Evaluating an Information Literacy intervention for first year Faculty of Business students at Rosebank College Cape Town

By

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DECLARATION

I Russell Chisango, declare that the thesis entitled: ***Evaluating an Information Literacy intervention for first year Faculty of Business students at Rosebank College Cape Town*** is my own work that it has not been submitted for any other degrees or assessment at any university. All the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

Signature……..

Date……..

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ABSTRACT

The purpose of this research is to investigate the effectiveness of an Information Literacy intervention administered to first year Faculty of Business students at Rosebank College Cape Town. The exponential nature of information has led to students having access to abundant information which often comes unfiltered. This requires them to be in possession of life long competencies to find and apply this information to solve problems. Recent shifts in pedagogy and curricula have also precipitated the importance of independent learners who are capable of constructing their own knowledge. Student centred methods of teaching employed in tertiary institutions such as, problem based learning, evidence based learning and inquiry learning have necessitated the importance of Information Literacy training towards the development of independent learners. The study assesses the baseline incoming skills of the Faculty of Business students. Two intervention workshops are conducted for the experimental cohort and a post-test is administered. After the post-test the results of the control and experimental group are compared. The study uses the Association of College and Research Libraries (ACRL) Information Literacy Standards for higher education as a theoretical foundation. The standards are applied as benchmarks when assessing the Information Literacy competencies. The study explores the following research questions:

- Are the Information Literacy interventions administered to the first year business faculty students effective and do they meet the proposed outcomes?
- What are the existing Information Literacy competencies of the incoming students in the Faculty of Business?
- How should Information Literacy programmes be delivered?
- Are the ACRL standards a reliable tool to assess Information Literacy skills and the effectiveness of the interventions administered?

The study found out that offering Information Literacy interventions would result in students accumulating these skills. This is supported by the difference in scores between the control group and the experimental cohort. However it must be noted that Information Literacy training is not an event but rather an on-going process.

Key words

Information Literacy, Information Literacy education, higher education pedagogy, Information Literacy standards, computer literacy, life- long learning, faculty library collaboration, American College and Research Libraries Information Literacy standards, Rosebank College, Business Students, Information Search Process

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LIST OF ACRONYMS

ACRL	Association of College and Research Libraries
ALA	American Library Association
CALICO	Cape Library Cooperative
CHE	Council for Higher Education
CPUT	Cape Peninsula University of Technology
DAFC	Diploma in Accounting and Financial Computing
DCBM	Diploma in Commerce in Business Management
DUT	Durban University of Technology
HET	Higher Education and Training
HCBPP	Higher Certificate in Business Principles and Practice
HCOA	Higher Certificate in Office Administration
IIE	Independent Institute of Education
ICT	Information and Communication Technology
ISP	Information Search Process
IT	Information Technology
LIASA	Library Association of South Africa
LIS	Library and Information Science
NEIMS	National Education and Management Infrastructure Systems
OPAC	Online Public Access Catalogue
SCONUL	The Society of College, National and University Libraries
UNIZUL	University of Zululand

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CHAPTER 1

INTRODUCTION AND CONCEPTUAL BACKGROUND

1 Introduction

The exponential nature of information requires an increasingly critical approach to information searching. Information related education has become one obligation higher education establishments can no longer disregard (Mittermeyer 2005:206). Information explosion has steered the multiplication of information in enormous quantities. Students have access to unfiltered information in different magnitudes. The variation in quality necessitates the prerequisite to be proficient in the aptitude to deal with information overload, information anxiety and constant changes in format and retrieval techniques (Bent and Stockdale 2009, Chipeta, Daisy and Mostert 2008, King 2007, Latham and Grass 2011, Lwehabura 2008 and Hart and Davids 2010). These challenges compel students entering tertiary institutions to possess Information Literacy skills requisite for survival in the information wilderness characterized by the proliferation of information and knowledge. The research project reports on present levels of Information Literacy competencies of students in the Business Faculty at Rosebank College, Cape Town. The exploration assesses the effectiveness of Information Literacy education interventions offered by the library in the advent of information explosion.

1.2 Purpose of the study

Rosebank College prides itself on small interactive classes, courses that are integrated with work experience, secure and socially interactive environments. The college strives to ensure that students become employable, embrace diversity, are innovative and entrepreneurial, uphold high ethical standards, and possess work readiness with generic and analytical skills (Rosebank College 2011). The mission of the college is to produce employable graduates capable of applying knowledge in real work situations. To attain this goal, graduates need to be in possession of a number of skills including information skills in order to adjust to an information and

knowledge driven society. Mittermeyer (2005:206) argues that today's students must be given tools for tomorrow's information survival and that library instruction should enable students to acquire new work procedures and to become autonomous.

Rosebank College is an educational brand of the Independent Institute of Education (IIE). It is registered by the Department of Education as a Higher Education and Training (HET) provider. The college is made up of a long history of the coming together of a number of small vocationally focused training providers which came together to form an entity that is Rosebank College. In 1909, Imperial Underwood Campus (IUC) was founded in Cape Town as a secretarial college, and due to growth it acquired the Cape Draughting Academy. Rosebank College was then founded in 1948 as a finishing school for girls based in Rosebank Johannesburg (Rosebank College 2011). It offers Diplomas and Certificates across its four faculties.

The IIE is the registered and accredited education and training provider for Rosebank College. The tertiary wing of the IIE includes other colleges namely, College Campus, Varsity College and Vega School of brand leadership. Rosebank College has five sites of delivery offering IIE accredited qualifications. All the five sites boast of libraries intended at supporting the teaching and learning aspect of the colleges. Across all the sites, Information Literacy education is considered a key aspect in support of quality teaching and learning. However, Librarians at all the sites are faced with challenges in implementing Information Literacy education. Information Literacy education is non-compulsory at Rosebank College. Librarians struggle to get students to attend these workshops. In most cases they end up conducting workshops that are poorly attended. This scenario might in the long run jeopardize the student's chances of acquiring Information Literacy skills during their stay with the institution.

The majority of students enrolling at Rosebank College Cape Town might be lacking Information Literacy skills pertinent for them to function effectively at an institution of higher learning. This can be attributed to a significant number of them coming from previously disadvantaged communities where access to libraries is nonexistent. This lack of exposure to community and school libraries results in students experiencing Information Literacy deficiencies. Sayeed and De Jager (1997:6), contend that

consideration needs to be paid to the fact that students from vastly under-resourced educational systems have not been exposed to information sources and technologies that require or foster the development of Information Literacy. Higher educational institutions need to come up with recuperative measures to bridge the skills gap characteristic of first year students.

Bruce and Candy, as cited in (Lwehabura 2008), noted that the consciousness of librarians and other educators about Information Literacy importance has spread around the world mainly as a result of technological developments of the 21st century that has propagated information explosion. This point is further supported by Adeogun as reported in Jiyane and Onyancha (2010:12) who posit that the new world order, characterized by the abundance and ready availability of digital information through computer networks, means that information has become ubiquitous and therefore can be obtained at any time and in any location no matter the distance as long as the necessary infrastructure and the skills to retrieve information from global networks are readily available. Twenty first century students are faced with a daunting task of filtering through the abundant information resources available and retrieving relevant information and the ability to apply and use the information legally to solve specific problems. Information Literacy skills have thus become imperative for tertiary students as reported by Somi and De Jager (2005:260), who noted that mastering these skills in an academic context enables students to function effectively during their academic years and beyond. They further asserted that, for libraries to meet the present challenges in the information age, they should engage in student learning and empower students with essential information skills.

1.3 Justification of the study

The information explosion has ushered in numerous benefits to mankind, but at the same time it has also brought in some challenges. Technological advances have fuelled information propagation, both in terms of quality and quantity. Information is now obtainable in massive quantities. This has resulted in a situational challenge that requires individuals to have knowledge and skills to handle and exploit the abundant information and knowledge efficiently. Much of this information comes

unfiltered by peer review and this raises questions about authenticity, validity and reliability (Somi & De Jager 2005:259).

Academic institutions are regarded as centres of knowledge. Through their libraries, they invest heavily in acquiring information resources in various formats with the aim of making sure that learners have access to the best quality information. In some cases, this information is not adequately put to good use due to lack of Information Literacy skills amongst students. The current scenario that academic libraries in South Africa are currently facing can be linked to the fact that the majority of the students entering tertiary education come from secondary school backgrounds where the exposure to libraries was limited.

At Rosebank College, during the orientation week, students are introduced to the library and its resources. The introduction might not be sufficient to give students confidence to use the college library and locate the appropriate materials they are looking for (Somi & De Jager 2005:265). The general lack of access to information sources experienced in the African continent for both educational and leisure purposes often results in information illiterate students, ill-prepared for the rigours of information searching and retrieval at tertiary level (Chipeta, Daisy and Mostert 2008:46). Information Literacy has become a key aspect or skill which students need to possess in order to function effectively at tertiary level.

Recent shifts in pedagogy and curricula have also precipitated the importance of independent learners who are capable of constructing their own knowledge. Student centred methods of teaching employed in tertiary institutions such as, problem based learning, evidence based learning and inquiry learning have necessitated the importance of Information Literacy training towards the development of independent learners. Salisbury and Karasmanis (2011:43) are of the view that Information Literacy and learning are intertwined and that the former is similar to other fundamental capabilities that support learning and must be nurtured in the first year of study. Students need to assimilate and grasp the lower order skills needed to find and access information and the higher order thinking required to use and evaluate information (Chipeta, Daisy and Mostert 2008, King 2007 and Salisbury &

Karasmanis 2011). Higher education institutions must produce lifelong learners who possess the intellectual ability of reason and critical thinking for learning how to learn. Gaining Information Literacy skills multiplies opportunities for student's self-directed learning as they become engaged in using a variety of information sources to expand their knowledge, ask informed questions and sharpen critical thinking skills (Association of College & Research Libraries, 2011).

Information Literacy standards have been set and have been used to assess competencies of students entering public universities. Little is known on whether South African students at private HET colleges meet these standards. According to a report published by the Council for Higher Education (CHE) in 2009, the number of registered private colleges in South Africa was estimated to be 103 with a combined enrolment figures of over 30 000 students. The purpose of this research study is to conduct a baseline survey of Information Literacy competencies of incoming Business Faculty students at Rosebank College in order to gather data that can be used to support the need for an Information Literacy course for all the students. The study assessed the effectiveness of an Information Literacy intervention extended to the experimental group. According to Maughan (2001:71), measuring Information Literacy competencies will establish a baseline of student skills, supply guidelines for adapting current Information Literacy courses where necessary, assess the effectiveness of the library orientation programs and determine the impact of the library orientation and Information Literacy programs on academic success.

1.4 Theoretical framework and conceptual Analysis

1.4.1 Kuhlthau's ISP Model

Information Literacy has emerged to become a key aspect in current higher education and training pedagogy. Carole Kuhlthau's Information Search Process (ISP) model has had a strong bearing on Information Literacy research throughout the 21st century and a strong influence on the current state of the information science field. This study is premised upon Kuhlthau’s ISP model and applies the ACRL standards to measure Information Literacy levels of the students. The ISP is characterized by a six stage model of the user's holistic experience in the process of information seeking (Kuhlthau 2004). The ISP model emerged out of a longitudinal

study conducted by Kuhlthau for her PhD research that spanned for over 14 years. A key aspect of the ISP is the notion that uncertainty, both affective and cognitive, increases and decreases in the process of information seeking (Kuhlthau 2004).

The ISP model involves the user's constructive activity of finding meaning from information in order to extend his state of knowledge on a particular topic (Kuhlthau 2004). Her sentiments are further echoed by Orme (2008:67-68) who argues that, the central role that the constructivist approach plays in devising an Information Literacy education takes into account not only that students have existing knowledge but also their existing beliefs about knowledge and learning have an impact on their development of information literacies skills and abilities. Information seeking is viewed as a sense making process that allows individuals to construct knowledge through finding meaning that fits in what they already know. The significance of this model for this study implies that there is more to user instruction than showing users how to locate the right pieces of information from the shelves. The process goes beyond access and enables students to possess skills to engage with information and construct new meaning based on prior knowledge. Rosebank College library provides its students with access to a variety of information sources hence the need for them to possess Information Literacy skills to engage with information from different sources. The model supports current higher education pedagogy which is more student focussed and requires students who are independent learners and capable of learning how to learn.

Figure 1: Kuhlthau's Information Search Process (ISP) model (Kuhlthau 2004)

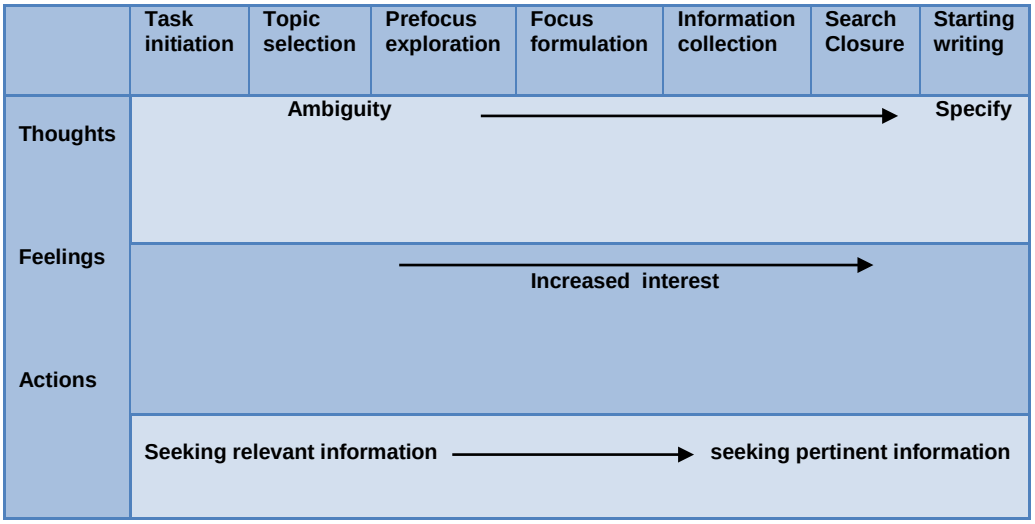


Figure 1 depicts the ISP model. The *initiation* stage forms the initial stage and it involves an individual awareness of the existence of a knowledge gap or a lack of understanding. This stage is characterized by feelings of uncertainty and apprehension. The second stage of the ISP model is the *selection* phase which involves the identification and selection of a topic to be explored. The feelings of uncertainty will make way for optimism after the selection has been made and the individual is prepared to commence the search.

The third stage is the *exploration* phase. At this stage an individual is characterized by feelings of confusion, uncertainty and doubt which will frequently increase at this time. The task involves the investigation of information on a general topic in order to extend personal understanding. Thoughts centre on becoming oriented and sufficiently informed about a topic. The *formulation* stage is when feelings of uncertainty diminish and confidence increases. Thoughts involve identifying and selecting ideas in the information from which to form a focussed perspective of the topic. The collection stage is the information seeking process when interaction between the user and the information systems functions most effectively and efficiently. The task involves the gathering of information related to the focussed topic and the thoughts centre on defining, extending and supporting the focus. The final stage of the model is the *presentation* phase. At this stage, feelings of relief are common with a sense of satisfaction if the search has gone well and disappointment if it has not.

1.4.2 ACRL standards

Information Literacy has evolved to become a key aspect in higher education learning and it has formed an integral part of the literature of higher education libraries. The most commonly used definition of Information Literacy was coined by the American Library Association (ALA) (1989: 1) which defined Information Literacy as the ability of an information literate person to be able to recognise when information is needed and have the ability to locate from a variety of sources (both print and electronic) and use effectively the retrieved information to solve a particular problem or to make a decision. Information explosion has led to the overabundance of information available in today's world and has necessitated the need for potential

users of this information to be in possession of Information Literacy skills. For this study the Association of College and Research Libraries (ACRL) Information Literacy Standards for higher education were used as an assessment or a benchmarking tool. The ACRL standards evolved from the ISP model which was chosen as a theoretical framework for this study.

Five Information Literacy standards for higher education are identified (Association of College and Research Libraries, 2011). They are briefly:

Standard 1: The information literate student determines the nature and extent of the information needed.

Standard 2: The information literate student accesses the needed information effectively and efficiently.

Standard 3: The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.

Standard 4: The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.

Standard 5: The information literate student understands many economic, legal and social issues surrounding the use of information and accesses and uses information ethically and legally.

Each standard had several performance indicators and outcomes (ACRL, 2011). To evaluate Information Literacy competencies, a set of standards has to be determined and used as an evaluative checklist to measure against existing levels. According to De Jager and Nassimbeni (2003:109) benchmarking is a strategic assessment tool commonly practiced in the business sector environment. It essentially consists of comparing best practices with one's own practice in order to ensure continuous improvement and attain excellence. The ACRL standards were used as assessment benchmarks the study.

Two Information Literacy training workshops were used as interventions on the experimental group. Not all of the ACRL Information Literacy standards for higher education can be taught in two workshops. During the workshops standard 1, 2 and 5 were addressed.

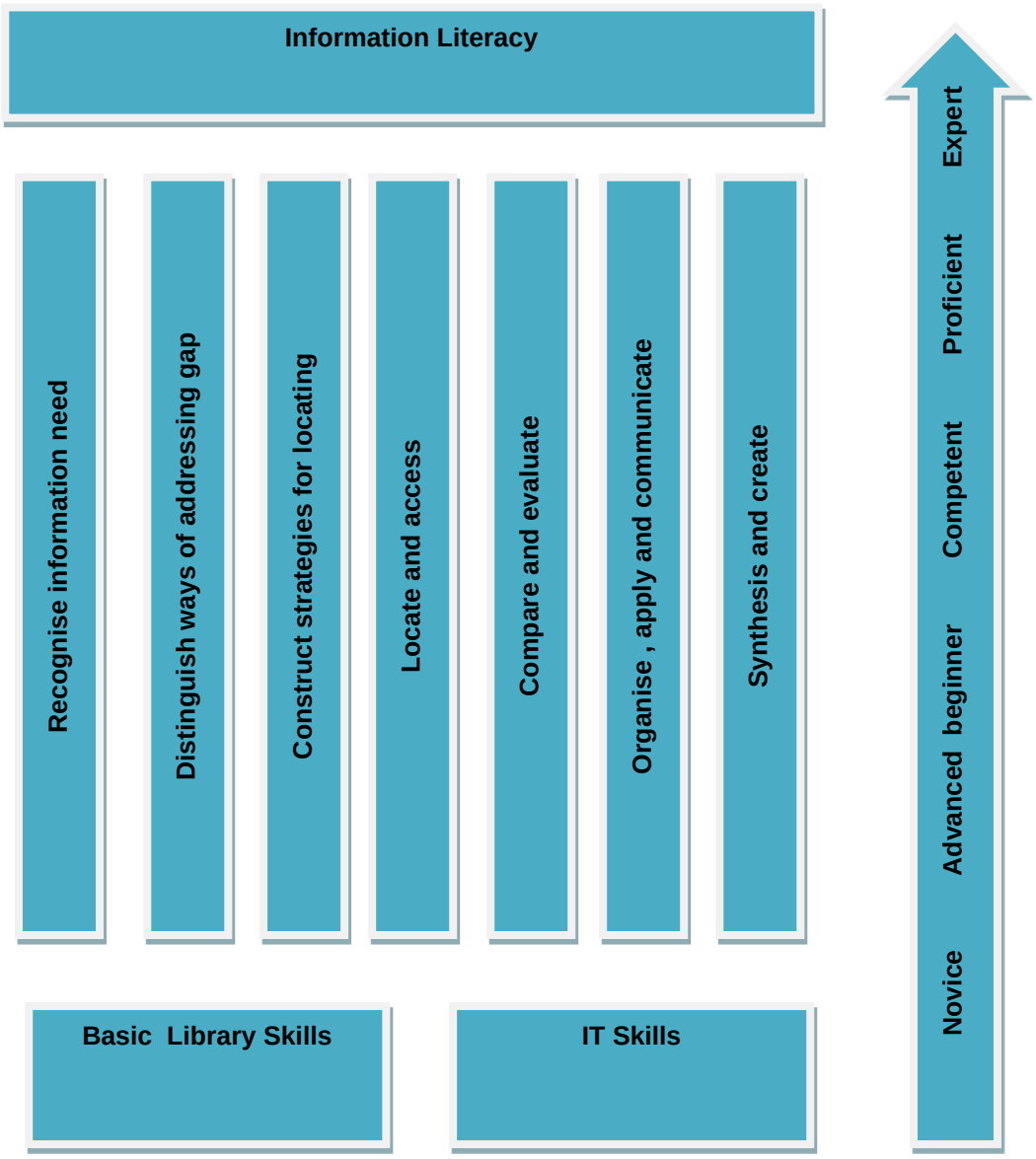
Emphasis was on:

- The determination of the nature and extend of the information need;
- The ability to identify a variety of different types of information sources;
- The effective and efficient retrieval of information and
- The ethical and legal use of information.

1.4.3 The SCONUL model

The Society of College, National and University Libraries (SCONUL) published a seven pillar model of Information Literacy that describes the seven main information skills pertinent to all students (SCONUL 2011). At the base of the model are the twin fundamental building blocks of basic library skills and Information Technology (IT) skills. This model is relevant to any Information Literacy intervention as it assumes that incoming students or first year students would be at the bottom of the arrow and any training to be implemented should take cognisance of that fact. The first year business faculty students will be at the bottom of the arrow if the SCONUL model is applied. After the interventions they should progress steadily through the arrow through the acquisition of some of the Information Literacy skills covered in the various interventions available for them.

Figure 2: Information Literacy model (SCONUL, 2011)



1.5 Definition of key terms

1.5.1 Information Literacy

Information Literacy is a term used to describe a number of initiatives in higher education that seek to meet the broad demands of the information society (Weber 2003:335). He further asserts that Information Literacy is the adoption of appropriate information behaviour to obtain, through whatever channel or medium, information well fitted to information needs, together with critical awareness of the importance of

wise and ethical use of information in society. The most commonly used definition of Information Literacy was coined by the American Library Association (1989: 1) which defined Information Literacy as the ability of an information literate person to be able to recognise when information is needed and have the ability to locate from a variety of sources (both print and electronic) and use effectively the retrieved information to solve a particular problem or to make a decision.

1.5.2 Computer literacy

King (2007:8) defines computer literacy as the understanding of what computer hardware and software can do. Being computer literate allows individuals to utilise computers efficiently. King (2007:8) noted that being computer literate does not automatically guarantee one to attain Information Literacy competencies. Information Literacy skills extend beyond computer literacy, as they require cognitive skills and problem solving processes.

1.5.3 Information Literacy education

Information Literacy education refers to the various approaches applied towards the delivery of Information Literacy education to the campus wide community. The methods selected are crucial in achieving the desired outcomes of Information Literacy training. Various approaches can be used in the delivery of Information Literacy education and these are the generic model and the integrated approach. The generic model occurs when academic librarians offer general library instruction to the students. The integrated approach requires the embedding of Information Literacy into an academic programme.

1.6 Research problem

The majority of students enrolling at Rosebank College come from previously disadvantaged communities where they did not have exposure to libraries at secondary schools. The lack of exposure will result in them suffering from Information Literacy skills deficiency. In their first year of study, students are expected to attend library orientation workshops that are aimed at equipping them

with basic library skills. The introductory workshop offered to them is not enough to guarantee aptitude and allow them to function effectively at a tertiary level. During the course of the year, the library offers non-compulsory Information Literacy workshops that are characterized by low attendance. Faced with such a scenario, there is great need to conduct a baseline survey of Information Literacy competencies of incoming students in order to prescribe interventions based on the findings.

The research problem and the preliminary literature review have led the need to investigate the following research questions:

- What are incoming Business Faculty students' levels of Information Literacy skills?
- What impact will the Information Literacy education interventions have on students?

1.7 Ethics Statement

For every research, there are ethical issues that need to be taken into consideration. The researcher adhered to the ethical guidelines as set out by the Research Committee of the University of the Western Cape. Informed consent was obtained from the students selected to participate in the research process and anonymity was guaranteed. Permission to undertake the study using Rosebank College Cape Town was granted by the college management.

1.8 Chapter outline

Chapter 1: This chapter introduces the research topic. It provides background description and states the ethical principles of the study.

Chapter 2: The main purpose of this chapter is to highlight and analyse existing research on Information Literacy tuition in higher education.

Chapter 3: This chapter describes the research design and research methodology. It will shed more light on the pre-test and post-test phases of this research and the criteria that is going to be used to select the control and the experimental group.

Chapter 4: This chapter presents the data collected from the questionnaires completed by both the experimental and control group.

Chapter 5: An analysis and interpretations of the findings will be done in this chapter.

Chapter 6: This chapter presents the recommendations of the study.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Chapter one provided a brief introduction to the research problem as well as the underlying theoretical framework for Information Literacy instruction in higher education that underpins this study. The current chapter will briefly describe Information Literacy as a concept and documents South African and international literature on Information Literacy tuition in higher education. The chapter is split into four areas:

- Information Literacy: a brief overview
- Information Literacy research literature in South Africa
- International research literature on Information Literacy
- Themes and issues affecting Information Literacy education

2.2 Information Literacy: a brief overview

The term Information Literacy has evolved over time from library user education. Zurkowski (1974:6) first used the term information skills in 1974 to refer to a person who is able to solve information problems by using relevant information sources and apply relevant technology. The term Information Literacy can be perceived as referring to the use of information technology, or a combination of information and technology skills, or acquiring mental models of information systems (King 2007:11). In 1989 the American Library Association (ALA) recognised the term Information Literacy with the publication of the final report of the presidential committee on Information Literacy. The report contained a widely accepted definition of Information Literacy provided by the American Library Association in 1989 which states that:

> "……..*to be information literate, a person must be able to recognise when information is needed and have the ability to locate, evaluate and use effectively the needed information ultimately information literate people are those who have learned how to learn. They know how to learn because they know how knowledge is organised, how to find information in such a way that others can learn from them, they are people prepared for lifelong learning, because they can find information needed for any task or decision (*American Library Association Presidential Committee on Information Literacy, 1989:1*)".*

Various organisations have promulgated Information Literacy competencies benchmarks. The ACRL, SCONUL and ALA came up with their own of sets of standards. The ACRL standards as listed in chapter 1 were used as assessment benchmarks for the study. De Jager and Nassimbeni (2003:109) summarises the competency standards from the various institutions to come up with the following list as the characteristics of an information literate person:

1. Recognise a need for information
2. Access needed information effectively and efficiently
3. Evaluate information and its sources critically
4. Incorporate selected information into his/her knowledge base
5. Use information to accomplish a specific purpose.
6. Understand economic and social issues and uses the acquired information ethically and legally.
7. Recognise that lifelong learning and participative citizenship requires Information Literacy.

2.3 Information Literacy studies in South Africa

Somi and De Jager (2005:259-267) undertook a research study aimed at investigating the extent to which the University of Fort Hare promotes and enhances Information Literacy. A survey questionnaire was used as the research instrument to gather data from both undergraduate and post graduate students. The purpose of the survey was to ascertain whether the library is providing students with information skills for their academic work. Findings from the research suggested that the library is actually playing an active role towards the provision of information skills to

students. This is demonstrated by the various initiatives in place to ensure students are taught these skills. According to Somi and De jager (2005:261), the library offers library orientation workshops for incoming students and in addition to that, it also provides ongoing intensive training workshops offered by subject librarians and meant to equip students to become information competent. At Fort Hare library, the general library orientation is aimed at familiarizing students with the basic library skills to be able to navigate through the library holdings. Whilst on the other hand the intensive workshops are aimed at ensuring the effective usage of library tools such as OPAC and online databases as well as referencing and plagiarism. Somi and De Jager (2005:261), report that collaboration between academics and librarians is evident in that occasionally staff responsible for certain subjects send their students to the library. The students are trained more specifically in the identification and use of information resources of their particular subject areas and this is called subject orientation.

At these subject orientation sessions, students are taught on how to use information resources that are in the library on a specific subject. The sessions further equip them on how to use the library homepage where students learn about library services, evaluation of resources, database usage, academic writing, citation styles and general library rules and regulations. Over and above the general library workshops, the Fort Hare University offers an additional computer course for a specific fee. The aim of the course is to teach students the basic components of the computer and how to use Microsoft applications such as Word, PowerPoint, Excel, Access and Internet (Somi and De Jager 2005:261). Library orientation is offered to first year students to make them comfortable with research at a tertiary level. However, Somi and De Jager's study revealed that 53% of first year students at Fort Hare University did not attend the library orientation which is compulsory.

Davids (2009: 5) conducted a research project that was aimed at investigating the effectiveness of Information Literacy intervention for first year engineering students at the Cape Peninsula University of Technology. The Information Literacy competency standards used for the research were based on the ACRL standards which are internationally recognized and used widely in South Africa by academic librarians. The research methodology involved the assessment of Information Literacy skills of the engineering students before and after exposure to an

information skills workshop. Students undertook a pre-test before the workshop and a post-test after the exposure. The intervention consisted of two workshops which were aimed at teaching the students how to find relevant information for their research via the universities Online Public Access Catalogue (OPAC), various engineering databases and to teach them how to reference and cite their sources correctly.

Davids (2009: 5) reports that the results from the investigation revealed that the intervention was very effective. This point is supported by marked improvements in the post test scores of participating students. In her study, Davids (2009:68) emphasized the importance of a needs assessment before the implementation of Information Literacy education. This was revealed by the pre-intervention test scores that indicated the areas where the researcher should place greater emphasis during the interventions such as, bibliographic referencing, citing and ethical use of information.

In 2007 King undertook a PhD study over three years in the Arts Faculty of the University of the Western Cape. The research project had two main objectives, to assess the Information Literacy skills of first year students and to evaluate the impact of the Library Science 121 (Information Literacy) course, which is a credit bearing module offered by the University of Western Cape Library and Information Science Department. The study involved the administering of a pre-test before and a post-test after the Library Science 121 course. A comparison of the results revealed that the Library Science 121 module impacts positively on Information Literacy scores (King, 2007: 167). A pretest was administered to students before they undertook the course. This was aimed at assessing the baseline information skills of the incoming students.

De Jager and Nassimbeni (2003:108) undertook a research study to explore the current status of Information Literacy tuition in South African institutions. The research consisted of two exploratory surveys. The first survey involved the participation of ten different Information Literacy providers that were selected at a LIASA conference in 2001. The second phase involved a follow up survey that was undertaken at the 2002 LIASA conference (De Jager and Nassimbeni 2003:108). The questionnaire survey administered in 2001 was meant to find out the current

status of Information Literacy in academic institutions in South Africa. Responses were received from twelve academic institutions with research results being part of a report presented by De Jager and Nassimbeni at the 2002 LIASA conference (De Jager and Nassimbeni 2003:110). At that conference a follow up questionnaire was administered amongst the delegates to obtain a further indication and ascertain the consensus with results obtained from the questionnaire survey. A total of 50 questionnaires were distributed with a response rate of 64%.

Responses from the study, gave an indication that that there was little explicit evidence of institutional strategic plans or policy statements that specifically acknowledge a responsibility of inculcating Information Literacy in students (De Jager and Nassimbeni 2003:111). However the study discovered that the respondents shared the same sentiments with regards to the need for information professionals to lobby for institutional support for Information Literacy at the highest levels in their institutions (De Jager and Nassimbeni 2003:111). With regards to how Information Literacy education is being delivered at these institutions, there was a mixed response. Responses from the first survey indicated the methods of delivery being practiced to be stand alone and generic courses as well as attempts to integrate the courses into the subject curricula. On the other hand for the second survey, results showed most support being for integrating of Information Literacy into the subject curricula with 81% of the respondents supporting that notion. Sixty six percent favored the delivery of Information Literacy as a generic stand-alone course.

Bitso (2000:29) undertook a research study which was aimed at investigating the levels of Information Literacy skills amongst the undergraduate students at the University of Cape Town. The study aimed at exploring the relationship between Information Literacy competencies and academic performance (Bitso 2000:29). A questionnaire survey was used as a data gathering tool for the purpose of this research. The questionnaires were administered to students and completed in the researcher's presence and this resulted in a higher response rate being achieved within a short space of time (Bitso 2000:29). Purposive sampling was applied for Bitso's study with the student sample size being 660. In the findings, Bitso (2000:29) reports that the results of the study indicated that students who possessed Information Literacy related competencies performed better in their examinations. He

further asserted that, there was a positive correlation between students' academic performance and Information Literacy skills competency.

A critical study which has a strong bearing on this study is the investigation that was conducted by Cape Library Cooperative (CALICO), the Western Cape higher education consortium into the Information Literacy needs of students within the CALICO university consortium. The study was carried out in 1998 and included four Western Cape universities namely Cape Peninsula University of Technology (CPUT), University of the Western Cape (UWC), University of Cape Town (UCT) and University of Stellenbosch (US) (Sayeed 1999:13). A questionnaire survey was administered to the student sample. In addition to this, a two focus group interviews were arranged with librarians and their educators. The first focus group aimed at gaining insight with regards to Information Literacy and Information Literacy programs at CALICO institutions. The second focus group was established to discuss results from the questionnaire administered regarding Information Literacy abilities and needs of students. The study concluded that students from previously disadvantaged institutions had Information Literacy deficiencies as compared to those from the previously advantaged institutions.

2.4 International studies on Information Literacy

Numerous studies on Information Literacy education have been conducted internationally and it is practically impossible to discuss all of them. However studies with a direct bearing on this study will be discussed.

Ferguson, Neely & Sullivan (2005: 61-71) conducted a baseline Information Literacy assessment of biology students at the University of Maryland. The survey was also based on the ACRL literacy standards to gather baseline data of information skills of incoming students. To determine the Information Literacy levels of incoming students, the researchers identified those academic departments with a history of working with the library as targets. The findings of the study revealed that the majority of students had some basic understanding of Information Literacy skills. On the contrary, the study also discovered that the students were not in possession of

the most important concepts of Information Literacy such as quality of resources and the understanding of copyright (Ferguson, Neely & Sullivan, 2008: 71).

Chipeta, Daisy and Mostert (2009:46) conducted a survey on three universities, namely University of Zululand (Unizul), Durban University of Technology (DUT) and Mzuni University in Malawi to find out how Information Literacy skills are offered at these institutions. Participants to the study included library staff members, academic staff and students. The study reports on the offering of Information Literacy initiatives at these institutions. The findings of the study revealed that Information Literacy is taught as a module at Unizul and as a course at Mzuni by the universities respective Departments of Library Science. The study further revealed that it was not offered across all the faculties. At DUT it is taught during the library orientation and is aimed at all students across all the faculties.

Salisbury and Karasmanis (2011) undertook a research study that was meant to explore student Information Literacy skills in the transition from secondary to tertiary education. The research was meant to ascertain the baseline information skills that the so called “Google generation” possesses when they progress from secondary school to tertiary education. Salisbury and Karasmanis (2011:43) are of the opinion that a thorough understanding of student’s prior knowledge provides a foundation on which to introduce appropriate learning activities during their first year of study. In 2009, they measured and analyzed the entry level information skills of incoming first year students in the health sciences department at the Trobe University. The data for the study was collected during the first week of the semester.

The main purpose of the study was to challenge the popular belief held by librarians and academics that incoming students enroll at tertiary institutions with no information skills knowledge. They argue that, while it is not surprising, nor should it be expected that commencing students are ready and equipped for discovering and using scholarly information, it should not also be assumed that this lack of readiness and awareness means that students are totally information literate (Salisbury and Karasmanis 2011:44). They further state that academic librarians need to recognize that research skills does not necessarily begin in the first year, but existing skills represent a milestone along the lifelong learning continuum. First year students do

possess some skills which can be harnessed and developed to embrace scholarly literacy.

The findings of Salisbury and Karasmanis (2011:50) study demonstrated that entry level students do enroll to tertiary institutions with some information skills that are commensurate with their existing level. The findings revealed that 77% of the students managed to recognize a journal citation. The majority of students were not familiar with the concept of using databases for finding scholarly journals, but however the results showed some awareness of the contents in online databases. Results also further indicated a reasonable level of Boolean logic understanding within the cohort, with approximately half of the respondents selecting the appropriate operator to limit the search (Salisbury and Karasmanis 2011:51).

In 2005, Mittermeyer undertook a study at Quebec University in Canada which is more or less similar to the current study. The purpose of the study was to ascertain the Information Literacy skills of first year incoming students at Quebec University (Mittermeyer 2005:203). Three thousand students participated in the study by completing the questionnaire representing a response rate of 56.9%. The results of the study indicated that, a majority of the respondents lacked a clear understanding and grasp of the information seeking process. It was found out that, the respondents demonstrated some problems with regards to the identification of significant terms, the proper understanding of the role of the Boolean operators or tools used to identify controlled vocabulary. The respondents also demonstrated a lack of knowledge pertaining to the library catalogue and the characteristics of a scholarly journal. The overall conclusion drawn from the findings of the Quebec University study, was that first year students enrolling at the university lack the most fundamental and basic information skills pertinent at higher education institutions (Mittermeyer 2005:224).

Lwehabura (2008) undertook a research study to examine Information Literacy delivery at four Tanzanian universities. The study involved a questionnaire survey with librarians and undergraduate students and it was undertaken in order to prescribe best practices for adoption by higher education institutions in Tanzania with regards to developing Information Literacy programmes for students (Lwehabura 2008:158). Purposive sampling method was chosen deliberately to

select the four universities to participate in this study. A survey administered questionnaire was used to collect data from the librarians and undergraduate students. Twenty five librarians with a first degree as a minimum qualification constituted the entire population of the librarian sample (Lwehabura 2008:161). On the other hand, the student sample was obtained using probability sampling with a total of 1123 questionnaires being administered to students. A separate questionnaire was administered to the 25 librarians.

Responses from the study showed 92% of librarians from the four universities provided Information Literacy training to their users and 66% of librarians taught Information Literacy as a stand-alone programme. On the other hand 82.6% of the respondents confirmed that the delivery of Information Literacy was being done as a collaborative effort between librarians and academics (Lwehabura 2008:161). Students' responses indicated that 49% of the students were aware of Information Literacy education at these institutions, whilst 51% were not.

In the advent of information explosion, Mutula, Wamukoya and Zulu (2005) conducted a research study to determine the status and level of integration of Information Literacy within academic programs of the Library and Information Science (LIS) at the University of Botswana. The study was motivated after the identification that LIS students at the university were encountering challenges in their learning and this was attributed to the lack of information skills to locate and effectively utilise informational resources for their assignments. In a study by Underwood (2001) as reported in Mutula, Wamukoya and Zulu (2005:80) LIS students lacked the requisite information skills to critically engage and analyse scholarly information and internalise it into their existing body of knowledge. The inability to reference and cite properly was also another shortcoming that was highlighted by Underwood (2001) in his examiners report.

The population for this study consisted of all the stakeholders involved in the delivery of Information Literacy education at the University of Botswana and the LIS students. The student's sample was purposively selected to include fourth year undergraduate students and first year master students (Mutula, Wamukoya and Zulu 2005:84). Results of the study revealed that LIS programs consisted of some Information

Literacy components integrated in them. There was a strong consensus from the academic staff interviewed that LIS students suffered from information skills deficiency.

2.5 Key Issues and themes affecting Information Literacy

The survey of Information Literacy literature both local and international revealed the following key issues that impact on the teaching and learning of Information Literacy in higher education institutions:

- Integration vs. stand-alone teaching
- Incoming students lack of information skills
- Collaboration between librarians and academics
- Information Literacy assessment
- Information Literacy and ICT issues

2.5.1 Integration vs. stand-alone teaching

A brief survey of research pointed to the fact that there are diverse viewpoints with regards to whether Information Literacy education should be taught as a standalone course or it should be integrated or embedded within the curricula. De Jager and Nassimbeni (2003) carried out a research study to explore the current status of Information Literacy tuition at various institutions of higher learning in South Africa. Findings of their study revealed that most support was for integrating Information Literacy into the subject curricula, with 81% of the respondents supporting that view point. On the other hand, 66% of the respondents supported the idea of Information Literacy being taught as a standalone course with credits allocation for students. There is general agreement that Information Literacy should be taught as a credit bearing module as revealed by De Jager and Nassimbeni (2003:111). Their findings revealed that seven institutions where offering fully assessed courses and three by means of assignments. Pope, Puttick and Walton (2010:106) concluded that Information Literacy training is more effective and adds value if it is incorporated into the curriculum. These findings are further supported by Bent and Stockdale (2009:52), who suggested that, the integration of a self-reflective activity alongside skills development is particularly important to support the development of Information Literacy as a habit of learning. They argue that some aspects of Information Literacy

can be taught in the same way. However some other aspects are best assimilated by students if they are learned within a specific disciplinary context.

2.5.2 Incoming students lack of information skills

In 1998 the Cape Library Co-operative (CALICO), the Western Cape's higher education consortium, assessed the competencies of students in four higher education institutions in the region in three areas of Information Literacy: reading and writing ability, library usage and computer competence. The study revealed significant differences between students from the historically disadvantaged University of the Western Cape and Peninsula Technikon (Sayeed 1999:6-7). These findings are further supported by King (2007:1), who states that the majority of students entering tertiary education lack Information Literacy skills. This can be attributed to amongst others, the legacy of inadequate schooling, lack of exposure to school libraries and public libraries and limited access to resources. According to a report by the National Education and Infrastructure Management Systems (NEIMS) in 2009, only 8% of public schools have stocked and functional libraries. This entails that when students graduate from secondary schools to tertiary institutions, they are already suffering from Information Literacy skills deficiencies.

Whilst recent studies by Hart and Davids (2010), King (2007) and Mittermeyer (2005) concluded that incoming students enter tertiary institutions with information skills deficiencies, Salisbury and Karismanis 2011 ground breaking study proved otherwise. Salisbury and Karasmanis (2011:50) argue that students do actually bring in some skills that are commensurate with their current level of educational attainment. The study findings demonstrated that entry level students do possess some Information Literacy skills which entails that they are well placed to building skills in areas they are less competent in (Salisbury and Karasmanis 2011:50). They argue that librarians and academics need to understand that students do come to college with prior knowledge and that knowledge needs to be harnessed and extended to embrace scholarly literacy. On the other hand, it must be noted that, Salisbury and Karasmanis study was undertaken in the developed world and may not be generalised in an African or developing country context due to differences in

access to resources. African studies by Chipeta, Daisy and Mostert (2008), Hart and Davids (2010), King (2007), Lwehabura (2008) and Sayeed (1997) reported that due to lack of resources in developing countries, students enrol at tertiary institutions already suffering from Information Literacy deficiencies. Sayeed (1997) is of the opinion that due attention needs to be paid to the fact that students from vastly under-resourced educational systems have not been exposed to information sources and technologies that require or foster the development of Information Literacy. Chipeta, Daisy and Mostert (2008:46) further supports this view point by arguing that, the general lack of access to information experienced on the African continent for both educational and leisure purposes, often results in in information illiterate students, ill prepared for the rigors of information searching and retrieval at tertiary level.

2.5.3 Collaboration between librarians and academics

A glance at the literature revealed the importance of collaboration with regards to Information Literacy training between librarians and academics (ACRL 2011, Davids 2009:68, and Hart & Davids, 2010: 25, Maitaouthong, Kulthida & Techmanee, 2011: 138 and Mitchel-Kamalie 2011:192). Studies by (Dobozy and Gross 2010:97 & McCluskey 2010:252) highlighted the importance for library and faculty collaboration and its significance towards the success of Information Literacy education. McCluskey (2010:252) asserts that working with academics would allow librarians a more integral part in module building and allows the two to develop a deeper understanding of each other's roles. The collaboration of effort is of paramount importance as it allows for the cross pollination of ideas between librarians and academics. Cochrane (2006:99) stresses that while information professionals are the drivers of key Information Literacy developments and education but it should be noted that Information Literacy is an educational issue relevant to various professions supporting learning. De Jager and Nassimbeni (2003:113) report the need for Information Literacy practitioners to understand that the competencies and skills required for effective information handling are best taught when they are integrated into the curricula and taught by librarians and academics in partnership. Lwehabura (2008:164) suggests that, librarians need to recognise that although they are experts in Information Literacy, they should be willing to invite the teaching staff

to participate in the teaching of Information Literacy in order to make it effective. Buer (2011:59) is of the opinion that Information Literacy cannot be effective if it is given by faculty alone, because the faculty may not be able to show mastery of the subject matter than librarians. The (ACRL 2011) adds to this debate by concluding that:

- Academics bring with them a pedagogical understanding of students' strengths, weaknesses and the content to be taught.
- Librarians possess in-depth knowledge of Information Literacy skills and methods of integrating them into the courses.

Information Literacy training should not be seen as a library preserve, but rather a campus wide initiative. However in as much as collaboration is of utmost importance towards the success of Information Literacy training, a lot needs to be done to ensure that librarians and academics appreciate each other as educational allies. Chipeta, Daisy and Mostert (2008:57) report on lack of collaboration between librarians and academics with regards to Information Literacy education at the University of Mzuzu and the University of Zululand. Findings from the research indicated that academics were guilty of sending students to the library for general information skills training without communicating their intent beforehand to the librarians which would generally affect Information Literacy education delivery as the librarians might be ill –prepared at that time. Chipeta (2010:29) identify the lack of collaboration in the design and review of Information Literacy curricula amongst the various stakeholders, such as librarians, administrators, lecturers and curriculum designers. Davids (2009:66) reports on lack of trust and communication in her findings as she noted that the lecturer she was working with refused to allow her to gain access to student's assignments to analyse the success of her Information Literacy interventions. A lack of collaboration is detrimental to the success of Information Literacy education and thus collaboration is of supreme importance to ensure success of the programmes. The involvement of librarians in teaching Information Literacy courses has ignited a heated debate that is well rehearsed in the literature. The debate seeks to question the competence of the librarian as a teacher, developer of the curricula and assessor of students (Buer 2011:46).

2.5.4 Information Literacy assessment

Information Literacy assessment has been frequently omitted from higher education assessment efforts due to the expectation from faculty that students already acquired the skills prior to college and librarians often delivering the training but not conducting any assessment (Oakleaf 2011:18). This has been a major challenge as most of the times Information Literacy courses are not mandatory and credit bearing which results in students not attending. King (2007:77) reports that students do not go voluntarily for training sessions offered by the academic library and students do not devote time to activities which do not count towards the official assessment. Library orientation programs were not assessed and a perusal of Information Literacy literature is filled with continuing debate on how to assess Information Literacy training initiatives. De Jager and Nassimbeni (2003:108-114) report in their findings that seven institutions were offering fully assessed Information Literacy courses and the course were assessed by means of assignments, tests, portfolios and examinations.

Assessment refers to activities undertaken aimed at reviewing and gauging effectiveness. Studies by De Jager and Nassimbeni (2003:108-113) and Chipeta, Daisy and Mostert (2008: 46-57) reveal the need to carefully assess the effectiveness of Information Literacy at tertiary institutions in order to ascertain effectiveness of the interventions. (Davids 2009:68) reports on the importance of assessment before the implementation of an Information Literacy programme as she noted that pre-intervention testing would indicate areas where students struggled and much attention can be allocated to that. Assessment is crucial in learning, because it makes students learn. Buer (2011:48) emphasises the importance of diagnosis of students' Information Literacy skills that would comprise of a pre-class and a post-class test administered at the beginning and at the end of the semester, with results compared as was done in studies by King (2007) and Davids (2009) and also for this current study. Emmette and Emde (2007:222) are of the idea that, assessing the method of instruction and learning outcomes are essential in ascertaining the development of Information Literacy skills. Pope, Puttick and Walton (2010:106) concluded that the inclusion of Information Literacy into the curricula, supported by assessment regimes and its delivery in an interactive environment will

produce better results in improving student's Information Literacy competency and changing the approaches to research. The proliferation of information coupled with dynamics in work environments has made it increasingly important for higher education institutions to produce quality graduates. The contribution of the library and librarians to that cause has become invaluable (Oakleaf 2011:45). Librarians add value in supporting quality teaching and learning within their institutions. Oakleaf (2009:80) emphasise the need for Librarians to demonstrate through evidence the value of Information Literacy education. This can be achieved through the assessment of Information Literacy programmes whose results can be used to convince academic managers of their benefits. Oakleaf (2008:233-247), identifies three assessment approaches:

- Rubrics – these are descriptive scoring schemes used by educators to guide analysis of student work.
- Performance assessment – these are qualitative forms of assessment that require students to apply their knowledge and skills in real life situations. After the completion of Information Literacy training, learners are then required to apply what they have learnt in real situations and they are assessed through observation.
- Fixed-choice test – these are test that include a collection of items for which there is only one answer. Fixed-choice test can be used to provide baseline information about student's library skills.

2.5.5 Information Literacy and ICT issues

A survey of the literature revealed a general agreement that computer competence is an integral component of Information Literacy education. The use of electronic resources has generally been widespread in most academic institutions in South Africa. Libraries subscribe to a host of electronic databases whose usage requires students who are computer literate and possess the necessary skills to navigate through these platforms and retrieve relevant information they are looking for. The general lack of access to resources in Africa entails that majority of students have not been exposed to technology as reported by Hugo (2003:48-49) who noted that African students do not have access to technological forms of literacies when they start their tertiary education. Studies by De Jager and Nassimbeni (2002:179) and

Hart (1999:78) revealed that most students entering tertiary education in South Africa are not computer literate due to lack of exposure to computers in schools.

2.6 Conclusion

Information Literacy education has evolved to become a key aspect in higher education pedagogy. Recent shifts in pedagogy and curricula have precipitated the importance of independent learners who are capable of constructing their own knowledge. Student centred methods of teaching employed in tertiary institutions such as, problem based learning, evidence based learning and inquiry learning have necessitated the importance of Information Literacy training towards the development of independent and lifelong learners. A perusal of the literature revealed quite a number of challenges that South African students are faced with. The majority of the students are entering tertiary education ill equipped with requisite skills necessary for them to function effectively at tertiary level.

Two projects discussed in the literature review played an important role towards the shaping of this current study. These are King's PhD study of Arts Faculty students at the University of the Western Cape and Davids Masters study of engineering students at the Cape Peninsula University of Technology.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

While chapter 2 interrogated existing literature in higher education Information Literacy tuition, chapter 3 describes the research methodology and techniques applied for this study. The chapter provides insight and explanation for the research design and methodology selected. The chapter justifies why the preferred method was selected for data collection. This study is premised upon Kuhlthau's ISP model and applies the ACRL standards to measure Information Literacy levels of the students. The standards were used in the design of the questionnaire to assess the baseline information skills of first year students at Rosebank College Cape Town. Kumar (2005:126) defines a questionnaire as a list of written questions, the answers to which are recorded by the respondents Questionnaires are regarded as the single most common research tool used in social research hence the choice of their selection for the purpose of this research. The questionnaire was chosen because it is simple to use and allows for ease of administration and its ability to be used to gather data from a large number of respondents at a low cost.

3.2 Evaluative and action research

ACRL standards were used to ascertain the existing Information Literacy competency of first year students within the Faculty of Business at Rosebank College Cape Town. Evaluative and action research were used to form the basis of the research design. Powell (1997:45) provides an insight of what action research is all about as he postulates that, it is research aimed at developing new skills or new approaches and solves problems with direct application to the classroom or other

settings. Stringer (2007) as cited by Hansen and Brady (2011:82) defines action research as a systematic approach to the investigation that enables people to find effective solutions to problems they confront in everyday life. He goes on further to suggest that action research provides the means by which people in schools, business and community organisations may increase effectiveness of the work they are engaged in. Isaac and Michael as cited by Powell (1997:45) identify the basic steps of action research to be the following:

- Defining the problem
- Reviewing the literature
- Formulating testable hypothesis or questions
- Arranging the research setting
- Establishing the measurement techniques and evaluation criteria
- Analysing the data and evaluating the results

Somekh (2005:1) describes action research as a means by which research can become a systematic intervention, going beyond describing, analysing and theorising social practices to working in partnerships with participants to reconstruct and transform these practices. Action research is not an event but rather an on-going process that is aimed at bringing about change. It assumes that complex social phenomena are best understood by introducing interventions or actions into those phenomena and observing the effects of those actions and the researcher is usually a consultant or an organisational member embedded within the organisational procedures or new technologies, in response to a real problem (Bhattacherjee, 2010:43). The purpose of this study was to examine the researchers own actions on a neutral setting applying pre and post intervention testing. Post-testing was administered after the facilitation of two Information Literacy workshops on the experimental group and the results were compared to ascertain the effective of the interventions.

3.3 Research problem

Chapter 1 discussed the aim of the study and its objectives. The study investigated existing Information Literacy competencies and skills of first year students in the Faculty of Business at Rosebank College Cape Town. It evaluated the effectiveness of an Information Literacy intervention administered to the students. Chapter 2 discussed the importance of Information Literacy education as a key aspect in the current higher education pedagogy. The current higher education landscape requires independent learners capable of constructing their own knowledge. The development of lifelong learning skills is vital as it empowers students to learn how to learn and develop skills mandatory for one to attain Information Literacy competency and be able to adjust to the rigours of information explosion. The ACRL standards which evolved from the ISP model were used as the assessment benchmarks to evaluate the effectiveness of the Information Literacy interventions administered to the Faculty of Business incoming students at Rosebank College Cape Town.

3.3.1 Research Questions

The following research questions arose from the research problem:

- Were the Information Literacy interventions that were administered to the first year Business Faculty students effective and did they meet the proposed outcomes?
- What are the existing Information Literacy competencies of the incoming students in the Faculty of Business?
- How should Information Literacy programmes be delivered?
- Are the ACRL standards a reliable tool to assess Information Literacy skills and the effectiveness of the interventions administered?

3.3.2 More specific questions were identified as follows

- How did the Information Literacy interventions impact towards the improvement of students information needs analysis?
- Does the course assist in reducing plagiarism cases amongst students?
- Does it improve the quality of referencing and citing?

- Is there correlation between Information Literacy competency and computer literacy?

3.4 Research design and methodology

Welman, Kruger and Mitchell (2005:52) define a research design as a plan according to which researchers obtain participants and collect information from them. The research design describes the research structure and stipulates everything that needs to be done to complete the research.

The study investigated the effectiveness of an Information Literacy intervention that was undertaken at Rosebank College Cape Town. The investigation consisted of a control and experimental group. A control group is a group of subjects closely resembling the treatment group, but not receiving the active factor under study and serving as a comparison group during the comparison of the results (Dictionary.com 2012). It further defines an experimental group as subjects who are exposed to the variable under study.

The project is split into the following phases

- Phase 1: The first phase of the project involved the design of a research instrument based on the ACRL standards.

- Phase 2: To determine the reliability and validity of the research instrument, a pilot study was conducted. The questionnaire was distributed to lecturers at Rosebank College Cape Town as well as information literate librarians.

- Phase 3: A follow up pilot study was carried out with 2nd and 3rd year students who were required to complete the questionnaire and provide feedback on whether the questions were easy to understand or not.

- Phase 4: Incoming Faculty of Business students completed the pre-intervention test questionnaire.

- Phase 5: This phase involved the facilitation of two intervention workshops on the experimental group by the researcher. The two workshops were facilitated for the Higher Certificate in Business Principles and Practice (HCBPP) and the Diploma in Accounting and Financial Computing (DAFC) first year students.

- Phase 6: Respondents completed the post intervention test questionnaire. At this stage the DAFC and HCBPP students together with the experimental group which was made up of the Diploma in Commerce and Business Management (DCBM) and the Higher Certificate in Office Administration (HCOA) completed the post-test questionnaire.

- Phase 7: The final phase involved the process of comparing the pre-and post-test intervention test scores.

The design of this research incorporated a control group whose results were used to compare with results from respondents that participated in the interventions. The comparison of the results provided an indication that the respondents from the experimental group improved their scores far much ahead of the respondents from the control group.

3.4.1 Pilot studies

As previously highlighted two pilot studies were conducted. The first pilot study was conducted with lecturers at Rosebank College Cape Town and Information literate Librarians within the Information Science field. The second pilot study was done with a random group of 2nd and 3rd year students. The main purpose of these two pilot studies was to establish the validity, reliability and dependability of the research instrument. This was done in order to identify any weaknesses and rectify them and make the tool an effective data gathering instrument for the purpose of the research.

The questionnaire was presented to 8 lecturers at Rosebank College Cape Town and the response rate was 100%. Positive feedback was received from the lecturers as majority of them indicated the suitability of the tool as a data gathering instrument

for the research. Suggestions with regards to the re-phrasing of some questions were incorporated. The questionnaires were emailed to 12 Librarians. They all shared more or less the same sentiments as put across by the academic staff. One lecturer identified the vagueness of Question 17 and suggested that some clues be added to assist students to be able to complete the other parts.

The second pilot study involved the distribution of the questionnaire to a random sample of 2nd and 3rd year students. The students were expected to complete the questionnaire in the library. The two pilot studies facilitated the re-phrasing of some of the questionnaire questions that were deemed to be unclear and vague.

3.4.2 Research instrument design

The research instrument design achieved an evaluative questionnaire capable of gauging existing Information Literacy competencies of business faculty students at Rosebank College Cape Town. Standards 1, 2 and 5 were used as guidelines to come up with the questionnaire questions. The first section of the questionnaire was aimed at collecting biographical information, whilst the second section focused on establishing the existing level of Information Literacy skills of students. The research instrument was made up of 23 questions. Respondents were required to provide their student numbers. This was necessary in order to compare the pre- and post-test scores. Suggestions for the rephrasing of some of the questions collected during the pilot studies were incorporated in the design of the final research instrument.

Questions 1-7 were aimed at providing the researcher with each respondent's biographical information. Respondents were required to provide information such as: name, student number, age and home language. Previous research alluded to the fact that there is a correlation between proficiency in English language and the possession of information research skills (King 2007 and Davids 2009).

Questions 12 and 14 were aimed at revealing computer literacy skills of the respondents. The questions were included in order to find out if there is a relationship between being computer literate and the possession of Information Literacy skills. In her study Davids (2009:64) reports that students who indicated computer literacy training at school did not perform any better than those that

indicated the lack of exposure to computers. These findings reinforced the notion that being computer literate does not guarantee one to be in possession of Information Literacy skills.

Questions 9, 10, 11 and 13 reveal students reading habits.

Questions 15 – 23 are based on the ACRL standards. The table provided below lists the questions, provides details on their purpose and indicates the relevant ACRL standard.

Question 15 – 23: Information Literacy skills and ACRL standards

Question 15: Of the items listed below which one would you consult to find the most current information on a subject? **Purpose of the question** The question was aimed at finding out from the students if they are aware of which source to consult when they need to find out the most current information on a specific subject or discipline.	**ACRL Standard** Standard 1 Standard 2
Question 16: What is the best place to find a scholarly article? **Purpose of the question** The purpose of question number 16 was to determine if the respondents were aware of where they can find scholarly information. Most students prefer to look for information on the free web as compared to online databases.	**ACRL Standard** Standard 1 Standard 2

Question 17: The screen shot below shows the fields on an electronic catalogue. Please identify the various fields by filling in the spaces provided. **Purpose of the question** The purpose of the question was to identify whether the respondents were familiar with the various fields on an OPAC record.	**ACRL Standard** Standard 2
Question 18: You have to write an essay on "Economic recession in South Africa". Which search strategy would yield more results? **Purpose of the question** Question number 18 was aimed at establishing if the respondents are aware of the concept of Boolean operators when carrying out a search.	**ACRL Standard** Standard 2
Question 19: A keyword search will? **Purpose of the question** The purpose of the question was to establish whether students were aware of how a key word search works.	**ACRL Standard** Standard 2
Question 20: You need a brief introductory article to familiarise yourself on human resources management. Where would you look?	**ACRL Standard** Standard 2

Purpose of the question The purpose of the question was to establish if the respondents were aware that they can make use of an encyclopaedia to familiarise themselves with a topic.	
Question 21: Is it ok to use someone else's ideas or thoughts without acknowledging them? **Purpose of the question** This question focussed on establishing respondent's knowledge of the concept of referencing and plagiarism.	**ACRL Standards** Standard 5
Question 22: You have cited the following article in your assignment. Using the Harvard style of referencing, write a bibliography for the article in the spaces provided below. **Purpose of the question** The question sought to establish whether the respondents were capable of constructing the full bibliographic citation of a journal article.	**ACRL Standards** Standard 5
Question 23: Which of the following references refers to a website?	**ACRL Standards**

Purpose of the question	
The aim of question 23 was to establish whether students are able to distinguish between a website citation and a book or journal citation.	Standard 5

3.4.3 Research site and sampling

The research was conducted at Rosebank College Cape Town with Faculty of Business first year students as the sample. Permission to conduct the research was granted by the Principal of the college. The research site was selected because at the time of the study, the researcher was employed by the institution under study. Respondents were pre-tested during the orientation week. All first year students had a two hour session with the librarian and it is during that time that the respondents were pre-tested. To complete the pre- and post-test questionnaire requires approximately 15-20 minutes. For the post-test, the researcher liaised with the respective lecturers to utilise 15-20 minutes of their sessions to conduct the post-test.

To undertake the Information Literacy intervention with the experimental group, the researcher arranged with two academic staff members to utilise their sessions. Explanation on the purpose and objectives of the interventions were highlighted to the lecturers and the participants. The experimental group consisted of two groups namely the HCBPP class which had 27 students and the DAFC group with 23 students. One inherent weakness of the study is that of the 27 HCBPP students that undertook the pre-test only 16 managed to complete the interventions and participate in the post-test. The same applies to the DAFC students with 15 students completing the three stages in full. Thus the sample size for the experimental group dropped slightly to 31 respondents. The same scenario also affected the control group which saw a drop in the number of respondents. Twenty five students from the

DCBM class undertook the pre-test with 16 completing the 3 phases. The same scenario also affected the HCOA group which had 23 students completing the pre-test with 17 completing the required 3 phases. The questionnaires from the respondents who completed the first phase only, were not considered for the data analysis to be presented in chapter 4. The sample size for the study was 64 students out of 98 students currently enrolled as first year students. The drop in the sample size can be attributed to the respondents that participated in the pre-testing but did not complete the full phase of the study and this can be credited to absenteeism and drop outs. Questionnaires from those respondents were not included as a comparative analysis was required after the post intervention test.

3.4.4 Information Literacy interventions

The two experimental groups were exposed to two workshops conducted by the researcher and assistance was sought from the lecturers involved with the two groups. The workshops were aimed at achieving the following outcomes:

- To equip students with knowledge and the ability to make use of information retrieval tools such as library catalogues.
- Ethical use of information through sound knowledge of referencing and plagiarism.
- Effective retrieval and access to information.
- Ability to identify different types of information sources and their uses.

3.5 Conclusion

This chapter discussed the research design and outlined the steps undertaken in implementing this study. King's (2007:1) and Sayeed's (1999:6) studies concluded that the majority of South African students enrolling into tertiary institutions lack Information Literacy skills required at tertiary institutions. This study investigated the baseline skills of incoming business faculty students Information Literacy competency. It went further to assess the effectiveness of an Information Literacy intervention administered to the experimental group as outlined in the research

design. Two 60 minutes workshops were conducted for the experimental group. However it must be noted that the full set of Information Literacy skills cannot be taught in two sessions. The researcher is well aware that Information Literacy training cannot be seen as an event, but rather an on-going process. The next chapter will present the analysis of the evidence and presentation of the data gathered.

CHAPTER 4

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

The previous chapter outlined the research methodology and data collection methods used for the study. Chapter 4 presents the data collected through the methods described in chapter 3. The structure of the ACRL instrument applied for data collection will scaffold the data presentation in this chapter.

The chapter will present an evaluative feedback from the experimental group that participated in the intervention workshops. To compile the profile of incoming students in the Faculty of Business at Rosebank College responses from the pre-test were used. The second section was used to elicit the baseline information skills for the pre- and post-test based on the ACRL standards used as assessment benchmarks for the study. Control group results were compared with experimental group results. The results of the control group were used to ascertain whether the group mastered Information Literacy from other sources as they were not part of the intervention workshop accorded to the experimental group. The experimental group results were analysed and compared to ascertain whether their post-test scores improved or not after the facilitation of the intervention workshop.

4.2 Biographical Information

The first section of the research instrument required the respondents to provide personal information. Both the control and the experimental group were required to provide information about their age, gender and home language. Students were also requested to provide their names and student numbers. This was necessary to allow the researcher to match the pre- and post- test intervention results. However, the responses from the students were kept anonymous. The demographic information was carefully analysed enabling the researcher to examine Information Literacy from different dimensions. The researcher was able to ascertain any correlation between

Information Literacy and other factors such as home language, prior ICT knowledge and access to libraries.

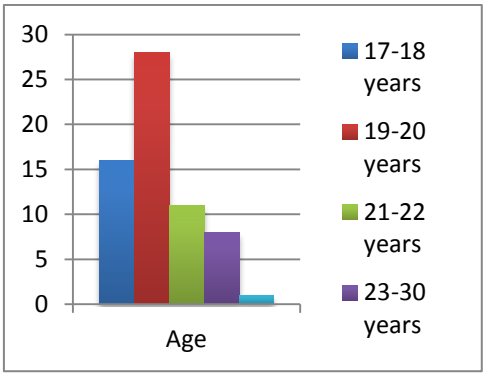
4.2.1 Age

Both the experimental and control groups were required to provide their age. Table 1 shows the distribution of the respondents by age. Students in the Faculty of Business represented a diverse age group ranging from 17 to 34 years. Respondents between the ages of 19-20 constituted the larger population of the participants with 43.75% belonging to this group.

Table 1 Age

Experimental group			**Control group**			**Total**	
Years	**No.**	**%**	**Years**	**No.**	**%**	**No.**	**%**
17-18	8	25.80	17-18	8	24.24	16	25
19-20	15	48.38	19-20	13	39.39	28	43.75
21-22	5	16.12	21-22	6	18.18	11	17.18
23-30	3	9.67	23-30	5	15.15	8	12.5
34	0	0.0	34	1	3.0	1	1.56
TOTAL	31	100		33	100	64	100

Figure 3 Sample age distribution



4.2.2 Gender

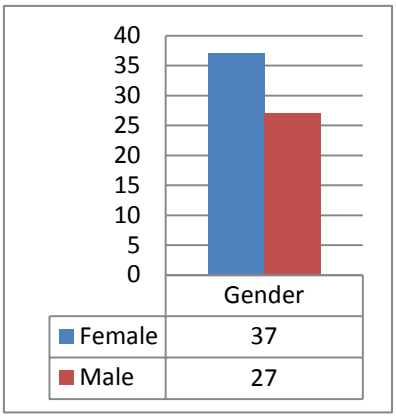
The distribution of the respondents by gender is shown in table 2 and figure 4. Out of a total of 64 respondents 37 (57.81%) were females and 27 (42.18%) were males.

Table 2 Gender

	Experimental group		**Control group**		**Total**	
Females	18	48.64%	19	51.35%	37	57.81%
Males	12	44.44%	15	55.55%	27	42.18%

To provide a clear profile, figure 4 combines the responses from the two groups. The results show that 57.18% of the respondents were females and 42.18% were males.

Figure 4 Gender



4.2.3 Home language

Responses for the students' home language are recorded and presented in table 3. Students were required to select their home language from the options English, Afrikaans, Xhosa, Zulu, Sotho or Other. The language of instruction at Rosebank College is English. An analysis of the data indicated that English and Xhosa were selected by the majority of the respondents as their home language. English had the highest with 30 (46.87%) and Xhosa 27 (42.18%). The other languages combined constituted less than 7 (10.93%) of the respondents who indicated them as their

home language. The 4 students who selected other language as their option are from the Democratic Republic of Congo with French as their home language.

Table 3 Home language

Experimental group			Control group			Total	
Language	**No.**	**%**	**Language**	**No.**	**%**	**No.**	**%**
English	15	48.38	English	15	45.45	30	46.87
Afrikaans	0	0	Afrikaans	2	6.0	2	3.12
Xhosa	13	41.93	Xhosa	14	42.42	27	42.18
Zulu	0	0	Zulu	1	3.0	1	1.56
Sotho	0	0	Sotho	0	0	0	0
Other	3	9.67	Other	1	3.0	4	6.25
TOTAL	31	100		33	100	64	

Figure 5 and 6 provides a comparative analysis of scores attained before and after the intervention for both the control and experimental group by home language. The objective of the comparative analysis was to ascertain the existence of any correlation between competency in a specific language and Information Literacy pre- and post-test scores attained.

Figure 5: Average performance by home language: Control Group

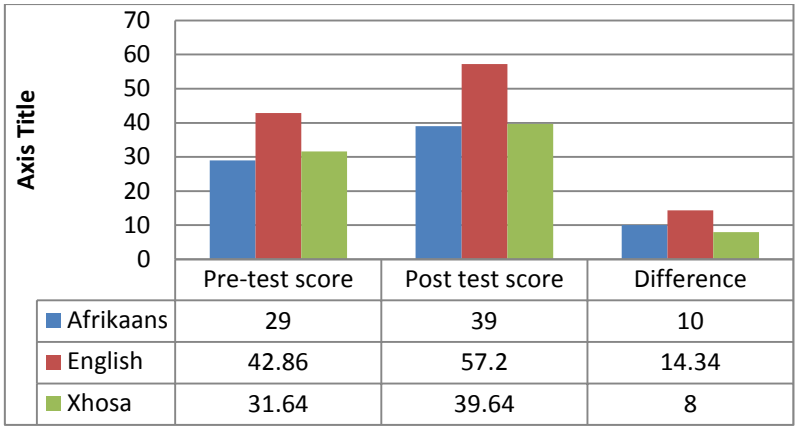
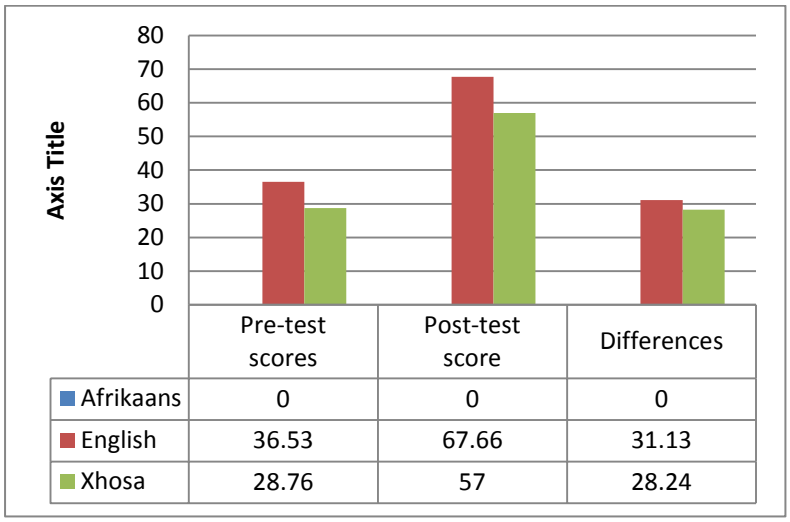


Figure 5 presents a comparative analysis of pre- and post-test scores by language for the control group. The diagram shows that students who listed English as their home language attained higher marks in comparison to the other languages, with an average score of 42.86% and 57.2% for the pre- and post-test scores respectively. Xhosa as home language achieved an average score of 31.64% and 39.64% for the pre- and post-test scores respectively. An analysis of the results shows that all the languages experienced an increase between the pre-test and post-test results. The improvements of scores for all groups suggest that the use of English is not a barrier to student's learning of Information Literacy. This correlates to findings of Davids (2009:41) and Conteh-Morgan (2002: 191-196).

Figure 6: Average performance by home language: Experimental group



	Pre-test scores	Post-test score	Differences
Afrikaans	0	0	0
English	36.53	67.66	31.13
Xhosa	28.76	57	28.24

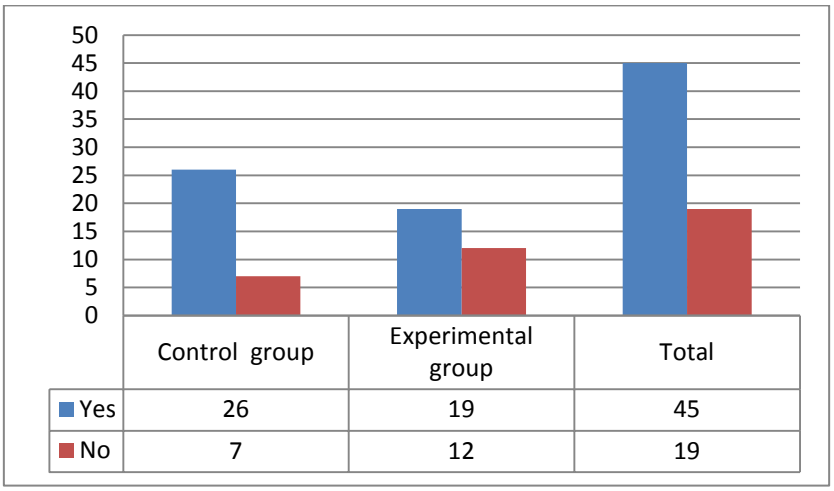
Figure 6 presents an analysis of the student's Information Literacy scores for the pre- and post-test intervention by home language for the experimental group. The data shows that students who listed English language as their home language attained higher scores, with an average score of 36.53% and 67.66% for the pre- and post-intervention results respectively. However English and Xhosa also attained the same difference when comparing the pre- and post-test scores for the two languages. English attained 31.13% increase with Xhosa achieving an increase of 28.24%. The small gap supports Davids (2009:41) findings that suggested that, the use of English

language in imparting Information Literacy skills might not be a barrier towards the attainment of these skills by students.

For the control group 0% students selected Afrikaans as home language. This can be attributed to the fact that, the student population at Rosebank College is mainly constituted by Xhosa and Coloureds. Coloureds in the Western Cape have adopted English language as their home language (Mitchell-Kamalie 2011:130).

4.2.4 ICT access and Information Literacy

Figure 7 Computer literacy education

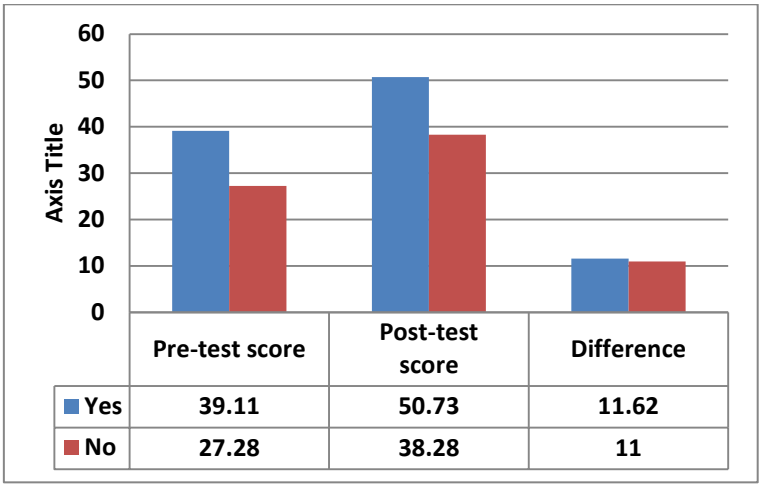


	Control group	Experimental group	Total
Yes	26	19	45
No	7	12	19

Computer literacy plays an important role in accessing information. However being computer literate does not make one information literate because the latter require cognitive and problem solving skills (Behrens 1990:355; Johnson & Eisenberg 1996:13 and Davids 2009:44). Question number 10 sought to exam how many students had received computer literacy training from their schools or from any other source. The objective of the question was to assist the researcher to plan carefully and cater for those students that lacked computer literacy skills. The information is also helpful as it will assist the researcher in understanding how computer literate students perform in comparison to computer illiterate students. The results showed that 45 (70.31%) of the total sample had received prior computer education.

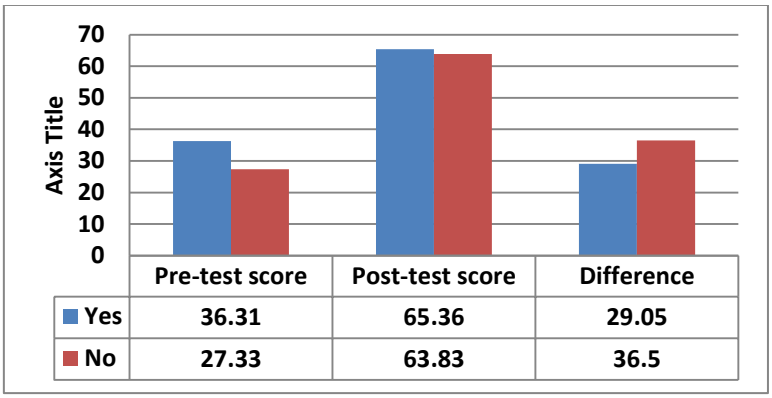
To check for any correlation between computer literacy and Information Literacy, test scores were analysed using that factor for both the control and experimental group. Figure 8 and 9 presents the results by prior computer education access.

Figure 8: Computer literacy education and test scores (Control group)



For the pre-test, students who indicated prior computer literacy knowledge achieved an average test score of 39.11% and those that did not have scored an average of 27.28%. All the students realised an increase in the post-test scores with those that indicated 'Yes' achieving an average of 50.73% and 38.28% for those that had not had any computer education before. The increase in the test scores for the two groups was almost similar with students that said 'Yes' achieving 11.62% and those that said 'No' attaining 11%. For the aspect under study, results matched Davids (2009:44) findings. The results showed that prior computer education is not essential as analysis showed little difference between pre-and post-test scores for the two groups. Furthermore, similar studies by Horton, (1983:95) and King (2007:100) arrived at the same findings and conclusion.

Figure 9: Computer literacy education and test scores (Experimental group)



In the experimental group for pre-test, participants that had prior computer training obtained an average score of 36.31% and 65.36% for the post-test. Participants that had no prior computer knowledge attained an average score of 27.33% and 63.83% for the pre- and post-test scores respectively.

Own computer

Question 12 required students to indicate by marking either yes or no on the questionnaire to indicate whether they had access to their own computers. Results from the questionnaire are presented in figure 10. Figure 10 shows that 18 (54.44%) of respondents in the control group and 20 (64.51%) in the experimental group possessed their own computers. In total, they were 38 (59.37%) students out of a total of 64 students who owned computers. The percentage is quite high in comparison to findings from other studies like King (2007:100) who concluded that an average of 20% of students from the UWC faculty of Arts owned computers.

Figure 10 Own computer

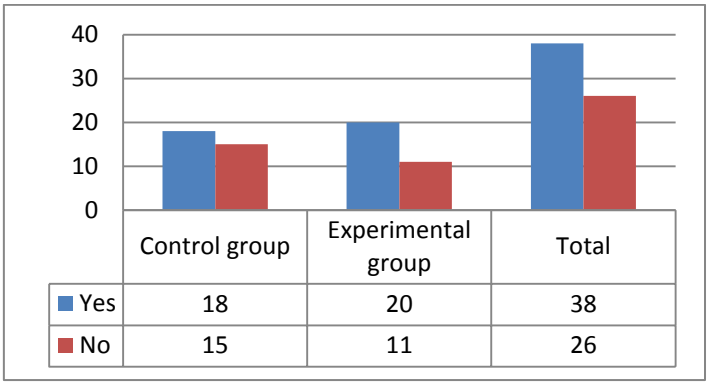
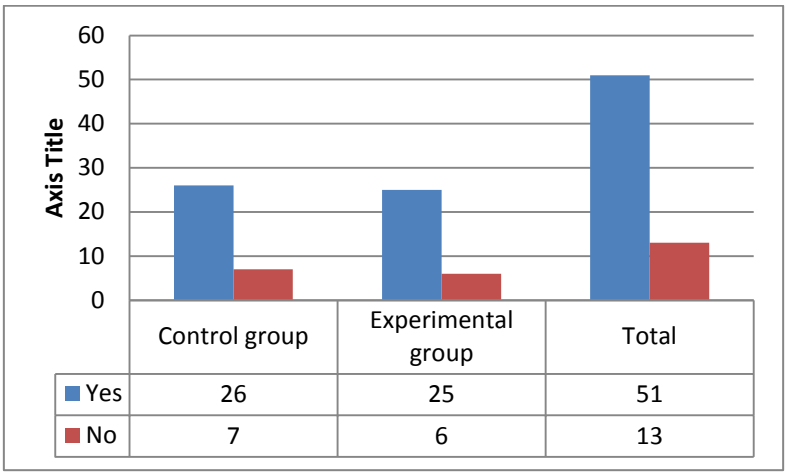


Figure 11 Email usage

Students were asked in question number 14 to indicate whether they had an email address. Figure 11 indicates that 26 (78.78%) students in the control group and 25 (80.64%) students in the experimental group used email or had an email address. A combined 13 (20.31%) indicated that they had not used email before. From the findings, inferences cannot be drawn that South African students are not exposed to ICT applications prior to tertiary education.

Figure 11: Email usage



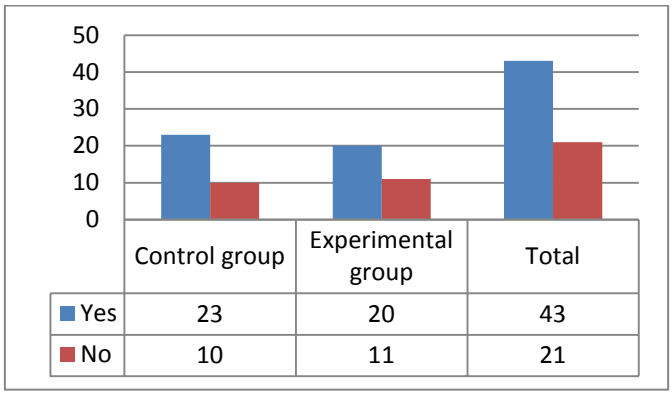
4.3 Reading habits

4.3.1 Access to school libraries

Questions 9 and 10 sought to find out from the students whether they had access to libraries from the communities they reside in as well as from schools they attended. The two questions were aimed at investigating relationships between access to libraries and Information Literacy test scores. Figure 12 shows 23 (69.69%) students in the control group and 20 (64.51%) students in the experimental attended secondary schools were they had access to libraries. This is quite surprising and in contrast with a survey by the NEIMS conducted in 2009. NEIMS (2009) report indicated that, only 8% of public schools have stocked and functional libraries. The high percentage of respondents that had access to libraries from schools they

attended is also in sharp contrast with findings from De Jager and Nassimbeni (2002:183), Hart (1999:78) and Maughan (2001:85) who acknowledged that, the lack of libraries and teacher librarians in South African schools is a major contributor to library illiterate students.

Figure 12: Access to libraries from school



Access to libraries and test scores: control group

Information Literacy skills need to be developed and nurtured from primary to secondary school. The availability of functional school libraries will have a positive impact towards the transformation of student reading habits. Figure 12 represented the combined statistics of students that had access and those that did not have. Figure 13 analyses the pre- and post-test scores for the students that had a library at school and those that that did not have. It gives the average scores attained for the pre- and post-test. The results shows that, for the pre-test the students that answered yes to the question achieved an average of 40.82% for the pre-test and 51% for the post-test. On the other hand, those that had no access to libraries achieved an average of 26.9% and 39.8 for the pre- and post-test respectively.

Figure 13: Access to libraries and test scores: control group

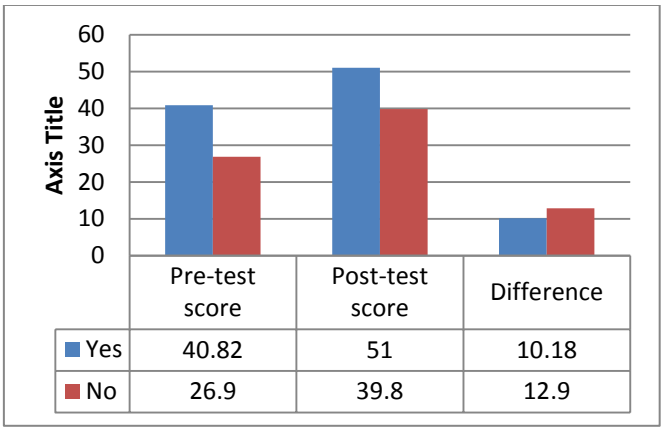


Figure 14 shows an analysis of results of Information Literacy pre-and post-test scores for the experimental group by student access to libraries from the schools they attended. The study sought to find out if there will be differences between the scores of students that indicated they had library access from schools and those that did not have. An analysis of the results showed that respondents who had access to school libraries achieved an average pre-test score of 33.7% and 62.5% for the post-test. Those that answered negatively achieved an average score of 31.27% for the pre-test and 68.90% for the post test.

Figure 14: Access to libraries and test scores: experimental group

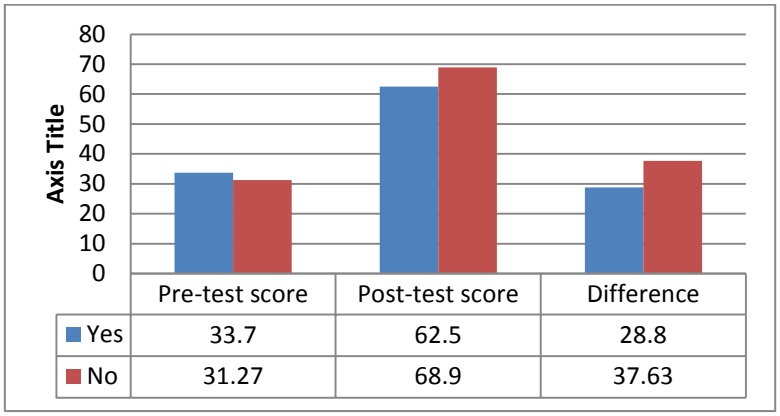


Figure 15: Respondents reading habits

Question 12 sought to find out the reading habits of the respondents and ascertain the existence of any correlation between scores of participants who read and those

that do not read. The reading habits will be compared against scores attained by the respondents in their pre- and post-test average scores. Table 4 summarises responses for question 11 which asked what the participants had read in the past month.

Table 4: Reading habits (control and experimental group)

Question 11 : Of the items listed below which one have you read in the past month?

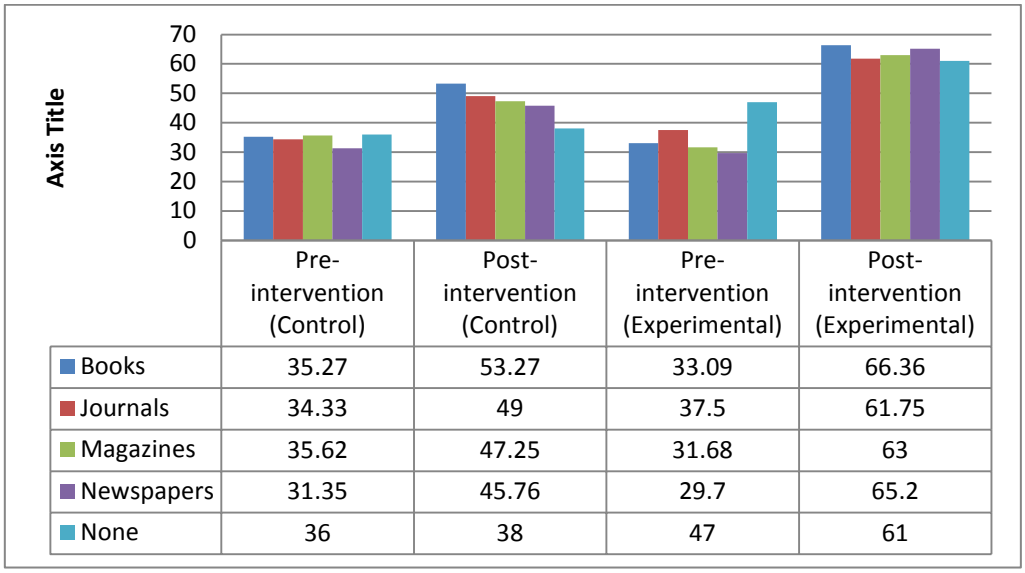
	Count	**Percentage**
Book	28	43.75%
Journal	8	12.5%
Magazine	48	75%
Newspapers	36	56.25%
None of the above	2	3.12%
Total	122	

An analysis of the responses showed that most students preferred reading magazines and newspapers. Magazines were selected by 48 (75%) of the participants and newspapers by 36 (56.25%). The results match the discovery by Davids (2009:46) and King (2007:108) that students preferred quick reading materials such as magazines, newspapers and websites. The study sought to see if there is any difference in the scores between participants that read and those that do not for both the experimental and control groups. The study discovered that students, who possessed a reading culture, achieved a higher percentage score for the pre- and post-intervention test. The detailed analysis of the results is represented in table 5 and figure 15.

Table 5: Reading habits and information scores

	Control group		Difference	Experimental group		Differences
	Pre-test	**Post-test**		**Pre-test**	**Post-test**	
Books	35.27%	53.27%	18%	33.09%	66.36%	33.27%
Journal	34.33%	49%	14.67%	37.5%	61.75%	24.25%
Magazine	35.62%	47.25%	11.63%	31.68%	63%	31.32%
Newspapers	31.53%	45.76%	14.23%	29.7%	65.2%	35.5%
None of the above	36%	38%	2%	47%	61%	14%

Figure 15: Participants reading habits and information skills scores



4.4 Information skills assessment

Section B of the questionnaire provided in appendix 2, sought to assess the baseline Information Literacy skills of participants before and after the intervention workshops that were administered to the experimental group. The questions were based on ACRL standards. The results are presented in the form of tables and graphs. Correct answers are indicated in a bold type face.

4.4.1 Formulating search strategy (ACRL standard 1)

The ability to determine which source of information to consult for a specific information need is of paramount importance for research purposes. King (2007:126) argues that the nature of information required influences the type or source of information to be consulted. Question number 15 was aimed at ascertaining whether participants possess knowledge and skills needed for information retrieval and are able to identify which source contains the most up to date information on a subject. Table 6 presents the pre- and post-test scores for the experimental and control group. Respondents demonstrated lack of knowledge with regards to identifying the correct answer.

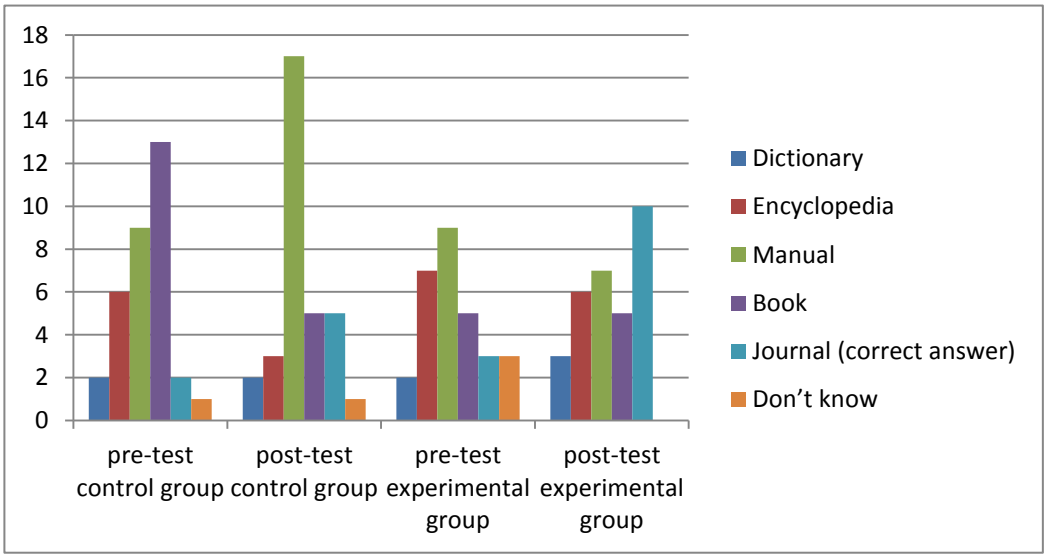
Six percent of participants in the control managed to select the correct answer for the pre-test and after the post-test only 15.1% selected “journal” which was the correct answer. On the other hand, for the experimental group 9.6% of the respondents selected journal in their pre-test. The number rose slightly which was rather disappointing after the intervention to a meagre 32.2%. One observation that was noted is that students in the control group rated highly their manuals as 51.5% selected them as a good source for current information. A lot needs to be done to encourage students to explore other sources of information as reliance on the manual alone is highly evident amongst learners at Rosebank College Cape Town. A total 16.1% of the respondents in the experimental group selected books as a good source of current information for the post-test. King (2007:126) alluded to the fact that the majority of incoming students assume books are a good source of update information as evidenced by her findings.

Table 6: Formulating search strategies

	Question 15: Of the items listed below, which one would you consult to find the most current information on a subject?									
	Pre-test control group		**Post- test control group**		**Difference**	**Pre-test experimental group**		**Post- test experimental group**		**Difference**
	Score	***%***	***Score***	***%***		***Score***	***%***	***Score***	***%***	
DICTIONARY	2	6.0	2	6.0	0	2	6.4	3	9.6	3.2

ENCYCLOPEDIA	6	18.1	3	9.0	-9.1	7	22.5	6	19.3	-3.2
MANUAL	9	27.2	17	51.5	24.3	9	29	7	22.5	-6.5
BOOK	13	39.3	5	15.1	-24.2	5	16.1	5	16.1	0
JOURNAL	**2**	**6.0**	**5**	**15.1**	**9.1**	**3**	**9.6**	**10**	**32.2**	**22.6**
DON'T KNOW	1	3.0	1	3.0	0	3	9.6	0	0	0
TOTAL SCORE	33	100	33	100	100	31	100	31	100	100

Figure 16 Best resource for finding a scholarly article



4.4.2 Document types and information retrieval

As mentioned earlier, the ability to know which sources of information to consult for a specific information need is invaluable when faced with information abundance. Information explosion has led to information proliferation and the issue of quality is of paramount importance. Question 16 sought to establish if respondents are aware of the best place to find scholarly information. A total 54.4% and 63.6% of participants in the control group selected the internet for the pre- and post- test respectively. This was expected as a lot of students prefer to use the free web when searching for information to apply in their research assignments. Most students are not aware of issues to do with information quality that affects information they retrieve on the free

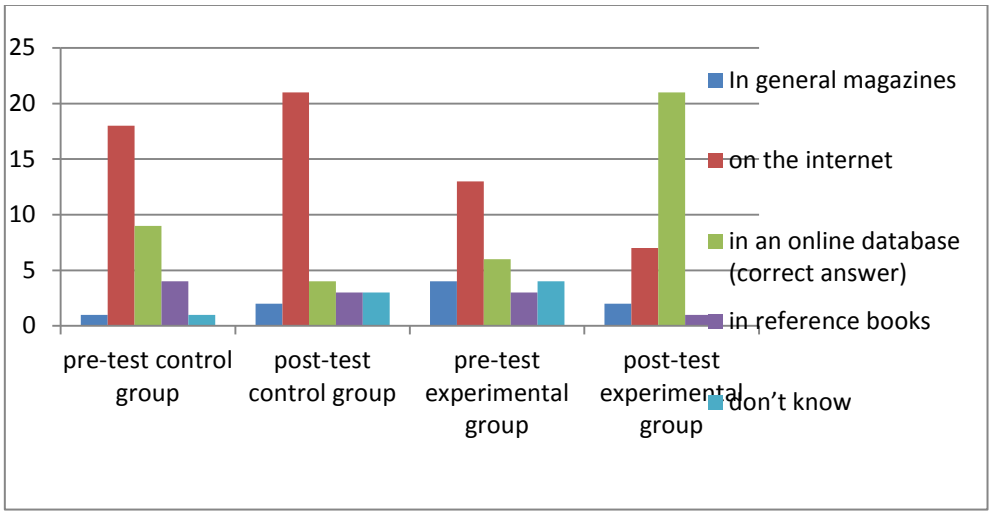
web. Results correlated with Somi and De Jager (2005:262) and Karas and Green (2007:107) who found that student's usage of academic resources is very low as they prefer to search for information on the internet. They noted that students seem to believe that the easiest way to retrieve specific information is by looking for it via search engines. Hence, there is great need to conduct detailed workshops with students to encourage them to rely on using online databases for scholarly information as compared to the free web.

In the experimental group 19.3% selected online databases during the pre-test which was the correct answer. For the post-intervention test, the score steadily rose to 67.7%. A total 22.5% selected the internet as their option for scholarly information. The findings of the study correlated with findings of Caravello, Herschman and Mitchell (2001:198) and Coupe (1993:192) who asserted that students are not aware that journals are the best academic source for up to date information on a subject.

Table 7: Documents types and information retrieval

TABLE 7	**Question 16: What is the best place to find a scholarly article?**									
	Pre-test control group		**Post- test control group**		**Difference**	**Pre-test experimental group**		**Post- test experimental group**		**Difference**
	Score	***%***	***Score***	***%***		***Score***	***%***	***Score***	***%***	
IN GENERAL MAGAZINES	1	3.0	2	6.0	3.0	4	6.4	2	12.9	6.5
ON THE INTERNET	18	54.4	21	63.6	9.2	13	41.9	7	22.5	19.4
IN AN ONLINE DATABASE	**9**	**27.2**	**4**	**12.1**	**-15.1**	**6**	**19.3**	**21**	**67.7**	**48.4**
IN REFERENCE BOOKS	4	12.1	3	9.0	-3.1	3	9.6	1	3.2	-6.4
DON'T KNOW	1	3.0	3	9.0	6.0	4	12.9	0	0	0
TOTAL SCORE	33		33			31		31		

Figure 17 Documents types and information retrieval



4.4.3 Information retrieval skills: library catalogue

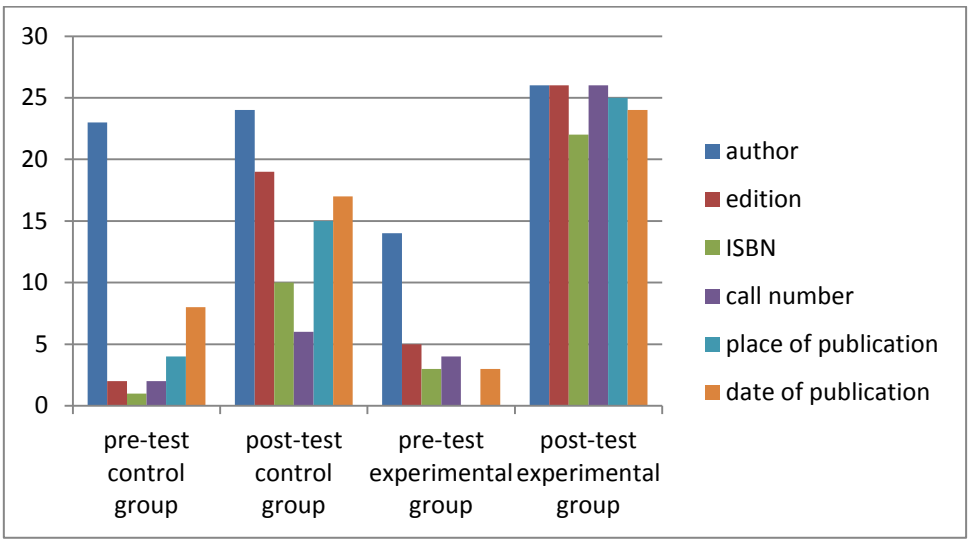
Without adequate training, most students tend to rely on serendipity when looking for information sources within a library setup. Possession of knowledge on how to use a library catalogue is invaluable in reducing information anxiety that characterise students when they fail to retrieve the exact pieces of information they are looking for in a library. The aim of question 17 was to establish if the participants were able to identify the various fields for an entry on the library's electronic catalogue. Analysis of the results shows that, both the control and experimental group achieved low scores during the pre-testing. This can be attributed to the fact that, at the time of the pre-testing, no training had been conducted. Table 8 shows that after the interventions offered to the experimental group, their scores improved in comparison with the control group.

Table 8 Library catalogue features

	Question 17: The screen shot below shows the fields on an electronic catalogue. Please identify the various fields by filling in the spaces provided.									
	Pre-test control group		**Post- test control group**		**Difference**	**Pre-test experimental group**		**Post- test experimental group**		**Difference**
	Score	***%***	***Score***	***%***		***Score***	***%***	***Score***	***%***	

AUTHOR	23	69.6	24	72.7	3.1	14	45.1	26	83.8	38.7
EDITION	2	6.0	19	57.5	51.5	5	16.1	26	83.8	67.7
ISBN NUMBER	1	3.0	10	30.3	27.3	3	9.6	22	70.9	48.9
CALL NUMBER	2	6.0	6	18.1	12.1	4	12.9	26	83.8	70.9
PLACE OF PUBLICATION	4	12.1	15	45.4	33.3	0	0	25	80.6	80.6
DATE OF PUBLICATION	8	24.2	17	51.5	27.3	3	9.6	24	77.4	67.8

Figure 18 Library catalogue features



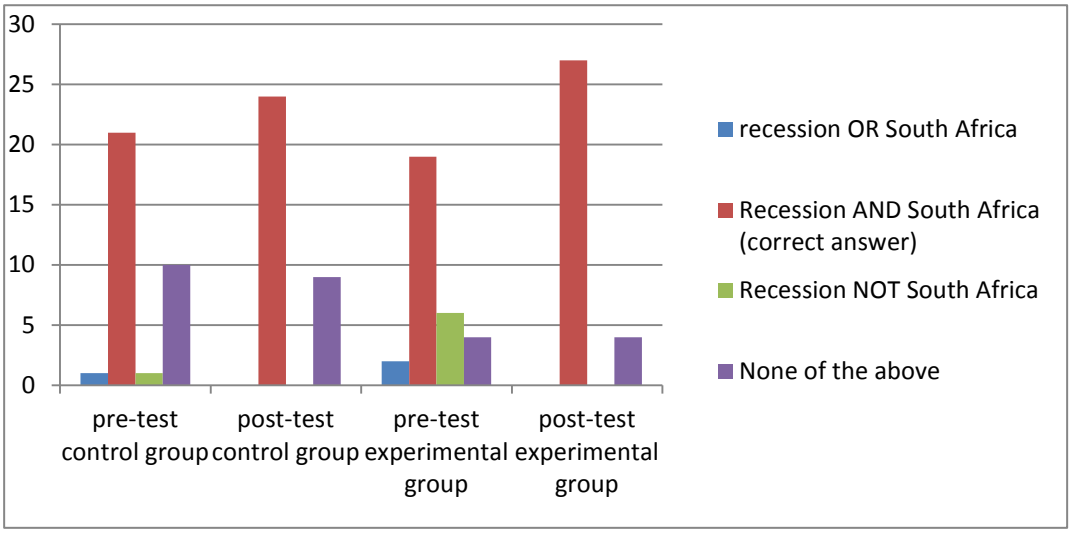
4.4.4 Boolean logic

The ability to make use of Boolean operators such as AND, NOT, OR is vital when performing searches in online library catalogues, databases or the internet. Question 18 aimed at assessing whether participants possessed knowledge of applying the Boolean logic concept when performing searches in an online database. Table 9 presents the results of the findings for the control and experimental group. Most of the respondents did well on this question for both the experimental and control cohort pre-and post-test results.

Table 9: Boolean logic

TABLE 9	Question 18: You have to write an essay on "Economic recession in South Africa" which search strategy would yield more relevant results?									
	Pre-test control group		Post- test control group		Difference	Pre-test experimental group		Post- test experimental group		Difference
	Score	*%*	*Score*	*%*		*Score*	*%*	*Score*	*%*	
RECESSION OR SOUTH AFRICA	1	3.0	0	0	-3.0	2	6.4	0	0	-6.4
RECESSION AND SOUTH AFRICA	**21**	**63.6**	**24**	**72.7**	**9.1**	**19**	**61.2**	**27**	**87.0**	**25.8**
RECESSION NOT SOUTH AFRICA	1	3.0	0	0	-3.0	6	19.3	0	0	-19.3
NONE OF THE ABOVE	10	30.3	9	27.2	-3.1	4	12.9	4	12.9	0
TOTAL	33	100	33	100			100			100

Figure 19 Boolean logic



4.4.5 Keyword searching

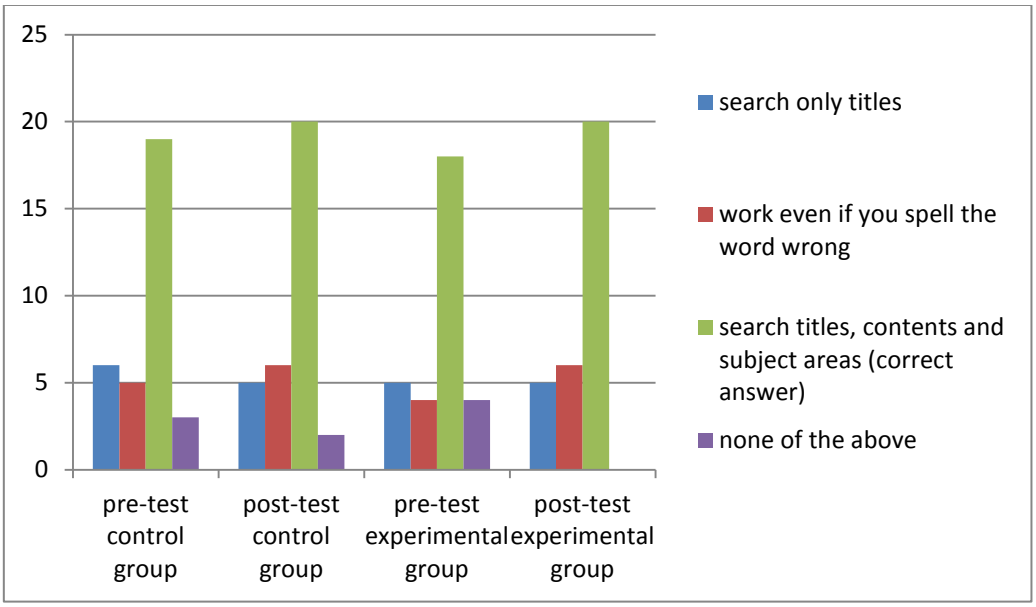
The purpose of question 19 was to gain an insight on whether participants understood the concept of keyword searching and how it operates. Table 10 presents the results of the analysis. In both the control and experimental group for the pre- and post-test, respondents did very well for this question. For the control group, 19 (57.5%) of the participants selected the correct answer during the pre-

testing phase. For the post-test, the number rose slightly to 20 (60.6%). Similar results were obtained for the experimental group, where 18 (58%) and 20 (64.5%) of the respondents selected the correct answer for the pre-and post-test phase.

Table 10 keyword searching

TABLE 10	**Question 19: A key word search will?**									
	Pre-test control group		**Post- test control group**		**Difference**	**Pre-test experimental group**		**Post- test experimental group**		**Difference**
	Score	***%***	***Score***	***%***		***Score***	***%***	***Score***	***%***	
SEARCH ONLY TITLES	6	18.1	5	15.1	-3	5	16.1	5	16.1	0
WORK EVEN IF YOU SPELL THE WORD WRONG	5	15.1	6	18.1	3	4	12.9	6	19.3	6.4
SEARCH TITLES, CONTENTS AND SUBJECT AREAS	**19**	**57.5**	**20**	**60.6**	**3.1**	**18**	**58.0**	**20**	**64.5**	**6.5**
NONE OF THE ABOVE	3	9.0	2	6.0	3	4	12.9	0	0	0
TOTAL	33		33	100		31		31	100	

Figure 20 Keyword searching



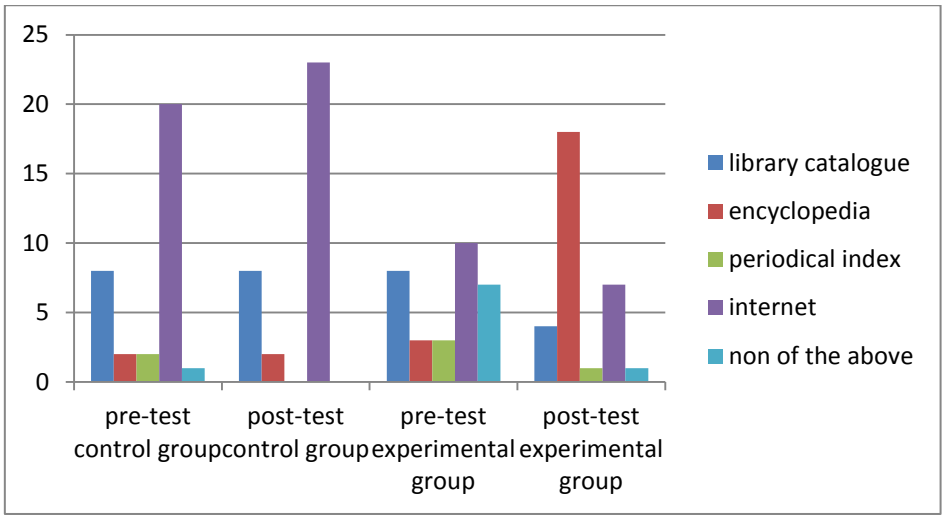
4.4.6 Access to resources

The ability to determine where to find specific pieces of information is of paramount importance in an information society that has been characterised by the proliferation of information. Question number 20 sought to engage students' ability of knowing exactly which source to consult when interested with a brief introduction on a subject. The results are presented in table 11. The analysis shows that participants scored poorly in the pre-test for both the control and experimental group. The scores were 2 (6%) and 3 (9.6%) for the control and experimental group respectively. To demonstrate the effectiveness of the Information Literacy intervention, post-test scores for the experimental group increased. A total 18 (58%) of the participants in the experimental group selected the correct option. On the other hand, scores for the control group remained unchanged.

Table 11 Access to resources

TABLE 11	Question 20: You need a brief introductory article to familiarise yourself on human resources management. Where would you look?									
	Pre-test control group		Post- test control group		Difference	Pre-test experimental group		Post- test experimental group		Difference
	Score	%	Score	%		Score	%	Score	%	
LIBRARY CATALOGUE	8	24.2	8	24.2	0	8	25.8	4	12.9	-12.9
ENCYCLOPEDIA	**2**	**6.0**	**2**	**6.0**	**0**	**3**	**9.6**	**18**	**58.0**	**48.4**
PERIODICAL INDEX	2	6.0	0	0	-6.0	3	9.6	1	3.2	-6.4
INTERNET	20	60.6	23	69.6	9.0	10	32.2	7	22.5	-9.7
NONE OF THE ABOVE	1	3.0	0	0	-3.0	7	22.5	1	3.2	-19.3
TOTAL	33	100	33	100		31	100	31	100	

Figure 21 Access to resources



4.4.7 Ethical use of information

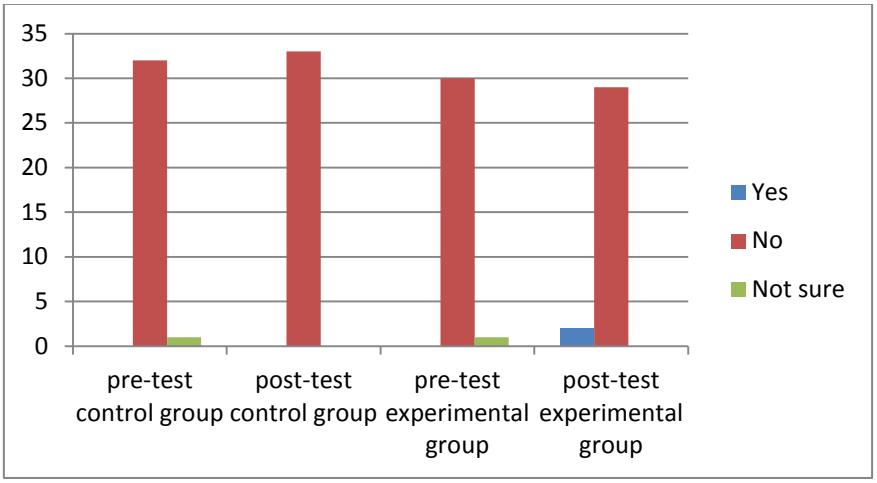
Plagiarism is a common problem amongst students in higher education institutions (Flint, Clegg and Macdonald, 2006:145 and Sentleng, 2010:10). Information literate students possess the ability to acknowledge authorship through the use of sound

referencing techniques. The purpose of the question was aimed at ascertaining respondents' knowledge with regards to the concept of referencing and plagiarism. Detailed results are presented in table 12 and figure 22.

Table 12 Ethical use of information

TABLE 12	**Question 20: Is it okay to use someone else's ideas or thoughts without acknowledging them?**									
	Pre-test control group		**Post- test control group**		**Difference**	**Pre-test experimental group**		**Post- test experimental group**		**Difference**
	Score	**%**	***Score***	***%***		***Score***	***%***	***Score***	***%***	
YES	0	0	0	0	0	0	0	2	6.4	6.4
NO	**32**	**96.6**	**33**	**100**	**3.4**	**30**	**96.7**	**29**	**93.5**	**-3.2**
NOT SURE	1	3.0	0	0	-3.0	1	3.2	0	0	-3.2
TOTAL	33	100	33	100		31	100	31	100	

Figure 22 Ethical use of information



Analysis of the data showed that in both the experimental and control group, students possessed sound knowledge on the whole concept behind referencing and plagiarism. The findings correlated with Davids (2009: 56) and Sentleng (2010:45),

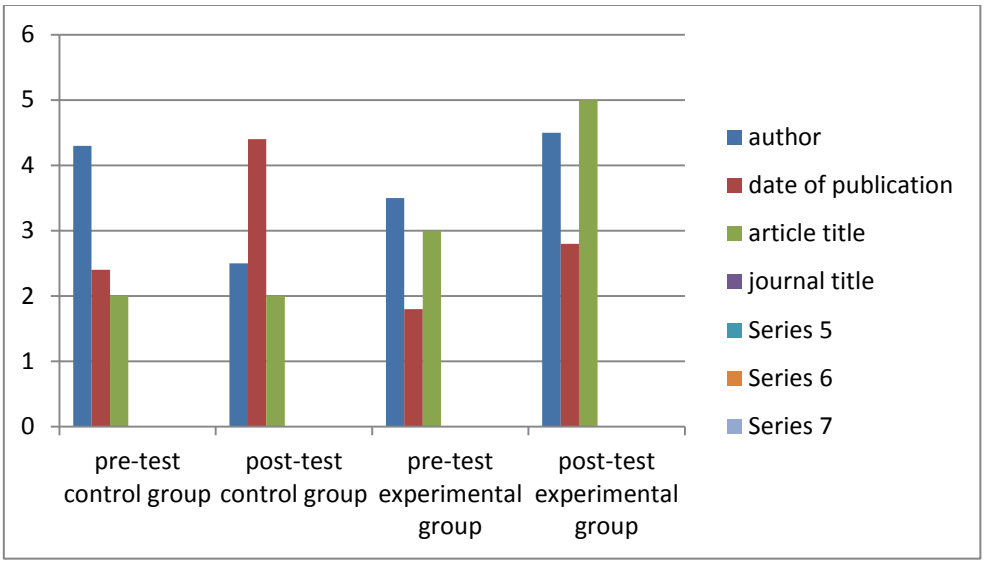
where results showed that the majority of the students understood the importance of referencing and the seriousness of plagiarism.

Question 22 required students to compile a full bibliographic citation for a journal article. Analyses of the findings are presented in table 13. The table presents the various fields for a journal citation. A mark was allocated for the provision of the correct field. The pre-test scores for the control and experimental group were very low. This can be attributed to the fact that, pre-testing was conducted during the first week of the semester and most of the students were not exposed to the concept. At Rosebank College, referencing and plagiarism issues are not the preserve of librarians alone, but lecturers are also expected to impart these skills within their classroom settings. An analysis of question 22 indicated that the scores of students within the control group improved slightly as compared to the respondents that participated in the intervention workshops. Table 13 presents results for each aspect of a journal citation and the scores attained accompanied by the difference or increase in scores.

Table 13: Journal article citation

TABLE 13	**Question 22: You have cited the following article in your assignment. Using the Harvard style of referencing, write the full bibliography for the article in the spaces provided below.**									
	Pre-test control group		**Post- test control group**		**Difference**	**Pre-test experimental group**		**Post- test experimental group**		**Difference**
	Score	***%***	***Score***	***%***		***Score***	***%***	***Score***	***%***	
AUTHOR	12	36.6	27	81.8	45.2	11	35.4	26	83.8	48.4
DATE OF PUBLICATION	11	33.3	28	84.8	51.5	10	32.2	27	87.0	54.8
ARTICLE TITLE	10	30.3	25	75.7	45.4	12	38.7	26	83.8	45.1
JOURNAL TITLE	7	21.2	14	42.4	21.2	6	19.3	28	90.3	71.0
JOURNAL TITLE UNDERLINED	1	3.0	5	15.1	12.1	1	3.2	18	58.0	54.8
VOLUME	4	12.1	12	36.6	24.5	3	9.6	23	74.1	64.5
ISSUE	4	12.1	11	33.3	21.2	2	6.4	25	80.6	74.2
PUNCTUATION	0	0	5	15.1	15.1	0	0	16	51.6	51.6
PAGINATION	4	12.1	12	36.6	24.5	3	9.6	24	77.4	67.8

Figure 23 Journal article citations



The aim of question 23 was to establish whether students are able to distinguish between a website citation and a book or journal citation. Various options were provided from which respondents were expected to select the correct citation for a journal article. Detailed results provided for in table 14 show that 22 (66.6%) of students selected the correct option in the pre-test and the number rose to 33 (100%) for the post-test. For the experimental group, 24 (77.4%) of the respondents selected the right option in their pre-test and the number increased by 16.1% to reach 29 (93.5%) in their post-test scores.

Table 14: Website bibliographic citation

TABLE 14	**Question 23: Which of the following references refers to a website?**									
	Pre-test control group		**Post- test control group**		**Difference**	**Pre-test experimental group**		**Post- test experimental group**		**Difference**
	Score	**%**	***Score***	***%***		***Score***	***%***	***Score***	***%***	
A.) ALLEN, A. 1993. CHANGING THEORY IN MANAGEMENT PRACTICE. THE JOURNAL OF MANAGEMENT SCIENCES, 30(6): 43-56.	0	0	0	0	0	0	0	0	0	0

B.) COLE, G.A. 1996. MANAGEMENT THEORY AND PRACTICE. 5TH EDITION . LONDON, LETTS EDUCATIONAL.	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
C.) KULTHAU, C.C. 2004. INFORMATION SEARCH PROCESS. [ONLINE] AVAILABLE HTTP:WWW.SALS.RUTGERS.EDU/KULTHAU/INFORMATION SEARCH PROCESS.HTM. DATE VISITED. 12 JUNE 2011.	**22**	**66.6**	**33**	**100**	**33.4**	**24**	**77.4**	**29**	**93.5**	**16.1**
D.) NONE OF THE ABOVE	11	33.3	0	0	-33.3	7	22.5	2	6.4	-16.1
TOTAL	33		33			33		33		

4.5 Pre-test and post-test scores comparison

One of the objectives of the study was to investigate the effectiveness of an Information Literacy intervention that was administered on the experimental group. The use of a control group allowed for the comparison of the results between the two groups to check for improvements. Figure 14 and 15 presents the difference in scores for the two groups under study in both their pre-test and post-test. The control group achieved an average score of 36.6 % for the pre-test and the figure rose by 11% for the post-test to 46.6%. On the other hand, the pre-test and post-test average for the experimental group increased by 31.94%. The scores were 34.83% and 64.77% for the pre-test and post-test respectively. The increase obtained signifies the effectiveness of the intervention that was administered to the experimental group. The findings matched with that of Davids (2009:57); Mitchell-Kamalie (2011:175) and King (2007:167) whose findings revealed that administering Information Literacy skills instruction to students will assist in them obtaining these skills.

Figure 24: Control group average scores

Figure 24 presents the average scores obtained by the control group for the pre-test as well as for the post-test. The Information Literacy intervention was not administered to the control group in order to allow for the comparison of results.

Figure 24 Control group average scores

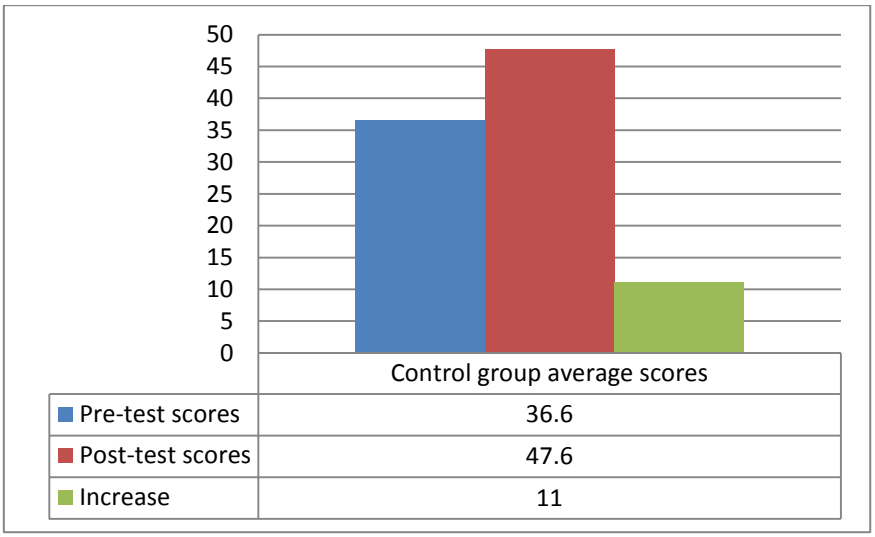


Figure 25: Experimental group average scores

Figure 25 present analyses results detailing the average test scores attained by the experimental group for the pre-test and post-test after the intervention.

Figure 25 Experimental group average scores

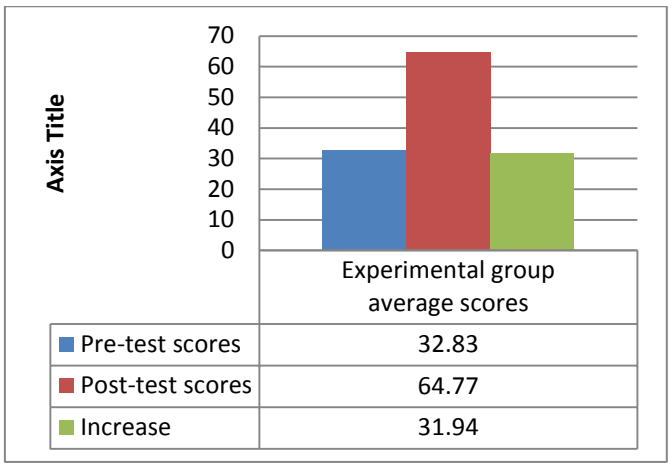


Table 15 lists the increase in test scores for the experimental group after the Information Literacy intervention. Respondent number 25 an English speaking female student achieved 69% increase between the two scores. She was followed by respondent number 26 an English female student who achieved an increase of 64% between the two test score. Only one student in the experimental group failed to achieve an increase between the two scores. Respondent number 32 a Xhosa male student attained a -11% decline between the pre- and post-test scores.

Table 15: Highest increase in scores for the experimental group

Respondent	Pre-intervention test	Post-intervention test	Increase %
25	17	86	69%
26	22	86	64%
2	23	83	60%
18	22	81	59%
7	36	86	50%
27	28	78	50%
19	38	81	43%

4.6 Information Literacy intervention workshops: student feedback

In order to evaluate the impact that the Information Literacy intervention had, it was also significantly important to assess and gather feedback from the respondents about the intervention administered. A simple questionnaire was developed to gather respondents' feedback on the content and effectiveness or lack thereof, of the Information Literacy intervention. Table 16 presents the feedback provided by respondents in the experimental group after the intervention workshops. A total 25 (81%) out of 31 students that participated in the interventions gave positive feedback about the workshop. However 6 (19%) of the students indicated that they did not gain anything from the Information Literacy intervention workshops that were offered.

The negative responses need not be taken in light terms, but should be applied to influence how future interventions can be implemented. Information Literacy training cannot be viewed as an event, but rather an on-going process. Two workshops alone cannot guarantee the total assimilation of the full set of skills by the students.

Table 16:
Information Literacy intervention: student feedback

	Yes	**No**
Did you find the Information Literacy intervention useful?	25	6
Did the presenter make the training understandable?	29	2
Can you apply what you have learnt for the duration of your studies?	23	8
Are you now able to reference and cite properly?	27	4

The second section of the questionnaire consisted of two open ended questions. The questions required the respondents to write in their own words what they liked and what they did not like about the Information Literacy intervention. Unfortunately not all the respondents completed this section. Selected common responses to the two open ended questions are listed below.

What did you like about the workshop?

- "The session was very detailed and made me understand referencing a bit more"
- "being taught how to reference and cite properly"
- "liked the presentation on referencing journals and using Ebscohost"
- "It was very informing and it gave me a clear understanding of what was being explained"
- "Taught us easier ways of finding information and how to reference that information properly"
- "It was very informing"
- "Liked the thesaurus part, now I am going to the library and find words with similar meaning"
- "We left class early"

- “Was taught new things that I was not aware of”
- “The presenter was nice and I understood all that he said”
- “It teach me how to find information on Ebscohost and how to reference”

What did you not like about the workshop?

- “I don’t really understand much about computers, I wish he could have explained more”
- “To many exercises”
- “I liked everything, but the noise from my classmates I did not like it”
- “Too much time was spend on how to reference journals and books and little on other sources”
- “The internet was very slow”
- “Not enough time to complete the exercises”

Most of the respondents that took part in the intervention shared the same sentiments as they were all in agreement that the little time was allocated for the interventions. They were expected to complete exercises within a short space of time. An encouraging aspect is the positive feedback received from the respondents, were they indicated that they had gained something especially referencing skills from the workshop which they can apply in their studies and beyond.

4.7 Conclusion

The chapter presented evidence of findings from the respondents that participated in this study. Analysis of the data shows that the interventions administered to the experimental group were effective. The data indicates that the average scores for the experimental group increased by 32% after the interventions, from 33% for the pre-test to 65% for the post-test. This is in contrast to the average scores attained by the control group which managed an 11% increase between the two scores. For the pre-test, the control group achieved a 36% average score which rose to 47% for the post-test. The variance between the increase in scores between the control and experimental group was 22%. If we take into cognisance the fact that only two

workshops were administered to the group, one can conclude that the percentage can increase more if the training is inculcated and made on-going within the classroom setting.

Feedback from the workshop evaluation indicated that the participants gained appreciation of Information Literacy skills and the value that the interventions can have in improving their academic work. It is the wish of the researcher that the college can make use of the findings to prescribe and make informed choices with regards to how Information Literacy education should be delivered in an effective way that benefits the students.

CHAPTER 5

DISCUSSION OF FINDINGS

5.1 Introduction

Chapter 5 provides a discussion of the findings. It attempts to interpret and fit them within the broader context of Information Literacy tuition in higher education. The study examined the baseline Information Literacy skills of Business Faculty students. It probed the effectiveness of an Information Literacy intervention administered to an experimental cohort. Correlation between Information Literacy and factors such as language, computer literacy and access to libraries are explored. Research questions listed in chapter 3, are conversed and interpreted at a much deeper level.

5.2 Research questions

Data collected and presented in chapter 4 will be interpreted in this chapter. A closer look at the following research questions identified in chapter 3 will be undertaken:

- Were the Information Literacy interventions that were administered to the first year business faculty students effective and did they meet the proposed outcomes?
- What are the existing Information Literacy competencies of the incoming students in the Faculty of Business?
- How should Information Literacy programmes be delivered?
- Are the ACRL standards a reliable tool to assess Information Literacy skills and the effectiveness of the interventions administered?

More specific questions were identified as follows:

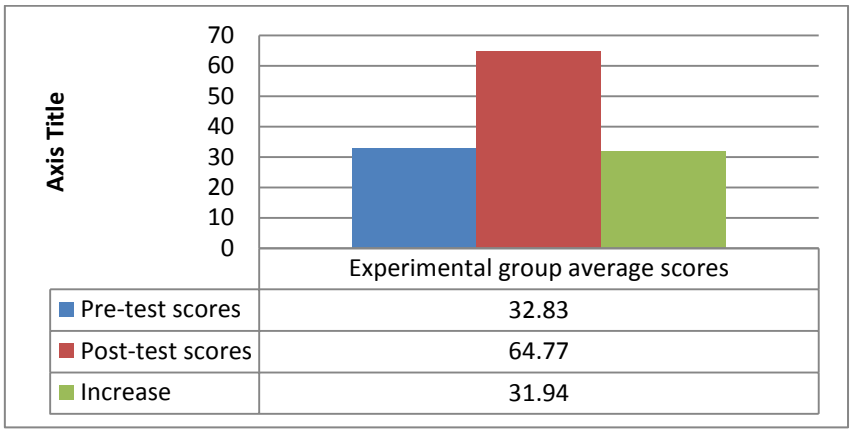
- How did the Information Literacy interventions impact towards the improvement of students information needs analysis?
- Does the initiative assist in reducing plagiarism cases amongst students?

- Does it improve the quality of referencing and citing?
- Is there a correlation between Information Literacy competency and other factors such as computer literacy, language and access to libraries?

5.2.1 Intervention effectiveness and baseline information skills

The study sought to evaluate the baseline information skills of first year students. The study outcomes are interconnected with previous studies by Davids 2009 and King 2007 that exposed Information Literacy deficiencies of incoming students. The pre-test scores for the control and experimental group were 32.83% and 36.6% respectively. Results revealed that students enter tertiary education with Information Literacy skills deficiency. Results matched findings by Davids 2009, De Jager and Nassimbeni 2003, King 2007, Mitchel-Kamalie 2010 and Sayeed 1998. The research study further investigated the effectiveness of an intervention administered to the experimental group. A comparative examination of pre- and post-test scores for the experimental group revealed an increase between the average scores. Figure 26 presents the average pre- and post-test score attained by students in the experimental cohort. Results confirm that, for the pre-test participants attained an average score of 32.83% and after the Information Literacy intervention, the score improved by 31.94% to 64.77%. In comparison, the control group increased its average score by 11% from 36.6% to 47.6% for the pre- and post-test score respectively.

Figure 26: Experimental group average scores



The 31.94% average increase for the experimental group confirms on the whole that participants gained something through the interventions. However certain shortcomings need to be highlighted and the need for further test emphasised. These are:

- The study was not able to test all the standards.
- Plagiarism and referencing aspect are difficult to measure through the use of a questionnaire alone. Further test to analyse student assignments and their application of the referencing techniques taught during the intervention workshops would be beneficial.
- Access to student's assignments and test results to check for improvements in performance would have added more weight to the study.

5.2.2 Reliability of ACRL standards for assessing Information Literacy skills

Selected ARCL standards were identified to act as assessment benchmarks. ACRL standards are internationally recognised and have been applied in other studies such as Davids (2009), King (2007) and Mitchell-Kamalie (2010). Comparative scrutiny of the pre-and post-test scores of the experimental group exposed an improvement between the two scores. This confirms the effectiveness of the intervention workshops. However certain shortcomings should be highlighted. Due to the scope of the study certain standards are difficult to measure within a short space of time and the need for further test is imperative. Evaluating whether participants in the experimental group fully grasped the concept of ACRL standard 5, which is referencing and plagiarism could not be adequately measured using the post-test scores alone. It required the researcher to gain access to the student assignments and analyse them. To assess if they had correctly applied what was taught during the intervention workshops in their assignments. This was beyond the scope of the study and can be fully implemented if a longitudinal study is undertaken.

5.2.3 How should Information Literacy programmes be delivered?

Analysis of the pre- and post-scores for the experimental group revealed a substantial upsurge between the two scores. The surge in scores and the positive feedback received from the students after the intervention workshops, confirms the success of the workshops. However, a point worthy noting is the negative comments about the inadequate time frame allocated for the interventions which resulted in students failing to complete some of the practical exercises on offer.

There is wide ranging debate on what is the best way to convey Information Literacy education at higher education institutions. Analysis of literature in chapter 2 showed that most of the support favours the embedding of Information Literacy education within subject content. The intervention workshops were conducted within subject time slots, negotiated for with respective lecturers. The participants in the study took part in the intervention workshop as part of their course. The experimental cohort participants were enrolled for the Business Management 1A and Accounting 1A. The class periods for these two modules were used to facilitate the intervention workshop. Participation from the lecturers was achieved as well. Conducting the interventions within the subject times ensured that student participation was guaranteed. From past experience, the researcher can attest to the fact that students at Rosebank College are reluctant to attend any workshops that are offered as stand-alone initiative. The library currently offers Information Literacy training as stand- alone. Attendance to these workshops is immensely unsatisfactory. On numerous occasions, the researcher has tried to market these stand-alone workshops but the efforts have been futile as students shun away from them. Offering the interventions within subject time slots and liaising with lecturers ensured that 31 students in the experimental group participated in the interventions. To ensure that Information Literacy training is effective and benefits students in the long term, the following should be instigated going forward:

- Offering Information Literacy as a stand-alone course has proved to be hopeless at Rosebank College. Students are disinclined to partake in any initiatives that do not contribute to their grades. They do not perceive in strong terms the importance of attending Information Literacy training workshops. It is always a daunting task to entice students to attend the non-compulsory Information

Literacy workshops that the library hosts. When publicizing such workshops, the common response that one gets from the students, is the question "*Is it for marks? or Does it count towards my attendance?*" The college administration needs to come up with strategies of integrating Information Literacy into the curriculum. Students are more likely to attend a session that has been slotted within their class timetable as compared to a stand-alone session driven by the library in isolation. Information Literacy should be considered as a campus wide initiative and not a preserve of the library alone.

- Another alternative angle that the college management could pursue would be to offer Information Literacy as a credit bearing module. Currently all students enrolled at Rosebank College are expected to do an introductory computer literacy module called End User Computing (EUC). Aspects of Information Literacy could then be integrated within the module and facilitated in partnership by the librarians who are information specialist and the lecturers as subject matter experts. The combined effort would allow for the cross pollination of philosophies between the two role players towards the delivery of Information Literacy skills to the student community (Hart & Davids, 2010: 25 and Maitaouthong, Kulthida and Techmane *(*2011:138). The initiative would prepare students for life-long learning as they can apply what they are learning currently in their studies and beyond. Support for the integration or embedding of Information Literacy into the curricula is growing as evident by the analysis of recent literature (Carr, Iredell, Newton-Smith and Clark, 2011:136).

- Information Literacy training cannot be viewed as an event but rather an on-going process. A solitary workshop cannot guarantee the assimilation of the full set of Information Literacy skills by students. Conducting intensive workshops should be an on-going process. The college management should come up with strategies of making sure that these skills are taught to first year students during their first year of study and reinforced for the full duration of their course. This would allow students to grasp the expertise from the lower order up to the higher order Information Literacy skills.

- Alternatively the college may possibly offer Information Literacy as a stand-alone and credit bearing module for all first year students. This direction would guarantee full involvement from students since the module would contribute to their course credits. Students are more likely to exert 100% effort on projects that count towards their final course mark. For the study, the intervention workshops were incorporated within the Business Management 1A and accounting 1A modules hence student attendance was realized. However, the researcher confronted some challenges in trying to convince students to complete the hand in exercise that were part of the intervention. The common question that emanated from the participants throughout the workshops was: "*Is this for marks*?" These findings suggest that one cannot infer that integration alone will achieve the desired objective. There is strong need to try and inform students of the significance of Information Literacy in their education. This is imperative in that, as they are made to participate in the initiatives they will appreciate the significance these skills have in their studies.

- Amendments to the current library policy are vital to ensure effective delivery of Information Literacy education. The current library policy notes the importance of Information Literacy education in support of current higher education pedagogy. Conversely the policy bestows the responsibility of Information Literacy training upon the shoulders of the Librarians alone. It is silent on the involvement of other educational partners. Article 7 of the policy positions that, *it is the responsibility of campus librarians to ensure that regular and adequate user Information Literacy sessions are provided* (IIE Library Policy 2012). The development of Information Literacy is not a preserve of the library alone but rather a shared role. While the library plays a leadership role in the development of information literate graduates, the effective embedding of Information Literacy programmes within the mainstream of the learning process requires close partnership amongst all stakeholders (University of Tasmania 2012). Literature reviewed in Chapter 2 stressed the significance of collaboration with regards to Information Literacy training between librarians and scholars (ACRL 2011, Davids 2009:68, Hart & Davids, 2010: 25, Maitaouthong, Kulthida and Techmanee 2011: 138 and Mitchel-Kamalie 2011:192). Collaboration allows for the cross pollination of ideas between academics and librarians. Cochrane (2006:99) notes that, while

librarians are the drivers of Information Literacy improvement, its effective delivery requires the involvement of all educational partners supporting learning. Hence it is vital for the college management to amend the policy and make Information Literacy education a campus wide initiative and not a preserve of the library and librarians in isolation.

5.2.4 Information Literacy intervention and students information needs analysis

Being information literate equips students with information needs analysis skills. The study aimed at investigating whether respondents improved their information needs analysis skills after the intervention workshop. Analysis of questionnaire questions that examined this criterion showed a marked improvement between the pre- and post-test scores for the experimental cohort. An example of such questions is question 16. The question required participants to identify which source of information to consult when looking for scholarly information. Results show that, for the pre-test 6 (19.3%) of the respondents selected online database which was the correct option. After the intervention, the number surged by 48.4% to 21 (67.7%). However, information needs analysis skills are difficult to measure based on the post-test scores analysis alone. To measure this aspect fully, a broader longer study is required. The study would observe respondents as they conduct their searches in the library and analyse how they apply the information in their research.

5.2.5 Referencing and plagiarism

Questions 22 and 23 sought to establish whether students had mastered referencing techniques. Question 22 intended to determine whether participants were able to construct the full bibliographic details of a journal article. Questioned 23 required students to identify a citation for a website from a list provided. A comparison of the pre-and post-test scores for the experimental cohort illustrates that student scores for the two questions improved after the intervention. However, it cannot be inferred that after the interventions, respondents managed to grasp the full set of referencing techniques. To check for the total assimilation of these skills, analysis of

respondents' assignments is essential. The assignment analysis would focus on correct in text referencing and the provision of full bibliographic citations of sources referred to. However this was beyond the scope of the study. Feedback received after the post-test intervention indicated that participants felt that a lot of attention was paid to the referencing of books and journals thereby neglecting other sources.

5.2.6 Correlation between Information Literacy and other factors such as: language, computer literacy, access to libraries

The study sought to explore correlation between Information Literacy and factors such as reading habits, home language and computer literacy. It probed the conception whether these factors affect the effective delivery of Information Literacy training programs. Analysis of the data presented in chapter 4 pointed to the fact that respondents who listed English as their home language achieved higher average scores in their pre- and post-test scores in comparison to Xhosa speaking students. It was beyond the scope of the study to investigate why students with English as home language attained higher scores than students with Xhosa as home language. However the difference in scores between the two languages can be attributed to school backgrounds and the ability to comprehend questions better by participants with English as their home language. The average scores correlated with Davids (2009:63) whose results showed that participants with English and Afrikaans as home language attained higher scores in comparison to students with Xhosa as home language.

After the implementation of the intervention on the experimental group, English and Xhosa attained the same difference when comparing the pre- and post-test scores. English attained 31.13% increase with Xhosa achieving an increase of 28.24%. The small gap confirms Davids (2009:41) findings that suggested that using English language in imparting Information Literacy skills is not be a barrier towards the realisation of these skills by students.

Expertise in computer usage is a vital factor when retrieving information (Baras, 2002). However being computer literate does not guarantee one to be information literate because the latter require cognitive skills and problem solving skills (Behrens,

1990:355, Davids 2009:44 and Johnson & Eisenberg, 1996:13). The current generation of students enrolling at tertiary institutions are “techno savvy” but this does not translate to being information literate Ivanitskaya, O’Boyle & Casey (2006:6) and Mofford & Steinberg (2006:3-5). The relationship between computer literacy and Information Literacy is one of the objectives the study sought to examine. The study exposed that participants with prior computer knowledge did not outperform those that did not have. The discovery confirms similar studies by Davids (2009:44, Horton, 1983:95 and King 2007:102) who concluded that Information Literacy is not similar to computer literacy. The computer literacy skills that the participants claimed to possess did not assist them in attaining high scores for the pre- and post-test averages.

Another important factor the study investigated was the correlation between Information Literacy proficiency and reading habits. Questions on the reading habits were based upon the premise that participants who read and have access to school libraries might possess higher Information Literacy proficiency levels in contrast to those that do not. The findings confirmed an insignificant variance between those that had and those that did not have. It confirmed Davids (2009:64) whose findings obtained little difference between those that answered positively and those that answered negatively.

The exponential nature of information and dynamics in work environment has compelled the need for high quality graduates exiting tertiary institutions. The success of the intervention workshops presented to the experimental group supported by post-test scores superior to the control cohort should not go unnoticed. The study results provide strong motivation to the college management to come up with strategies of entrenching Information Literacy teaching within the main stream of the learning process at Rosebank College Cape Town. Information Literacy education is not an event, but rather an on-going process whose success is hinged upon the close cooperation of all education partners involved in the learning process.

CHAPTER 6

REFLECTIONS AND RECOMMENDATIONS

6.1 Introduction

The previous chapter discussed the findings of the study. This chapter will present the conclusions and recommendations. The purpose of the study was to assess the baseline Information Literacy skills of incoming Business Students at Rosebank College Cape Town. It examined the effectiveness of an Information Literacy intervention administered to one of the cohorts under study. The chapter reviews the overall purpose of the research. Suggestions for future research angles are explored.

6.2 Objectives of the research project

The study investigated the effectiveness of an Information Literacy intervention. It offers propositions for the implementation of Information Literacy programmes at Rosebank College Cape Town. A review of the study in retrospect through analysis of data presented in chapter 4 highlights the success of the project in accomplishing its objectives. This is reinforced by the inclusion of a control group whose post-test results are compared with that of the experimental cohort. Comparison of the pre- and post-test scores for the control group showed an 11% growth from 36.6% to 46.6%. On the other hand, the experimental cohort obtained a 31.94% upsurge between the pre- and post-test scores of 32.83% and 64.77% respectively. The increase obtained represents the effectiveness of the intervention administered to the experimental cohort. The findings correlated with Davids (2009:57, Mitchell-Kamalie, 2011:175 and King 2007:167) whose outcomes attested that administering Information Literacy skills workshops to students will support the development of these skills. This is shown by the improvement in post-test scores after the interventions.

Additional conclusion drawn from the research is the need to conduct a needs assessment before any Information Literacy intervention is administered. A needs assessment allows for tailor making of Information Literacy workshops to satisfy and fill any deficiency gaps as identified through pre-testing. In this study, pre-testing informed the researcher of Information Literacy proficiencies gaps that would need emphasis during the facilitation of the interventions. The need for pre-testing is stressed by Buer (2011:48) and Davids (2010:68) who support the implementation of a diagnostic approach towards Information Literacy assessment. The valuation would consist of a pre-test to assess baseline incoming skills and a post-test to assess the assimilation of these skills by students for the duration of their study.

The execution of the research did not come without challenges. The challenges experienced by the researcher in conducting the research should not be regarded in light terms. The impediments if left unrestrained, can adversely distress any future Information Literacy training to be conducted at the college. The difficulties experienced by the researcher highlight the day to day challenges that other librarians across Rosebank College sites might be subjected to:

- Negotiating for session time with the academic staff to facilitate the intervention workshops proved to be an enormous challenge. Academics were hesitant to sacrifice their lecturing time to allow for the interventions. This can be attributed to the fact that the semester at Rosebank College is split into 13 academic weeks. The module pacers are then structured to fit within the 13 week time slot. The presentation of the lectures in class fit within the module pacer, hence the hesitancy of the lecturers to sacrifice their contact time with students to allow for the facilitation of the intervention by the researcher. The status quo currently sees students participating in Information Literacy interventions offered by the library in two ways. They may attend the non- compulsory workshops offered by the library whose attendance is dismally low. Alternatively they can attend as the whole class on the request of their lecturer for a session. It has to be noted that Information Literacy is a campus wide initiative and not the solitary responsibility of the library. Effective Information Literacy education obliges the immersion of all stakeholders involved in learning. The class bookings by the lecturers are normally for one 50 minute session. Information Literacy training is not an event

but rather an on-going initiative. A solitary workshop is not adequate to impart these skills to students.

- The college is a one person library. The assistant librarian was transferred to another campus. The librarian on site struggles to effectively conduct sessions that are beneficial to students due to inadequate time and lack of capacity. The librarian gets support from bursary students who assist during their free sessions. Planning for any Information Literacy training should be done taking into cognisance the availability of bursary students to relieve the librarian. Any arrangement to book a session with a lecturer to conduct Information Literacy training is also done bearing that in mind. To that effect, lecturers put forward their concerns and thus it is always difficult to strike a balance and arrange for a session that both the librarian and lecturer are comfortable with. The staff shortage leads to sessions being conducted on limited times and are sometimes rushed. Apart from the Information Literacy training, the librarian fulfils other roles as specified by the campus librarian job description.

- The reluctance of students not to take seriously any extra activities that do not contribute to their marks is of serious concern at Rosebank College Cape Town. King (2007:77) in her PhD study reports that students do not go voluntarily for training sessions offered by the academic library. Her sentiments are further echoed by Jiyane and Onyancha (2010:19) who alluded to the fact that the non-mandatory attendance of Information Literacy workshops at higher education institutions was the root cause of students shunning away from these workshops. There is a general anecdote that, students do not devote time to activities that do not count towards their official assessment. This has been a major challenge as students are reluctant to attend the stand alone workshops offered by the library. Oakleaf (2011:18) added to this debate by asserting that, the need to assess Information Literacy has been omitted from higher education. This exposes librarians, as they deliver workshops characterised by disappointing attendance and without any form of assessment. Hence, it becomes a huge challenge for students to appreciate the value of these sessions as they are not mandatory and credit bearing.

6.3 Recommendations

- Academic staff needs to popularise the prominence of Information Literacy skills amongst their students. Participation in stand-alone workshops presented by the library can be boosted through the backing from the teaching staff. Academics can encourage students to attend and accentuate the significance the workshops have to their studies. Examination of literature undertaken in chapter 2 stressed the importance of collaboration between librarians and the academic staff. This is reinforced by Davids (2009), Hart and Davids (2010), Maitaouthong, Kulthida and Techmanee (2011) and Mitchel-Kamalie (2011) studies that underlined the importance of library and faculty partnerships.

  Collaboration should not only be restricted to marketing Information Literacy workshops by the academic staff. It should be extended to the lecturers inviting librarians to present in partnership with them specific information skills to their respective classes. Such an initiative would allow for the cross pollination of ideas between library and faculty. It will further reinforce the prominence of Information Literacy skills amongst the students. Information Literacy literature is filled with various authors supporting library and academic collaboration. Lwehabura (2008:164) advocated that, librarians need to recognise that although they are experts in Information Literacy, they should partner with the teaching staff to effectively teach Information Literacy. The thoughts were further echoed by Cochrane (2006:99) who stressed that while information professionals are the drivers of crucial Information Literacy developments and education, its effective delivery require support from various stakeholders. Information Literacy is an educational issue relevant to various professions supporting learning, hence the need for the two role players to form partnerships in delivering Information Literacy.

- Alterations of the current library policy or the promulgation of an Information Literacy policy are vital to ensure its effective delivery in line with current higher education pedagogy. The current library policy notes the role of Information Literacy education in support of teaching and learning. Conversely the policy

confers accountability of Information Literacy training upon the shoulders of the librarians alone. It is silent on the involvement of other educational partners. The development of Information Literacy is not a preserve of the library alone but rather a communal role. The library plays a leadership role in the development of information literate graduates. Nevertheless the effective embedding of Information Literacy programmes within the mainstream of the learning process requires close partnership amongst all interested parties (University of Tasmania 2012).

- The college administration needs to envisage ways of integrating Information Literacy into the curricula. Incorporating Information Literacy skills into the syllabi would ensure that students will easily assimilate these skills into their intellect. A cross section of authors support the notion of teaching Information Literacy as part of a course as it affords an effective and proficient way by which students can assimilate these skills. According to Maitaouthong, Kulthida and Techmanee *(*2011:139) incorporating this expertise would nurture student awareness of the importance of these skills and allow for the advancement and continual development of learning opportunities. This would be achieved through the implementation of resource based learning whereby the lecturer decides on learning activities and assigns research assignments that would allow students to acquire information skills as well as meet the specific subject objectives.

- Participation in Information Literacy programmes should be mandatory to all first year students. Information Literacy skills are a requirement for all students graduating from tertiary institutions. Prospective graduates are being prepared for occupations that might not exist when they eventually graduate. The employment market has been made dynamic due to technological advancements and the exponential nature of information. Graduates need to be in possession of abilities that can allow them to adapt to the ever changing environment. Compulsory Information Literacy education is imperative as it ensures that students gain these skills to apply during the course of their studies and beyond.

- The college management needs to beef up the library staff compliment to support the provision of Information Literacy programmes. The current setting that exists is not ideal for the effective conveyance of Information Literacy skills to students. The staff compliment of the library is made up of one person. This makes it extremely difficult for the librarian to have ample time to plan and deliver effective Information Literacy workshops. The college management should employ the model applied by most public universities across the country that have created the positions of librarians responsible for the overall training of Information Literacy skills to students. The lack of adequate staff leads to the absorption of Information Literacy skills by the students resting on shifting sands. The college management needs to deploy adequate staff members to drive information skills training and guarantee the absorption of these skills by students to apply in their present studies and beyond.

- The establishment of an Information Literacy committee is essential. The committee should be tasked with implementing Information Literacy training across all the Rosebank College sites and the development of training material.

6.4 Suggestions for future research

Most of the research that has been done in South Africa has mainly focused on Information Literacy skills amongst students at public universities with no focus on private and Further Education and Training colleges. Very little has been done to assess the current state of Information Literacy tuition within the private education space. Assessing how these institutions are implementing Information Literacy education would provide guidelines for areas that need to be improved in order to enhance Information Literacy education delivery within that space. Further study should also place emphasis on how Information Literacy competencies impact on the overall students' academic performance and the through put rate.

The provision of library and information services to students enrolled at tertiary is a compliance requirement of CHE. A study that explores the contribution libraries at

private HET colleges have towards meeting the educational objectives of the parent institution in support of teaching and learning should be undertaken.

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APPENDEX 1: LETTERS

UNIVERSITY *of the*
WESTERN CAPE

University of the Western Cape
Private Bag X17
Bellville
7535

19 May 2011

Rosebank College Cape Town
44 Strand Street
Rosebank College House
Cape Town

Dear Mrs Tamlyn Porter

I am currently pursuing a master's qualification (Mbibl Information Studies) at the University of the Western Cape in the field of Library and Information Systems. In order for me to complete my degree, I have decided to conduct primary research using Faculty of Business students at Rosebank College Cape Town. My thesis is entitled: Evaluating an Information Literacy intervention for incoming business faculty students at Rosebank College Cape Town. The research is being conducted under the supervision of Dr Lizette King.

I am hereby requesting permission to conduct my research using Faculty of Business students. The results of the research will help me tailor make library training workshops to meet various student information deficiencies. This letter serves to inform you that the information gathered will be solely for research purposes and that responses will be treated with utmost confidentiality and the respondents will remain anonymous.

Respondents can also withdraw at any stage.

Looking forward to hearing from you soon.

Yours sincerely

Russell Chisango
Campus Librarian
Rosebank College Cape Town
021 425 2084
rchisango@rosebankcollege.co.za

APPENDIX 2: QUESTIONNAIRE

UNIVERSITY *of the*
WESTERN CAPE

INFORMATION LITERACY QUESTIONNAIRE
PRE AND POST TEST INTERVENTION QUESTIONNAIRE

NB: Please tick appropriate box

Background Information

1. Name.....2. Surname.....

3. Student No.....4. Programme.....

5. Gender

M	**F**

6. Age.....7. Home Language?

English	**Afrikaans**	**Xhosa**	**Zulu**	**Sotho**	**Others Specify)**

---

8. Have you attended an introductory computer course at school?

Yes	
No	

9. Did you have access to a library at the secondary school that you attended?

Yes	
No	

10. Is there a library in your community?

Yes	
No	

11. Of the items listed below which one have you read in the past month?

Book	
Journal	
Magazine	
Newspaper	
None of the above	

12. Do you have a computer at home?

Yes	
No	

13. Have you made use of any Rosebank College Library Resources?

Yes	
No	

14. Do you have an email address?

Yes	
No	

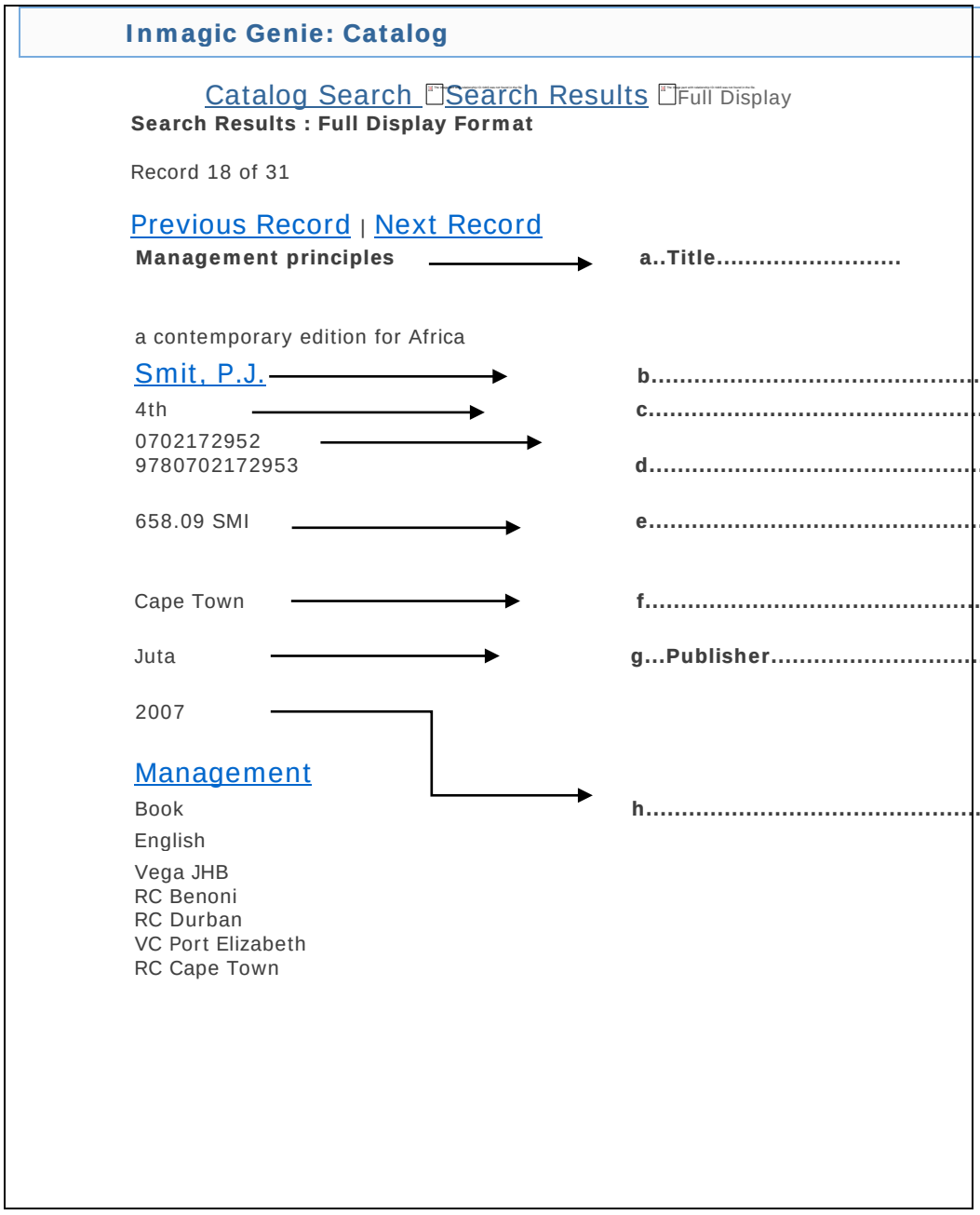
15. Of the items listed below, which one would you consult to find the most current information on a subject?

Dictionary	
Encyclopaedia	
Manual	
Book	
Journal	
Don't know	

16. What is the best place to find a scholarly article?

In general magazines	
On the internet	
In an online database	
In reference books	
Don't know	

17. The screen shot below shows the fields on an electronic catalogue. Please identify the various fields by filling in the spaces provided.



18. You have to write an essay on "Economic recession in South Africa" Which search strategy would yield more results?

a. Recession OR South Africa

b. Recession AND South Africa

c. Recession NOT South Africa

d. Non of the above

19. A keyword search will

Search only titles	
Work even if you spell a word wrong	
Search title, contents and subject areas	
None of the above	

20. You need a brief introductory article to familiarise yourself on human resources management. where would you look? Please tick appropriate box.

Library catalogue	
Encyclopaedia	
Periodical Index	
Internet	
None of the above	

21. Is it okay to use someone else's ideas or thoughts without acknowledging them?

Yes	
No	
Not sure	

22. You have cited the following article in your assignment. Using the Harvard style of referencing, write a bibliography for this article in the spaces provided below.

Item Details
Article title: Developing the framework for coordination in supply chain of SME's
Journal Title: Business Process Management Journal
Author: Monrad Benyoucef
Date of publication: 2011
Volume: 17
Issue: 4
Pages: 619 - 638

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

23. Which of the following references refers to a website?

a. Allen, A. 1993. Changing theory in management practice. *The Journal of Management Sciences,* 30(6): 43-56.

b. Cole, G.A. 1996. Management theory and practice. 5th edition . Letts Educational, London.

c. Kulthau, C.C. 2004. Information search process. [Online] Available
http:www.sals.rutgers.edu/kulthau/information search process.htm. Date visited.

d. None of the above

APPENDIX 3: ACRL Standards used for the intervention

Standards, Performance Indicators, and Outcomes

Standard One

The information literate student determines the nature and extent of the information needed.

Performance Indicators:

1. The information literate student identifies a variety of types and formats of potential sources for information.

   Outcomes Include:

   c. Identifies the value and differences of potential resources in a variety of formats (e.g., multimedia, database, website, data set, audio/visual, book)
   d. Identifies the purpose and audience of potential resources (e.g., popular vs. scholarly, current vs. historical)

Standard Two

The information literate student accesses needed information effectively and efficiently.

Performance Indicators:

1. The information literate student selects the most appropriate investigative methods or information retrieval systems for accessing the needed information.

   Outcomes Include:

c. Investigates the scope, content, and organization of information retrieval systems

d. Selects efficient and effective approaches for accessing the information needed from the investigative method or information retrieval system

2. The information literate student constructs and implements effectively-designed search strategies.

Outcomes Include:

b. Identifies keywords, synonyms and related terms for the information needed

Standard Five

The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.

Performance Indicators:

3. The information literate student acknowledges the use of information sources in communicating the product or performance.

Outcomes Include:

a. Selects an appropriate documentation style and uses it consistently to cite sources

Appendix 4

Information literacy intervention student evaluation questionnaire.

NB: Tick appropriate box.

1. Did you find the training session useful?

Yes	
No	

2. Did the presenter make the training understandable?

Yes	
No	

3. Can you apply what you have learnt for the duration of your studies?

Yes	
No	

4. Are you now able to reference and cite properly?

Yes	
No	

5. What did you like about the workshop?

……
……
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6. What did you not like about the workshop?

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