ Library orientation programme.
- To establish the existence of collaboration between library staff and the department of library and information Science.
- To determine the students' perception about their ability to independently identify, locate, retrieve and use of information resources by the students.
- To establish the problems faced in the teaching and learning of information literacy.
- To seek suggestions from library and academic teaching staff on the most effective method for teaching information literacy.

6.2 Summary

This section summarises the research findings based on the seven research objective as outlined above.

6.2.1 To determine the offer and teaching of information literacy.

The study revealed that information literacy is offered and taught at the University of Zululand's and Mzuzu University's Departments of Library and Information as a module and course respectively. The module or course is periodically reviewed at both the University of Zululand and Mzuzu University. Information literacy offered and taught by the library as part of the library orientation Programme at the Durban University of Technology. The modes of delivery by the academic teaching respondents are mostly by lectures, group discussions and practicals.

6.2.2 To ascertain the learning modes of information literacy

The learning modes offered in the information literacy module or course are theoretical and practical, which involved lectures by lecturers in class, and group discussions.

6.2.3 To establish who is responsible for the teaching of information literacy module or course or Library orientation programme.

The study established that, at University of Zululand and Mzuzu University, lecturers in the Departments of Library and Information Science were responsible for teaching the formal Information Literacy module or course. Whereas, Senior Subject Librarians were responsible for conducting or teaching the Library Orientation Programme at the University of Zululand and Durban University of Technology. At Mzuzu University, the study found that senior library staffs are responsible for conducting the library orientation programme.

Various topics were indicated as being taught by both the academic and library staff. The topics include information sources, searching and retrieval tools, evaluating and manipulating information in usable form, referencing and citing and copyright, communicating information, use of the Internet and electronic sources such as Databases and organisation of information resources in the library (see par 4.93 and 4.2.10 in chap 4).

6.2.4 To establish the existence of collaboration between library staff and the Department of Library and Information science.

Academic and library staff from the University of Zululand and Mzuzu University indicated that they do not collaborate formally in the teaching of Information literacy or library orientation programme. At the University of Zululand, library staff indicated that informal collaboration exists in the form of some lecturers sending students to the library to familiarise themselves with collections in the library, to have hands-on practicals such as searching and retrieval of databases, use of the indexes and the OPAC. At the Durban University of Technology, libraries collaborate with all the Departments in the teaching of Information literacy or library orientation programme.

6.2.5 To determine the students' perception about their ability to independently identify, locate, retrieve and use of information resources.

Most of the respondents, both who had received formal information literacy training and those who had not received formal information literacy training had the perception that they had the ability to independently identify, locate, and retrieve mostly newspapers followed by books. Hence, information Literacy is important whether it is delivered formally in class or in the Library during the orientation programme, the bottom line is that it helps the students to acquire the skill to independently search and retrieve information.

Pertaining to the use of citations and references in academic works, the study found that all respondents that had received formal information literacy training used citations and references in their academic works and references. While, most of respondents that had not received formal information literacy training did not use citations and reference in their academic works.

6.2.6 To establish the problems faced in the teaching and learning of information literacy or library orientation programme.

Both academic staff, library staff and the students mentioned some of the common problems they encountered as inadequate time, lack of computer skills by the students, inadequate venues and equipment for teaching and students' practicals, lack of cooperation

overcrowding of classes and erratic network connections due to the power disruptions and the fault inherent in the performance of the libraries' computer systems at both the University of Zululand and Mzuzu University (See pars 4.5, 4.95 and 4.10.4 in chap 4).

6.2.7 To seek suggestions from library and academic staff on the most effective method for teaching information literacy or library orientation programme.

The academic staff at the University of Zululand and Mzuzu University suggested that the most effective method for teaching information literacy was in computer laboratory setting, where there are computers.

6.3 Conclusion

The study found that information literacy is embedded into the curricula of the Departments of Library and Information Science at the University of Zululand and Mzuzu University and taught is offered through the Module or Course of Information Literacy at both universities. In as far as, the responsibility for teaching information literacy or library orientation is concerned, it was established that lecturers in the Departments of Library and Information Science were responsible for teaching Information Literacy module or course and Senior Subject Librarians were responsible for conducting or teaching Library orientation programmes at the University of Zululand and Durban University of Technology. At Mzuzu University, the study found that senior library staff is responsible for conducting library orientation programme. The study, ascertained that some topics taught in the module or course of information literacy information sources, searching and retrieval tools, evaluating and manipulating information in usable form, referencing and citing and copyright, communicating information, use of the Internet and electronic sources such as Databases and organisation of information resources in the library were similar to the ones taught during the library orientation programme. Modes of delivery are mainly by lectures, group discussions and practicals in the computer laboratory and both theory and practical modes in the Library.

It was found that, at the University of Zululand and Mzuzu University, formal collaboration between academic staff and library staff in the teaching of information literacy or library orientation programme does not exist. However, at the Durban University of Technology, collaboration between library staff and academic departments in the teaching of information literacy or library orientation programme exists.

Furthermore, the study shows that the majority of respondents, both those that had received formal information literacy training, and those that had not received formal information literacy training, were able to identify, locate, retrieve and use mostly newspapers and books. Pertaining to the use of citations and references in academic works, the study found that all respondents that had received formal information literacy training used citations and references in their academic works and references. While, most of respondents that had not received formal information literacy training did not use citations and reference in their academic works.

Several problems that are faced in the teaching and learning of information literacy were enumerated as including in-adequate time, lack of computer skills by the students, inadequate venues and equipment for teaching and students' practicals, lack of cooperation, overcrowding of classes and erratic network connections due to power disruptions. In addition, the most effective method for teaching information literacy suggested, was in computer laboratory setting, where there are computers.

6.4 Recommendations

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

6.4.1 Offer and teaching of Information literacy.

- The offer and teaching of information literacy into the whole Universities where information literacy topics should be embedded into the student's course materials, delivered in the context of the subject they are studying, be adopted.

This approach is viewed as the most effective way for enabling students to develop their information literacy skills. It also allows the use of information to become part of the learning process and prepares them for the challenges of research, problem solving and continuous learning.

- The Durban University of Technology should introduce a dedicated module or course in information literacy and embed it into the students' course materials. The three universities should also publicise to academic staff, students and the decision makers the importance of having module or course of information literacy.

6.4.2 Design, formulation and review of the module or course of information literacy.

- The Department of Library and Information Science at the University of Zululand should design, formulate and review its curriculum in a form of workshop at which stakeholders from various departments and sectors should be involved as is the case at Mzuzu University. Modern teaching in institutions of higher learning requires partnerships with all stakeholders.

6.4.3 Establishment of a formal collaboration between library staff and academic staff.

- A formal collaboration between academic and library staff should be introduced at the University of Zululand and Mzuzu University to an extent that the academic teaching departments should give up their lecture periods so that they can send the students to the library to learn about searching, identifying, locating, retrieving of information.
- Library staff should be invited to classes to teach practical aspects of information literacy and academic staff should be invited to teach in their subject areas during the library orientation programme. Collaboration between library staff and academic staff is the hallmark of making a successful information literacy or library orientation programme in a University.

6.4.4 The teaching and learning of information literacy.

- Information Literacy should be introduced into various modules or courses published and presented online in WebCT modules and delivered lecture modes with the help of tutorials, and workshops.
- Topics to be taught should encompass the various information literacy standards such as the Seven pillars of information literacy, the Big6 skills, Information Search process, Research process Model, and pathways to Knowledge.

6.4.5 Students' perception about their ability to independently identify, locate, retrieve and use of information resources by using the OPAC, indexing and abstracting journals.

- Academic staff should reinforce students' use of indexing and abstracting journals by collaborating among themselves in giving the students more work, assignments that require searching and the use of indexing and abstracting journals.

6.4.6 Use of citations and references in academic works.

- Academic staff should collaborate among themselves and with library staff by devising a uniform citation style to be used by students and reinforce, the students' use of citations and references;
- Academic staff should give assignments to students that entail the use of citations and references and
- Academic staff should insist on their students attending library orientation programmes so that they could be imparted with an ability to correctly write citations and references in their academic work.

6.4.7 Problems faced in the teaching and learning of information literacy or library orientation programme.

The recommendation emanate from the suggested solutions by the academic teaching and library staff and the students.

6.4.7.1 Time factor

- In order to beat the time factor, the University of Zululand should revert to the semester system where there would be enough contact hours between the academic staff with students, who in turn would have enough time to grasp the content;
- At Mzuni, a proper timetable should be allocated to enable students in the Department of Library and Information Science for the use of the ICT laboratory.
- For teaching of library orientation programmes, library staff should negotiate with the academic departments so that some departments should provide in their curricula, more slots for the teaching of Information Literacy or library orientation programme.

6.4.7.2 Lack of computer literacy

- The three institutions should consider buying dummy computers connected to the terminals where students can practice their computer skills. In addition, teaching of computer skills should be made compulsory to all students starting from first year and it should be a comprehensive deliberate policy of one to two months of teaching computer skills and
- Some private companies should be considered to teach computer skills.

6.4.7.3 In adequate equipment and venues.

- Universities' management should buy more computers and projectors and build more computer laboratories. If they can not manage to buy then, they should

consider leasing the equipment from some companies so that after one or two years the equipment could be returned.

6.4.7.4 Lack of Cooperation

- A campus-wide approach cooperation should be initiated from which management should direct the Deans and Heads of Departments to instruct the academic staff to allocate more hours for library training.
- A formal agreement between academic staff and library staff should be made. This would entail forming a well structured programme for teaching information literacy or library orientation programme in which subject librarians would be invited to class and teach about the resources available in the library and an assessment of students should be done at the end of the teaching or training sessions and marks or grades awarded should count towards their end of the term or semester continuous assessments.

6.4.7.5 Overcrowding of classes.

- Small manageable classes of 25 are recommended, with the help of tutorials.

6.4.7.6 Erratic network connections.

- Universities' management should consider buying power generators and upgrade the current network.

6.4.8. The most effective method for teaching information literacy.

The study echoes suggestions made by the academic staff in the teaching of information literacy as being in a computer laboratory.

- Teaching should be reinforced by buying some dummy computers.

6.5 Recommendations for further study.

The study proposes that:

- An INFOLIT project study conducted in the Western Cape Province be replicated in KwaZulu-Natal Province and Malawi.
- A comprehensive study on information literacy should be carried out, once an across-the- curriculum model it is put in place.
- A feasibility study of rolling out the study in information literacy to a wider cross section of institutions in South Africa and Malawi should be conducted.
- A study on sharing of best practice or experiences between and among institutions regarding the teaching and learning of information literacy in institutions of higher learning should be considered.

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APPENDIX 1

Table for Research Methodology

Aim: To investigate the teaching and learning of information literacy in institutions of higher learning in Kwazulu-Natal Province and Malawi			
Objectives	Questions	Method	Instrument
1. To determine the offer and teaching of information literacy .	1. Is information literacy taught and offered in the Universities under study?	Survey	Interview schedule Questionnaire
		Document study	Literature review
2. To ascertain the learning of information literacy or library orientation programme.	2. What learning modes exist in the institution?	Survey	Questionnaire
3. To establish the who are responsible for the teaching of information literacy or library orientation programme.	3. Who are responsible for the teaching of information literacy or library orientation programme?	Survey	Interview schedule
4. To ascertain the existence of collaboration between library staff and the Department of Library and Information Science in the teaching of information literacy or library orientation programme.	4. Is there any collaboration between library staff and the Department of Library and Information Science in the teaching of information literacy or library orientation programme?	Survey	Interview schedule
5. To determine students' perception about their ability to independently identify, locate, retrieve and use of information resources by the students.	5. Are students able to independently identify, locate, retrieve and use information resources?	Survey	Questionnaire Observation
6. To identify problems faced in the teaching and learning of information literacy or library orientation programme.	6. What problems do the universities face in the delivery of information literacy or library orientation programme?	Survey	Questionnaire Interview schedule
7. To seek suggestions from library and faculty staff on the most effective method for teaching information literacy or library orientation programme	What are the solutions to the challenges faced in the delivery of information literacy or library orientation programme?	Survey	Interview schedule

APPENDIX 2
Questionnaire for students

**UNIVERSITY OF ZULULAND DEPARTMENT OF LIBRARY AND
INFORMATION SCIENCE**

Dear respondent

I am currently a student carrying out a study on ‘Teaching and learning of Information Literacy in Institutions of higher learning in KwaZulu –Natal Province and Malawi to fulfill the requirements of the Master of Library and Information Science, in the Department of Library and Information Science at the University of Zululand. The title of my dissertation and the purpose of the study is to investigate the **‘Teaching and Learning of Information Literacy in Institutions of higher Learning in KwaZulu – Natal. Province and Malawi’**

The purpose of this questionnaire is to solicit data. You were selected randomly to partake in this research and it would be much appreciated if you could kindly spare some time off your busy schedule and respond to the items in this questionnaire fully and honestly. Your invitation to respond to this questionnaire is voluntary and you may withdraw at any time for whatever reasons. However, I would be most grateful if you could fill in the questionnaire, and return it to the secretary of your department or your lecturer. You stand to benefit by responding to the questionnaire as it would give you an idea of designing questionnaires. Your responses would be used for research purposes only and would be treated with strict confidentiality. No names of respondents will be divulged during the dissemination of the results and the publication of the thesis. Data will be disposed of in the form of burning immediately after an analysis has been conducted. Your quick response would be highly appreciated.

Please fill in a declaration form.

Thank you

Yours Sincerely

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Declaration

I.....(full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am at liberty to withdraw from the project at any time, should I so desire.

SIGNATURE OF PARTICIPANT

DATE

.....
.....

Please answer all questions as completely as possible by indicating your option with either a cross (x) or a tick (✓) in the brackets.

Section 1: Personal Information

1. Please indicate you institutional affiliation.

- University of Zululand []
- Durban University of Technology – MS Sultan Campus []
- Mzuzu University []

2. Indicate the faculty you belong to (e.g. Faculty of Arts).
.....

3. What is your level of study?

- Under- graduate []
- Post- graduate certificate []
- Post –graduate diploma []
- Honours []
- Masters []
- Doctorate []
- Post Doctoral []

4. What is your gender?

- Male []
- Female []

Section 2: Offer and Teaching of Information Literacy .

Instruction: Please read before you answer the questions.
Information literacy is a course or module offered to teach and equip students with the skills to independently search, identify, locate, evaluate, retrieve and use information sources such as books, journals, online databases, newspapers, encyclopedias and handbooks and directories for various purposes. In addition, the course or module also teaches students about citing sources of information and making a list of references in assignments, research and other academic works.

5. Are you aware of the availability of a course or module in information literacy?
Aware []
Not aware []
Do not know []

6. Do you attend or have you attended the course or module in information literacy?
Yes []
No []

If your answer to question 6 is “no”, proceed to question 18, if “yes” please proceed with the next question.

7. What is the title and code of the course or module?
.....

8. Which department teaches the information literacy course or module?
.....

9. Which topics are covered in information literacy course or module?
.....

10. Are you satisfied with the content being offered in information literacy?
Yes []
No []

11. If your answer in question 10 is “no”, state the areas that need to be removed and/or added.
.....
.....
.....

12. Do you think it is relevant for you to have a course or module of information literacy in your institution?
Yes []
No []

Indicate the reason for your answer.
.....

Section 3
3.1 Modes of teaching information literacy.

13. What is the mode of teaching the information literacy classes?

- Lectures by lecturers []
- Learning guides []
- Web classes []
- Interactive CD []
- Other, specify

3.2 Learning modes of information literacy

14. Which of the following learning modes does the module offer?

- Theoretical mode only []
- Practical mode only []
- Both theoretical and practical modes []

15. State the mode of learning that you would favour.
.....
.....

Section 4: Problems being faced in the teaching and learning of information literacy

16. What problems do you face in the learning and application of information literacy module?

.....
.....

Section 5: Suggestions on the most effective learning and application of information literacy module.

17. Suggest solutions to the problems mentioned in question 16.

.....
.....

Section 6: Students’ perception about the ability to independently identify, locate and retrieve information.

18. State whether or not you are able to independently identify, locate, retrieve and use the following information sources.

Information sources	Identify	Locate	Retrieve	Use
Books				
Databases				
Encyclopedia				
Handbooks and Directories				
Journals				
Newspapers				

19. Are you able to independently identify and locate collections in the Library using the following aids or tools?

Open Access Public Catalogue	Yes []	No []
Indexes	Yes []	No []
Abstract Journals	Yes []	No []

20. Which of the following access points do you use in the retrieval of information?

Author	[]
Title	[]
Subject	[]
All of them	[]
Other, specify	
.....	

21. Indicate the purposes that you use information for.

For Decision -making	
For entertainment	
For general information	
Learning purposes	
Problem solving	

22. Do you know how to use citations and references in your academic works?

Yes

No

[]

[]

23. If “no”, what problems do you experience? If “yes”, where did you learn about citing and referencing?

Thank you very much for your time and effort in completing this questionnaire. Make sure you have responded to all items relevant to you.

APPENDIX 3

Observation Schedule

Ability to independently identify, locate, retrieve and use various information sources.

1. Searching for information Sources.

Behaviour	Access points used	Frequency	Comment
Books			
Databases			
Encyclopedias			
Journals			
Newspapers			

2. Locating and identifying information sources

Behaviour	Access points used	Frequency	Comment
Books			
Databases			
Encyclopedias			
Journals			
Newspapers			

3. Retrieving information sources.

Behaviour	Source	Comment
Books		
Databases		
Encyclopedias		
Journals		
Newspapers		

APPENDIX 4

Interview schedule for Academic staff.

Section 1: Personal Information

1. What is your institutional affiliation?

University of Zululand []

Durban University of Technology – MS Sultan Campus []

Mzuzu University []

2. Which faculty do you belong to?

.....

3. What is your rank?

Professor []

Associate Professor []

Senior lecturer []

Lecturer []

Junior lecturer []

Other, specify []

SECTION 2: Offer and teaching of Information Literacy.

4. Is the Module or course of Information literacy offered in your Department?

Yes []

No []

5. Is the Module or course of Information Literacy embedded into your department's Curriculum?

Yes ☐ ☐
No ☐ ☐

5. Who is responsible for the design and formulation of the information Literacy syllabus?

6. How is the syllabus on Information Literacy designed?

7. Is the syllabus of Information Literacy reviewed?

Yes ☐ ☐
No ☐ ☐

8. If the answer in 7 is yes, state how often is the syllabus reviewed.

SECTION 3: Responsibility for the teaching of Information literacy.

9. What topics are covered in teaching information literacy?

10. What mode of delivery is used in teaching information literacy?

11. To whom is the course of information literacy offered or taught? Give reasons for the answer.

12. In your opinion, do you think this module or course adequately equip students with the skills for writing assignments, do research and other information related tasks?

13. In your opinion, do you think this module adequately equip students with the skills to independently identify, locate and retrieve information?

14. In your opinion, does the module instill in students the ability to correctly write citations and references?

15. If the answers to questions 12, 13 and 14 are no, what do you see as the problem?

16. How many lecturers are involved in teaching information literacy?

SECTION 4: Existence of Collaboration between academic staff and Library staff

17. Is there any collaboration in the teaching of Information Literacy between the department responsible for teaching information literacy and Library staff?

18. If yes, indicate the roles and responsibilities played by each in the teaching of Information Literacy.

Roles and responsibilities of the teaching Department.

Roles and responsibilities of the Library staff.

SECTION 5: Problems faced in the delivery of Information Literacy Module or Course.

19. Do you face any problems in the delivery of information Literacy module?

20. If the answer in question 23 is yes, state the problems being faced.

21. Suggest solutions to the problems mentioned in 24 above.

SECTION 6: Suggestions from the faculty and library staff on the most effective method for teaching information literacy.

22. Based on your experience which method(s) is or are the most effective for teaching information literacy to the students.

APPENDIX 5

Interview schedule for Library staff.

Section 1: Personal Information

1. What is your institutional affiliation?

University of Zululand []

Durban University of Technology – MS Sultan Campus []

Mzuzu University []

2. What is your rank?

University Librarian []

Deputy University Librarian []

Senior Information Librarian []

Reader Services Librarian []

Periodicals Librarian []

Cataloguing Librarian []

Subject Librarian []

Other, specify.....

SECTION 2: Responsibility for the teaching of library orientation Programme or Information Literacy.

3. Do you take part or assist in teaching library orientation programme or information literacy?

4. If, the answer in 3 is yes, what topics are covered in teaching library orientation programme or information literacy?

5. What modes do you use in teaching library orientation programme or information literacy?

6. To whom is the library orientation programme or information literacy offered or taught? Give reasons for the answer.

7. In your opinion, do you think the teaching of library orientation programme or information literacy adequately equip students with the skills to independently identify, locate, retrieve and information?

SECTION 3: Existence of Collaboration between library staff and the department responsible for teaching information literacy.

8. Do you collaborate in the teaching of library orientation programme or information literacy with the department teaching information literacy?
9. Are there any problems you face in the collaboration of teaching library orientation programme or information literacy with the department's staff members? If yes state the problems experienced.
10. If yes, indicate the roles and responsibilities played by each in the teaching of library orientation programme or information literacy

Roles and responsibilities of the teaching Department.

Roles and responsibilities of the Library workers.

SECTION 4: Problems faced in the teaching of Library Orientation programme or Information literacy.

11. Do you face any problems in the teaching of library orientation programme or information literacy?
12. If the answer in question 11 is yes, state the problems being faced.
13. Suggest solutions to the problems mentioned in 12 above.

SECTION 5: Suggestions from library staff on the most effective method for teaching Library Orientation Programme or Information Literacy.

14. Based on your experience which method(s) is or are the most effective for teaching library orientation programme or information literacy to the students?