

**ASSESSMENT OF INFORMATION LITERACY SKILLS OF
FIRST-YEAR STUDENTS AT MANGOSUTHU
TECHNIKON AT A PRE-LIBRARY ORIENTATION AND
INSTRUCTION PHASE**

by

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DECLARATION

The researcher declares that this study is her original work and has not been submitted to any other institution of higher learning.

Acquinatta Nomusa Zimu

Signature.....

Date.....

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ABSTRACT

This study assessed the information literacy (IL) skills of first-year students at Mangosuthu Technikon (MANTEC) at a pre-library orientation and instruction phase. What is evident is that students do, to a greater or lesser degree, display inadequate levels of IL skills. What is not so evident is the extent and nature of these inadequacies. The purpose of the study was to establish the level of these inadequacies.

Background information concerning the MANTEC library orientation and instruction programme and the Eastern Seaboard Association of Libraries (esAL) User Education Pilot Project study was provided and an overview of MANTEC and its library was given. The assessment of IL skills in higher education libraries, with reference to the MANTEC library was discussed. The MANTEC students' IL skills were assessed using Bloom's Taxonomy of Educational Objectives, which are evident throughout the objectives of the study.

The research method used for this study was the descriptive survey method. The sample consisted of 170 first-year students. A purposive sampling procedure was used. The questionnaire consisted of two main sections, one which elicited demographic data of students and the other extracted data that addressed the objectives of the study. Results were coded and analyzed using the SPSS program.

The findings of the survey indicated that there is a dearth of IL skills among the majority of MANTEC first-year students. Like many other studies it revealed that many first-year students, especially from the historically disadvantaged institutions (HDI) are under-prepared for tertiary education generally and for IL demands made on them at the tertiary level. Even those who have had previous library exposure appear to bring with them little or no IL competencies to tertiary institutions.

Based on the findings for this study, recommendations were made with the aim of improving MANTEC students' IL skills.

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LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|------------------|--|
| AASL | Australian Association of School Libraries |
| ACRL | Association of College and Research Libraries |
| AECI | African Explosives and Chemical Industries |
| AECT | Association of Educational and Communications Technology |
| AIDS | Acquired Immune Deficiency Syndrome |
| ALA | American Library Association |
| CALICO | Cape Library Co-operative |
| CAUL | Council of Australian University Librarians |
| CD ROM | Compact Disk Read Only Memory |
| CHE | Council of Higher Education |
| CHELSA | Council of Higher Education Libraries in South Africa |
| DDC | Dewey Decimal Classification |
| EBSCOHost | Elton B Stephen Company |
| esAL | Eastern Seaboard Association of Libraries |
| esATI | Eastern Seaboard Association of Tertiary Institutions |
| ETS | Educational Testing Service |
| EU | European Union |
| GRE | Graduate Record Examinations |
| HAI | Historically advantaged institutions |
| HDI | Historically disadvantaged institutions |
| HEI | Higher education institutions |
| HEQC | Higher Education Quality Committee |
| HIV | Human Immunodeficiency Virus |
| HSRC | Human Sciences Research Council |
| ICT | Information Communication Technologies |
| IL | Information literacy |
| ILL | Institute for Information Literacy |
| Infolit | Information Literacy Project |
| LIASA | Library and Information Association of South Africa |
| LIRT | Library Instruction Round Table |
| LOEX | Library Orientation Exchange |
| MANTEC | Mangosuthu Technikon |
| NQF | National Qualifications Framework |

| | |
|-------------------------|--|
| NRF | National Research Foundation |
| OPAC | Online Public Access Catalogue |
| REF | Reference |
| SABINET Online | South African Bibliographic Information Network |
| SAe Publications | South African Electronic Publications |
| SALDRU | South African Labour and Development Research Unit |
| SAQA | South African Qualifications Authority |
| SL | Short Loans |
| SPSS | Statistical Package for the Social Sciences |
| SR | Store Room |
| UKS | Universal Knowledge Systems |
| UKZN | University of KwaZulu-Natal |

CHAPTER 1

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

While it was possible for teachers to go through their schooling without ever using a library, today's learner is exposed to a diversity of information, in both print and electronic formats. The information environment is very dynamic, diverse and more challenging than it was in the past (Maepa and Mhinga 2003: 274). Because of the escalating complexity of this environment, individuals are faced with abundant information choices in their studies, in the workplace and in their personal lives. Information is available through libraries, resource centres, special interest organizations, media and the Internet. Increasingly, information comes unfiltered. This raises questions about its authenticity, validity and reliability. In addition, information is available through multiple media, including graphical, aural and textual. These pose new challenges for individuals in evaluating, understanding and using information. The uncertain quality and expanding quantity of information pose important challenges for society. The sheer abundance of information will not in itself create more informed citizenry without a complementary understanding and capacity to use information effectively (Association of College and Research Libraries 2000).

In order to cope with these new challenges in the academic context, there is a need for structured instruction and also for more structured approaches to facilitate the acquisition of information literacy within the curriculum. "What is lacking is what the Australian Association of School Libraries/Association of College and Research Libraries (AASL/ACRL) Blueprint for Collaboration (2000) refers to as the seamless approach to teaching IL competencies, that is continuation of the teaching of these skills throughout the student's life" (George and Kerr 2003: 211).

Tertiary education institutions, nationally and internationally, have recognized the need to equip students with information literacy and lifelong learning skills. The international move towards "lifelong" information literacy is seen in the publication of United Nations guidelines for the training of teachers in the integration of libraries and information skills into the curriculum (Bundy 2001a). Underwood (2000) reports that "Dr Shelley Robinson (Lecturer, Department of Library and Information Studies, University of the West Indies) is of the opinion that information literacy enskilling must start with teachers if there is to be an effective development in the curriculum".

“In Australia there are very few tertiary education institutions which do not include in their mission statements some reference to the fact that they aspire to prepare students for lifelong learning” (Bundy 2001b). During the 1980s the British Library Research and Development Department gave priority to research examining the nature of information skills and illuminating the problems of teaching and learning those skills. In Europe, developments were taking place in the university sector in which the importance of information skills instruction, particularly in relation to libraries, was being increasingly recognized (Bundy 2001b).

In South Africa, Behrens (1992, 1994) and Gevers (1995) endorse the relationship between information literacy and lifelong learning. This endorsement has led to considerable activity related to information literacy education in South African universities (Bundy 2001a). According to De Jager and Nassimbeni (2003a: 109) and (2005: 34):

In South Africa, the South African Qualifications Authority (SAQA 2000) has highlighted the significance of information literacy and lifelong learning. SAQA was established in terms of the National Qualifications Framework Act of 1995. The framework is "the set of principles and guidelines by which records of learner achievement are registered to enable national recognition of acquired skills and knowledge, thereby ensuring an integrated system that encourages lifelong learning"

In overseas countries such as Australia, the United Kingdom and the United States of America, developing lifelong learners is central to the mission of higher education institutions (Association of College and Research Libraries 2000). Thus developments in the concept of lifelong learning, as well as a recognition that one of the functions of education at any level is to allow students to develop skills which can be used beyond a particular discipline, have shaped institutional recognition of the need for information literacy. However, this recognition fails to be translated into resources (Underwood 2000: 5).

1.2 Background to the study: esAL overview

In response to the world's information literacy initiatives, South African teachers and librarians began to understand that, while the literature on information literacy is very relevant to local circumstances, South African students come to the world of information and tertiary education with specific and often severe handicaps that might not be as evident as in other parts of the world (Bell 1990: 24; Choonoo 1999: 10; De Jager and Nassimbeni 2002: 1; Isaac 2002: 2; Krige 2001: 3; Leach 1999: 58; Makhubela 2000: 2; Mpendulo *et al* 1999: 36; De Jager and Nassimbeni 1998: 131; De Jager and Sayed 1998: 197; Sayed and De Jager 1998: 11 and Zondi 1991: 3).

KwaZulu-Natal province is no exception in respect of the above handicaps. Concerned about their users, and in response to a recommendation by the National Department of Education, tertiary institutions in KwaZulu-Natal formed themselves into the Association of Tertiary Institutions in 1995. This was later called the Eastern Seaboard Association of Tertiary Institutions (esATI). esATI is an inter-institutional and a co-operative venture aimed at fostering a coherent system of education in the region. As an esATI project, the Eastern Seaboard Association of Libraries (esAL) group was set to co-ordinate the development of a single library resource base to underpin teaching, learning and research in the province and to contribute, in turn, to the national bibliographic network (Mpendulo *et al* 1999: 37).

According to esAL User Education Task Group (1995) in Mpendulo *et al* (1999: 37) “the first workshop of the esAL User Education Task Group was held in December 1995, under the leadership of Jonathan Gunthorp. The mission statement of this workshop read as follows:

- to enable students and other library users to understand needs, the nature and value of information, the scope of information sources and to equip them to access, evaluate and use resources effectively
- to encourage independent learning by application of information-finding skills across disciplines
- to achieve the above by promoting consistently high-quality user education programmes”.

This workshop was followed by a two-day workshop at the beginning of 1996, at which the competency levels that could be expected of first-year students who had received library instruction were investigated. After a brainstorming session, three members of the group were given the task of writing up the document on unit standards for a first-level user education programme that could be used by all esAL member libraries. After having finished writing the document, the esAL User Education Task Group presented the document on unit standards for first-level user education in member libraries of the esAL and then to the esATI (Mpendulo *et al* 1999: 37-38).

(See Appendix 3).

The esAL User Education Task Group then attempted to get the document accepted by the Committee of Technikon Principals and the Committee of University Principals before submitting it to the South African Qualifications Authority (SAQA). There was no acceptance and recognition of these standards by these bodies (Mpendulo *et al* 1999: 37-38). According to Mpendulo *et al* (1999:

37-38), during the years 1997-1998, the esAL user education project was sidelined due to a number of problems:

- resignation of Jonathon Gunthorp
- libraries pre-occupied with other library duties
- lack of support from the library senior management
- lack of support from the Committee of Technikon and University Principals and SAQA

Apart from the drafting of the User Education Standards, no further developments took place until 1999. At the beginning of that year, librarians in many tertiary institutions urged that user education should become formalized as part of the first-year academic programme, that it should be compulsory and that more time should be allocated to it in the curriculum (Mpendulo *et al* 1999: 37). At the beginning of 2002 the esAL User Education Task Group implemented a user education pilot project study amongst the member institutions with the aim of promoting the usage of the first-level user education standards among member institutions.

The esAL User Education Task Group's training notes (2002) were subdivided into the following topics:

- introduction
- library layout
- organization of information (classification system)
- location and retrieval of information (library catalogues)
- sources of information
- topic analysis
- referencing

It was agreed that the above topics would be covered in the user education training programmes by all member institutions. Through the use of a similar format, Mangosuthu Technikon Library has shown its involvement and commitment to the esAL User Education Task Group. At the beginning of 1998, a Special Project Librarian was employed to convene all library projects, including the esAL User Education Task Group's Pilot Project Study conducted in April 2002 at Mangosuthu Technikon Library. In this pilot project, user education was conducted according to the esAL User Education Task Group's format. It was not the usual *ad hoc* user education sessions which had previously characterized the user education programme. The Mangosuthu Technikon Library orientation and instruction programme ran for two weeks, one hour per session, divided into two

halves. The first 30 minutes were for a guided tour of the library, and the second were for Web-OPAC training. No formal evaluation of the pilot project was carried out.

Subsequent to the pilot project, the library orientation and instruction programme has continued at Mangosuthu Technikon Library. Since 1996, when the researcher was employed by the Library, the library orientation and instruction programmes have normally been conducted at the beginning of each semester, with groups of first-year students only. Each group consists of not more than fifty students. Each session runs for not more than two hours. The first session or phase was used for a guided tour of the library and the second phase was used for Web-Online Public Access Catalogue (Web-OPAC) training. There was no advanced user education programme conducted at a later stage.

During the guided tours of the library, students are taught about library rules and regulations, opening and closing hours and borrowing procedures. They are introduced to different sections of the library, starting at the reference section, where they are shown how to access different sources of information such as dictionaries and encyclopaedias. They are informed about various parts of a book, such as the contents page, index and bibliography, and how to use these sections. They are taught about the significance of using various sources of information for an assignment. Thereafter the tour moves to the open shelves, where they are shown the arrangement of books according to the Dewey Decimal Classification (DDC) numbers, which help the user identify a needed book on the shelf.

Further explanation is given about the circulation or issue desk and students are also instructed about borrowing procedures. The tour then moves to the newspapers desk, photocopying machines, short-loans, periodicals section, video library, word-processing and Internet laboratories. During the Web-OPAC training (the second session) students are given basic computer training such as keyboard training. They are also informed about how to perform on line library catalogue searches using the search options of title, author and subject. They are shown how to renew books on loan online. If time permits, students are shown how to analyse a given topic and do referencing. Students are not assessed in terms of what has been covered in the programme. All of this significant information is condensed into not more than two hours. This confirms Lorenzen's (2002b) and Zondi's (1991: 159) view that librarians are faced with a common problem of having to teach students a great deal in a very short time.

1.3 Research problem

Many national and international studies have agreed on the lack of IL skills that many first-year undergraduate students display when arriving at tertiary institutions (Bundy 2001b; Choonoo 1999: 8; Dike and Amucheazi 2003: 195; Dresang and Kotrla 2003: 55; George and Kerr 2003: 209; Hart 2003b: 80; Maepa and Mhinga 2003: 274; Stilwell and Bell 2003: 334). The problem seems exacerbated in historically disadvantaged South African students by the impact of the system of education of the past, which has denied them equal learning opportunities. Failure to expose learners to libraries before they go to tertiary institutions presents big problems with regard to lack of IL skills, as the learners fail to cope with the complex information environment they are confronted with at the tertiary level (Maepa and Mhinga 2003: 274).

Choonoo (1999: 10) confirms the above factors, when reporting that "Sayed (1998), and Bell's (1990) findings indicated that many students enrolled in higher education in South Africa experience problems in their use of library resources. Reasons cited were partly as a result of low levels of library experience, lack of familiarity with information technology and the use of English as a second language for many". Students entering South African tertiary institutions have varied backgrounds and competencies with regard to the above inadequacies. What is evident is that they do, to a greater or lesser degree, display inadequate levels of IL skills. What is not so evident is the extent and nature of these inadequacies.

1.4 Purpose of the Study

The purpose of the study was to establish the extent and nature of IL inadequacies of first-year Mangosuthu Technikon students, before they, the students, had undergone a library orientation and instruction programme.

1.5 Research objectives

The purpose led to the following specific objectives, which intended to determine the extent and nature of the following:

1. IL skills of first-year students in terms of previous library and computer knowledge at the pre-library orientation and instruction phase.
2. Knowledge of the different sections of a library.
3. Knowledge of the basic purpose of a library catalogue and their ability to identify a Dewey Decimal Classification scheme (DDC) number or call number.
4. Knowledge of printed and electronic information sources and information within these sources.
5. Knowledge of topic analysis and referencing.

6. Knowledge in relation to the evaluation of various sources of information.
7. To make recommendations regarding the Mangosuthu Technikon library's orientation and instruction programme.

1.6 Research questions

The objectives led to the following research questions. What is the extent and nature of:

1. IL skills in terms of previous library and computer usage of first-year students.
2. Knowledge of different sections of the library?
3. Knowledge of the basic purpose of a library catalogue and their ability to identify a DDC number?
4. Knowledge of printed and electronic sources of information and information within those sources?
5. Knowledge of topic analysis and referencing?
6. Knowledge in relation to the evaluation of various sources of information?
7. What recommendations can be made regarding Mangosuthu Technikon library's orientation and instruction programme?

1.7 Significance of the study

For the Mangosuthu Technikon library, the present study would be the first of its kind and the researcher envisages that the findings would contribute to the following:

- the improvement of the library orientation and instruction programme
- the improvement of students' IL skills
- the growing literature on students' IL skills

A few similar studies have been conducted in the South African context by the following researchers: Bell (1990); De Jager and Nassimbeni (1998, 2003a); De Jager and Sayed (1998); Krige (2001), and Zondi (1991). However, none of these studies specifically examined the IL skills that first-year tertiary students brought with them to their studies.

1.8 Definition of terms

This section defines the main terms used in the study. They are in alphabetical order as follows:

1.8.1 Computer literacy

According to ACRL (2000); Bundy (2001a); Childers (2003); Morgan (1998: 1); Petterson (2000); Schaffer (2004) and Smith (2000), computer literacy is the ability to use a computer and its software to accomplish practical tasks. Students should demonstrate proficiency in the use of computers,

learning to use applications such as word processing, spreadsheets, database management programs, electronic mail and packages and applications specific to their fields of study. Many studies agree that computer literacy is one of the literacies or skills required in order to consider a person as information literate (Sayed and De Jager 1998: 6).

1.8.2 First-year undergraduate students

Chamber's 21st century dictionary defines a student as someone who is following a formal course of study, especially in higher or further education. The use of the term first-year undergraduate student in this study refers to a student who is registered for a formal undergraduate course of study at a first-year level at Mangosuthu Technikon (MANTEC).

1.8.3 Information literacy skills

There are many definitions of information literacy but what is common in most of them are the following main factors: an ability to "locate, evaluate and use" efficiently and effectively the needed information (ACRL 2000; Bruce 2002a; Council of Australian University Librarians (CAUL) 2001; Langford 1998; Plotnick 1999; Sayed and De Jager 1998: 6; Underwood 2003). Information literacy is a term of more recent origin, but one that embraces many of the concepts and precepts that are implicit in user education. Information literacy is coupled or associated with terms such as bibliographic literacy, computer literacy and academic literacy (Bell 1990: 3; Barrett and Banks 2003; Bundy 2002; De Jager and Nassimbeni 2002: 2; Langford 1998; Nelson and Stepchysyn 2003; Markley and Stein 1999 and Underwood 2000).

According to the Council of Australian University Librarians (CAUL) (2001), an information literate person should be able to show the following characteristics:

- recognize a need for information
- determine the extent of information needed
- access the needed information efficiently
- evaluate information and its sources
- incorporate selected information into their knowledge base
- use information effectively to accomplish a purpose
- understand economic, legal, social and cultural issues in the use of information
- access and use information ethically and legally
- classify, store, manipulate and redraft information collected or generated
- recognize information literacy as a prerequisite for lifelong learning.

For the purposes of this study, an 'information literate' student is expected to show some of Bloom's lower and higher order skills outlined by Harbele (2001) in De Jager and Nassimbeni (2002: 3), which will be discussed in detail in Chapter 2, under "Benchmarking of Information Literacy skills". These skills are evident in the esAL user education pilot project programme and in the objectives of this study. They are as follows:

- understanding the library layout and its rules and regulations
- understanding basic computer skills such as using the keyboard, which Bell (1989), considers technical
- understanding basic information searching and retrieval skills, such as the purpose of the library catalogue or online public access catalogue (OPAC), Dewey Decimal Classification (DDC) number, printed and electronic information sources and information within those sources, which Bell (1990) considers technical and conceptual
- ability to do topic analysis and referencing skills, which Bell (1990) considers conceptual
- ability to evaluate information resources, which are considered as conceptual skills by the present author.

1.8.4 Library orientation and instruction/bibliographic instruction/user education

Beristain (1985: 12); Brottman and Loe (1990: 3); Freedman and Banty (1982: 2); Kirk (2004); Loe and Elkins (1990: 6) and Lorenzen (2002a) all agree that library instruction is not a recent idea - it has been practised in schools (and other institutions) for many years. Library instruction, instruction in library use, bibliographic instruction and user education all describe the teaching activities of a library. Library orientation commonly refers to any programme or part of a programme whose primary purpose is to acquaint the user with the physical layout, services and policies of a library. Bibliographic instruction is the more intensive process of teaching information resources and library research skills. While bibliographic instruction teaches the use of specific bibliographic tools in a library, it is also sometimes used to describe general library instruction. A well-developed library instruction programme contains both orientation and instruction. The successful programme is based on careful planning prior to presentation. The planning process should include the following aspects:

- assessment of instructional needs
- assessment of current activities
- development of programme goals and instructional objective

- selection of instructional methods
- evaluation of the programme (Loe and Elkins 1990: 6)

These factors underscored the significance of the present study as it intended to assess the level of students' IL skills in order to develop programme goals and objectives relevant to students' needs. For the purposes of this study the terms "bibliographic instruction", "library instruction" and "user education" will be used interchangeably to mean the teaching of library research skills. The aim is to improve students' information literacy skills and prepare them for lifelong learning.

1.8.5 Lifelong learning

The term refers to the ability to apply information skills and to continue on a path of education throughout life (Behrens, Olen and Machet 1999: 19). Lifelong learning by definition is all learning from birth to death - formal, non-formal, vocational and social (Arnesen 2002: 34).

1.9 Mangosuthu Technikon (MANTEC): an overview

Gordon and Stewart (2002: 68) define a technikon as a South African institution of higher education offering professional and vocational programmes. The origin of MANTEC is linked to the former Chief Minister of KwaZulu, who, in 1974, at a meeting with the Chairperson of Anglo American and De Beers Consolidated Mines, first put forward the idea of establishing a tertiary educational institution specializing in technical subjects. Research was commissioned to investigate the potential in South Africa for the training and employment of more technicians. This research was undertaken by the South African Labour and Development Research Unit (SALDRU) of the University of Cape Town (Mangosuthu Technikon Calendar 2004: 9).

As the study showed that there was an immediate need and demand for more technicians, the Anglo American and De Beers Groups' Chairperson decided to provide R5 million to build the necessary facilities for a new technikon. At a later stage, Mobil Oil, AECL, the S.A. Sugar Millers' Association, the Rembrandt and Distillers Corporation, LTA Limited, Sasol and other sponsors provided more funds to establish the Schools for Chemical Engineering, Mechanical Engineering, Electrical Engineering, Civil Engineering and Building, and Business and Secretarial Studies (Mangosuthu Technikon Calendar 2004: 9).

In mid-1977 the go-ahead was given for the project to begin and it was decided by the KwaZulu Cabinet to develop the technikon on a site in Umlazi Township, which, while part of KwaZulu-

Natal, is now also part of the Durban Metropolitan area (Mangosuthu Technikon Calendar 2004: 9). Given the urgency of the demand for technicians and the need to build the institution in an orderly fashion, it was decided to open its doors as soon as possible. Hence preliminary but permanent buildings were designed and built and teaching began in 1979. The technikon moved into its main buildings on their completion in September 1981 (Mangosuthu Technikon Calendar 2004: 9).

1.9.1 Mission statement

As mentioned under 1.1 earlier in this Chapter, internationally there are few tertiary institutions which do not include in their mission statements some reference to the fact that they aspire to prepare students for lifelong learning. MANTEC is no exception and its mission statement reads as follows:

- Mangosuthu Technikon seeks and nurtures students with motivation and ability and prepares them for lifelong learning and leadership in a world that is increasingly dependent on technology (Mangosuthu Technikon Calendar 2004: 11).

1.9.2 Academic programmes

MANTEC offers degrees, diplomas and certificate programmes. It also offers non-diploma courses. Programmes are offered as either year or semester courses. MANTEC consists of three faculties, namely Engineering, Management Sciences and Natural Sciences. The faculty of Engineering is subdivided into five departments and Natural Sciences into eight departments. The academic year is divided into two semesters, each extending over five months. The first semester is from mid-January to mid-June and the second semester is from mid-July to mid-December. It is a requirement at this technikon that all first-year undergraduate students attend a two-hour library orientation and instruction programme which is conducted by the MANTEC library staff, before they are registered as library members (Mangosuthu Technikon Calendar 2004: 2, 12, 54, 63).

1.10 Mangosuthu Technikon Library: an overview

MANTEC Library is one of a number of academic libraries in the province of KwaZulu-Natal. It serves as a major information resource for its technikon community and stakeholders. The mission of the library is the transmission of information with the aim of fulfilling the vision, mission, core and underlying values of the technikon.

1.10.1 Library staff

At present, the library staff consists of twenty-four members, in professional, semi-professional and non-professional categories. Much attention has been given to human resources empowerment

acquired through attendance of various workshops, which were organized and funded by the European Union (EU) project. Some of the workshops which were conducted over the past five years are entitled "Project Management", "Team Management" and "Mentoring". They have had an impact on individual and team development.

1.10.2 Library collection

The collection of this library includes books, periodicals, electronic and multi-media resources. Most of these materials are listed in the library's electronic catalogue. However, some journal and video titles do not appear. During the time of writing, library staff were still entering bibliographic details into the library's electronic catalogue. The collection is divided into various sections. They are:

i) General lending, reference and short-loans collection

The library collection comprises 58 500 books. In the year 2001 the EU donated 3000 books to the library. These books were part of the EU project and are inclusive in the grand total of 58 500. The collection is housed at the circulation section. EU donations can be identified by means of a green symbol on the spine of the book and by means of a symbol EU before the Dewey Decimal Number (DDC) on the library's electronic catalogue, whilst the Reference collection is indicated by means of REF and Short-loans by means of SL. The aim of the EU project was to balance the imbalances regarding materials and personnel skills resources between the higher education institutions that had different educational backgrounds.

ii) Store-room collection

This is the collection which was weeded from the general lending collection because of under-utilization. These materials are identified by means of a blue label on the spine of the book and by means of a symbol SR before the Dewey Decimal Number (DDC) on the library's electronic catalogue.

iii) Periodicals collection

The library subscribes to 105 journal titles in print. It also subscribes to SABINET and EBSCOHost. More than 300 journal titles are available in this library, but not all of them appear on the library's electronic catalogue since the library staff is still inputting bibliographic data in the library's electronic catalogue.

iv) Video library collection

The video library collection consists of 1828 video titles, of which only 196 appear in the online Web-OPAC. There are four movie boxes with inbuilt video playing machines and earphones. There is also one television with a big screen, which students can use as a group. The equipment is used to watch educational videos and news. Students are prohibited from using video machines for non-educational purposes.

1.10.3 Electronic facilities

There are sixteen computers, allocated to library staff members. The number of computers at the library's access points, where library materials are issued and returned is as follows:

- three at the general lending or circulation desk and one Dot Matrix printer
- one at the short loan and one Dot Matrix printer
- one at the video library
- the general lending or circulation section has nine computers and three terminals. There is also an Internet Laboratory with 47 computers. Forty of them were donated by the EU and the remaining seven by the Mellon Foundation.

The EU and Mellon Foundation have enriched the library with a number of multi-media resources and computers. The Internet laboratory provides access to Internet and other library databases, such as SABINET Online, SAE Publications, National Research Foundation (NRF) and EBSCOHost, some of which supply full-text journal articles. The word processing laboratory offers Word Perfect, MS Word, MS Excel and PowerPoint programs. During the user education or library orientation and instruction programme students are motivated to visit the laboratories to improve their computer literacy skills.

Identification cards are needed should a student require to use the Internet laboratory for an hour. The hour can be extended provided the laboratory is not in demand. It is only used for educational purposes. Users are allowed fifteen minutes for online newspaper reading and e-mailing facility usage. Printing is charged at R2 per page. The student brings along his/her printing papers. In the Internet lab, one computer is available for compact disk read only memory (CD-ROM) usage. It can only be used by arrangement and under the supervisor's guidance. Students are penalized for any misconduct such as the using of cell phones and the accessing of "illegal" websites. Defaulters can be barred from using the Internet and word processing laboratories.

1.10.4 Library's integrated system

The library uses an integrated system called URICA. The advantage of the system is that it can also be accessible through the Internet and allows users to renew books wherever they are, as long as there is an Internet connection.

1.10.5 Library services

The services of this library are:

i) Customer services and library services to users

This section is responsible for the duties related to the use and circulation of electronic and non-electronic library materials at various library sections such as General Lending, Short Loan, Periodicals, Reference, Inter-Library-Loans, Video Library, Internet Laboratory and Word Processing sections. The Reference or Information Desk is usually available temporarily during busy periods at the beginning of each semester (January and July of each year). Otherwise enquiries are made at the Circulation Desk or Circulation Librarian's office.

ii) Membership

Membership commences after library registration and is free to all registered students and staff members. Staff remains library members until resignation. For semester students membership is valid for one academic semester and for one academic year for annual students and external members. All external members are required to re-register at the beginning of each academic year. A non-refundable fee of R100.00 is charged to external members who wish to borrow materials for home use. An additional fee of R15.00 is levied for an identity card (Mangosuthu Technikon Calendar 2004: 82-83).

iii) Lending

Library users must produce their identity cards when borrowing library materials. Users may borrow items only from the general lending collection. A special arrangement can be made should items be borrowed from the periodicals section. At the short-loan section items can be borrowed for one hour or overnight. An hour can be extended if the item borrowed is not on demand. There is a penalty accrued to defaulters. Staff members are allowed to borrow 15 books for a period of 60 days. Students are allowed five books for 14 days and external members are allowed two books for one week (Mangosuthu Technikon Calendar 2004: 83).

iv) Information and research services

This section consists of subject specialists who attend to users who are in need of information for teaching, learning and research purposes. They are also involved in many other library duties, such as collection development, the evaluation of library materials and the teaching of library research skills.

v) Resource management services

This section is at the heart of the library, where library materials are acquired. Library materials are ordered and processed in this section. All other technical duties take place in this section.

vi) Management of the library services

Management is made up of the Director, Deputy Director and the Office Manager. It is the steering committee of the library. In this section library users pay their penalties for stolen, damaged and overdue books.

vii) Reference desk

It was explained under "Customer services" that this desk is available only at the beginning of each semester.

viii) Subject librarians

This service is explained under "information and research services" in section 1.10.5 (iv)

ix) Inter-library loans services

This type of service is offered to staff members and undergraduate and postgraduate students. It is the user's responsibility to first check the library catalogue and electronic databases to determine the availability of an item, before an external request is made. Items borrowed on inter-library loans are subjected to the cost and loan regulations governing the inter-library loans network (Mangosuthu Technikon Calendar 2004: 85).

x) Discussion rooms

There are two discussion rooms available for student groups of not more than twenty students. A student can use his/her identification card to make a booking with the responsible staff members or at the issue desk.

xi) Library orientation and instruction or user education programme

The programme is explained in the "Background to the study" section 1.2 of this chapter.

1.11 Summary

In this introductory chapter, the background to the study, research problem, purpose of the study, research objectives and questions, significance of the study, definition of terms and, finally, a brief historical and present overview of MANTEC and its Library was given.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter will examine the assessment of information literacy skills in higher education libraries with specific reference to the MANTEC Library. Many librarians agree that library or bibliographic instruction and user education produce an information literate user and lifelong learner (De Jager and Nassimbeni 2002: 2-3). Prior to the discussion of the "why, what and how" of IL assessment, it would be essential to look at information literacy origins globally and within the South African context.

2.2 Information literacy and its origins

In recent times IL has become a buzzword and therefore it is essential to examine its origins globally and within the South African context.

2.2.1 Global view

The development of the concept of IL can be traced to the establishment of the American Library Association (ALA) Presidential Committee on Information Literacy, whose final report outlined the importance of the concept (Plotnick 1999). The information literacy movement grew out of a concern for the potential role of libraries and librarians in education, in both school and tertiary settings. This concern first emerged in the late 1960s, in relation to school settings, alongside early developments in computer-based information technology. Paul Zurkowski first used the term "information literacy" in a 1974 report to the US National Commission on Libraries and Information Science, titled "The information service environment, relationships and priorities". According to Bundy (2002) Zurkowski advocated the establishment of a national programme aimed at achieving information literacy within a ten-year time-frame. He described information literacy in terms of an individual's capacity to use information tools and primary sources, to address problems. Rapid and widespread acceptance of the concept of information literacy after the release of the American Library Association's Final Report (1989) has led to renewed emphasis on information literacy in all education sectors (Bundy 2002).

Another view is that information literacy emerged in the 1970s spurred on by, *inter alia*, the advent of new technologies and consequently signalled the need for libraries and librarians to redefine their roles in this context. Since the 1970s the importance of information literacy has been represented by librarians committed to serving the information society and bridging the gap between the information rich and the information poor. In the late 1980s and 1990s, interest in information literacy mushroomed on all continents. Today the meaning of information literacy has broadened considerably and the term represents a convergence of interests in the need to educate those who must live and work in an information society (Bundy 2001a). These factors underscore the significance of inculcating IL skills in higher education institution students as they are now being groomed and prepared for their work and lifelong experiences, as De Jager and Nassimbeni (1998: 138) and Underwood (2003) have concurred. This is imperative, as some of them have not had this opportunity during their primary and high school education.

2.2.2 South African view

The early workers in IL in South Africa are Senn Breivik and Sandra Olen. The recognition of the importance of IL in South Africa is linked to the 1992 "Senn Breivik Report" (Underwood, Nassimbeni and De Jager 2002). The report addressed the need for the facilitation of co-operative academic planning within the tertiary education institutions of the Western Cape of South Africa, in order to achieve transformation with limited economic resources. Weaknesses in the access to information and the management of information resources were identified as problems for which a co-operative solution would be viable. IL was identified as a key part of the solution. The report also indicated that IL is inherent in the service role played by higher education to the regional community, including the granting of access to its resources by the community (Underwood, Nassimbeni and De Jager 2002). The development of the concept of IL was based on various factors such as:

- to help students acquire skills in using various sources of information, especially computer
- to bridge the gap between the information "haves" and "have nots" as Bundy (2001a) stated
- institutionalizing of IL assessment programmes can help libraries know whether or not they are handling these problems effectively and efficiently.

Having highlighted the significance of IL assessment programmes in libraries, it is imperative to examine the why, what and how of assessment. These basic interrogatives will now be discussed

2.3 The need for assessment of IL skills

It is only during the latter half of the 20th century that libraries have come to realize the need for assessment programmes. One agency in the Middle States Association of Colleges in the United States of America (USA) actually mandates that the ability to retrieve and use information be assessed. The need for IL has come to the forefront as technology has made information a commodity in the world (Pausch and Popp 1997). When assessment is done, depends on the purpose of assessment. The concern highlighted by the South African Government in relation to students' IL skills as they leave tertiary institutions challenges libraries to assess the level of the student as she/he arrives at the tertiary institution and to weigh the impact, if any, as she/he leaves. This indicates that assessment should be done at a pre and post library orientation and instruction phase

Assessment in general has become a much-discussed topic, especially in higher education institutions today, resulting in a plethora of books, conferences, symposiums, online articles and abstracts and journal articles. It is a process of determining how well an educational system functions and thus improves parts of it as necessary. The concern is on "outcomes assessment", which attempts to answer the following questions:

- What should students learn?
- How well are they learning it?
- How does the institution know? (Pausch and Popp 1997)

According to the Assessment Resource Center (2004); Blixrud (2003: 1); O'Connor *et al* (2001:1); and Pausch and Popp (1997), IL assessment offers the opportunity to:

- analyze the outcomes of specific levels of information literacy and verify if student performance matches expectations and standards
- establish a framework to meet the instructional needs of students
- provide a beginning point to ascertain the programme's effectiveness and guide the direction for future instruction
- identify how student performance might be improved.

In South Africa the push for the implementation of the IL assessment programmes in libraries is from the Higher Education Quality Committee (HEQC). The chair of this Committee publicly announced this need at the 7th Annual Symposium on Quality Assurance, held at the University of Stellenbosch on 28 and 29 October 2004. The concern for the Council on Higher Education. Higher Education Quality Committee (2001) as highlighted by De Jager and Nassimbeni (2005: 33) is to "ensure that institutions effectively and efficiently deliver education, training, research and

community service which are of high quality". The keynote address of the Symposium was mainly concerned with the outcomes assessment of students' IL skills, using Bloom's Taxonomy of Educational Objectives of both the lower and higher order skills. This underlines the significance of the similar assessment tool used for the present study.

According to the South African Qualifications Authority (SAQA) in De Jager and Nassimbeni (2003a: 109), the outcomes reflected in the National Qualifications Framework (NQF), and expected from graduates of today, are as follows:

- identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made;
- work effectively with others as a member of a team, group, organization, community;
- organize and manage oneself and one's activities responsibly and effectively;
- collect, analyze, organize and critically evaluate information;
- communicate effectively, using visual, mathematical and/or language skills in the modes of oral and/or written presentation;
- use science and technology effectively and critically, showing responsibility towards the environment and health of others;
- demonstrate an understanding of the world as a set of related systems by recognizing that problem-solving contexts do not exist in isolation (De Jager and Nassimbeni 2003a: 109).

The above-mentioned factors are evident in the definition of information literacy, three models of IL and two sets of standards, which will be discussed in the following section. Students need to be able to locate, evaluate and use information effectively and efficiently. IL has become a much-debated topic. It has become one of the essential elements of higher education, especially undergraduate education (De Jager and Nassimbeni 2003a: 3).

As stated by De Jager and Nassimbeni (2003a) these factors indicate:

- pressure on higher education to demonstrate effectiveness in terms of student performance
- expectations of greater accountability for student learning outcomes
- need for assessment methodologies based on ability and performance.

These are factors that underscore the significance of this study, as it seeks to assess the level of IL skills first-year students bring with them to tertiary institutions. Apparently the need for accountability in relation to students' learning outcomes provides an answer to the "why" of assessment. The next section will look at the type of standards and outcomes to be assessed.

2.4 Type of standards needed and type of outcomes to assess

The Educational Testing Services (2004); De Jager and Nassimbeni (2003a: 3) and Pausch and Popp (1997) agree that IL standards help provide a framework for curriculum design and for assessing performance and achievement. The following grouping of standards can help the librarian know what to assess:

- content standards help outline what students should know and be able to do (also called students' outcomes such as the definition of IL expects a student to be able to locate, evaluate and use effectively and efficiently the needed information (ACRL 2000).
- performance standards indicate how they will show that they are meeting a standard. The outcomes for the two sets of standards provide competencies expected from an IL student.
- proficiency standards or skills assessments specify how well they should perform in the classroom, in the library, at home and during lifetime experiences. This type of assessment uses both cognitive and affective skills dimensions. With the Educational Training Services and the Graduate Record Examination Board report, there is mention of the use of information and communication technology (ICT) literacy assessment to measure the extent to which students demonstrate high-order thinking skills and proficiencies through the use of digital technology, communication tools and networks to solve information problems.

The three groupings of standards are evident in the following three models of information literacy and two sets of standards:

2.4.1 Eisenberg and Berkowitz's Big6 information skills

The information skills models developed in the 1980s provide steps that students should negotiate when solving an information problem. Eisenberg and Berkowitz's (1990) Big6 steps are: task definition, creating information-seeking strategies, locating and accessing information, using information, synthesizing information and evaluating information. Learning to be information literate in this model involves practising the steps when engaged in a learning task (Bruce 2002a). Langford (1998) affirms Bruce's (2002a) view that information literacy is neither library skills, computer skills nor information problem-solving skills, but all of Eisenberg and Berkowitz's steps are necessary enhancers of IL. One needs to be able to locate and access information in all its forms, or to solve information problems through enlisting a set of behaviours that develop competencies in the techniques and skills necessary to survive in the information age (Langford 1998).

2.4.2 Doyle's attributes

According to Langford (1998), Doyle's view is that IL involves critical thinking skills, that is knowing how to learn. Doyle's (1993) attributes of the information literate person are the outcome of

a Delphi study, in which a group of experts discussed and agreed upon characteristics associated with information literacy. In this model, the information literate person is one who recognizes that accurate and complete information is the basis for intelligent decision-making, recognizes the need for information, formulates questions based on information needs, identifies potential sources of information, develops successful search strategies, accesses sources of information, evaluates information, organizes information, integrates new information into an existing body of knowledge and uses information in critical thinking and problem-solving. Learning to be information literate in this model involves acquiring and demonstrating these attributes (Bruce 2002a).

2.4.3 Bruce's seven faces of information literacy

Bruce endorses Doyle's list of attributes of the information-literate individual by describing these attributes as behaviours (Langford 1998). This model describes seven different ways of seeing and experiencing information use. The seven facets are: information technology for retrieval and communication, information sources, information process, information control, knowledge construction, knowledge extension and wisdom. Many of these ways of seeing IL involve recognizing interdependency between groups and individuals in the IL experience. Learning to be information literate, in this model, involves becoming aware of different ways of experiencing information use through engaging in relevant practices and reflection (Bruce 2002a).

2.4.4 ALA and CAUL's information literacy standards for student learning

Bruce (2002b) points out that:

The American Library Association (ALA) IL standards for schools (ALA and AECT, 1998) and higher education (ALA, 2000) were devised through extensive consultation among educators and information professionals. These standards comprised grouped lists of desirable learning outcomes and processes for individuals. The standards for schools are divided into three categories: IL, independent learning and social responsibility. Models and standards are used to communicate the character of information literacy, for curriculum design and evaluation, for staff development and for assessing students. They reveal the richness of the IL experience as it is understood by educators that have been working with the concept.

Standards provide a framework for students' interaction with information in their environment. They also help stimulate awareness of the need for a meta-cognitive approach to learning, which involves the use of skills like recognition of need, gathering, analyzing and using information. (Council of Australian University Librarians CAUL, 2001).

The five standards of the Association of College and Research Libraries (ACRL), and the seven for the CAUL and their outcomes, will be briefly discussed, as reported by De Jager and Nassimbeni (2003a: 108-114) and CAUL (2001).

Standard One

The information literate student determines the nature and extent of information needed (Both ACRL and CAUL).

Outcomes: The information literate student:

- seeks assistance with an information need
- selects most suitable resources for information on a specific topic and formulates a research question
- distinguishes popular from scholarly periodicals
- distinguishes primary from secondary sources

Standard Two

The information literate student accesses information effectively and efficiently (Both ACRL and CAUL).

Outcomes: The information literate student:

- knows the scope and purpose of information resources
- evaluates resources
- chooses appropriate keywords and Boolean operators
- formulates a search strategy
- knows why strategies could fail

Standard Three

The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system (Both ACRL and CAUL).

Outcomes: The information literate student:

- distinguishes among different sources of information
- uses information critically
- distinguishes among different types of resources
- evaluates and compares points of view

Standard Four

The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose (ACRL). The information literate student classifies, stores, manipulates and redrafts information (CAUL).

Outcomes: The information literate student:

- integrates new and prior information into a new product

Standard Five (and Six)

The information literate student expands, reframes or creates new knowledge (CAUL's Standard Five). The information literate student understands many of the ethical, legal and socio-economic issues surrounding information and information technology (ACRL's Standard Five and CAUL's Standard Six)

Outcomes: The information literate student:

- is aware of copyright constraints
- recognizes plagiarism
- recognizes parts of citations
- is aware of plagiarism

Standard Seven (CAUL)

The information literate student recognizes that lifelong learning and participative citizenship require information literacy .

Outcomes: The information literate student:

- uses information sources in the public domain
- participates in democratic processes

In relation to "Standard Seven", one individual commented at the 2003 Library and Information Association of South Africa (LIASA) information literacy pre-conference workshop that:

It is out of context for South Africa, especially with reference to the digital divide. South Africa is a diverse society, with concepts such as indigenous knowledge systems containing ancient knowledge, which might be against other people's values and beliefs. This has to be given more attention and evaluated according to information technology standards of South Africa (De Jager and Nassimbeni 2003b: 8).

he issue of context is a critical one and one which does need to be taken into consideration when assessing, deciding on, and implementing IL standards and outcomes.

According to CAUL (2001) "It is important to note that in the process of implementing the standards, recognition should be made that different levels of thinking skills are associated with various learning outcomes." All students are expected to demonstrate all of the standards, but not everyone will demonstrate them to the same level (CAUL 2001; Choonoo 1999: 8). It is due to various educational and individual differences that various libraries will tend to use different assessment procedures. The forthcoming section will look at how students can be assessed using various approaches and methods of assessment.

2.5 Approaches and methods of assessment of IL skills

Much has been published on the assessment of IL skills. Sufficient evidence about the availability of any standardized methods for assessing students' IL skills, that can be applied across institutions is lacking. Surveys published since 1980 indicate an increase in the number of institutions implementing evaluation as part of their bibliographic instruction programmes. Yet there is a dearth of documented studies giving the results of the assessment of IL competencies. The literature reveals the lack of effort in the formal assessment of the effectiveness of IL programmes. It also reveals few rigorous efforts to evaluate the teaching of IL concepts and skills. Yet the need to assess IL competencies is becoming increasingly important (Blixrud 2003: 1; De Jager and Nassimbeni 2002: 8; Harbele 2002; Kirk 2004; O'Connor *et al* 2001: 163-165; Pausch and Popp 1997; Rader 2002; Riddle *et al* 2000; Underwood 2000).

Review of the recent literature on assessment of IL skills reveals that an evaluation of any kind is more likely to be informal in nature, because formal evaluative methodologies are not applied to any significant degree. Where formal evaluation is being applied, little full-programme assessment is being done (O'Connor *et al* 2001: 164; Pausch and Popp 1997). Researchers agree that barriers that have caused librarians to neglect the measurement of IL skills are due to:

- lack of an adequate, well-developed and standardized survey instrument
- lack of unbiased, valid and reliable assessment tests
- literature prior to 1990s cites the absence of "generally accepted criteria" or clearly defined IL goals and objectives
- shortage of staff and time and increased workloads

- limited financial resources, budget cuts (Bell 1990: 10; O'Connor *et al* 2001: 164-167; Smith 2000).

In spite of these barriers, approaches and methods that can be used to assess IL skills will be examined.

2.5.1 Formative, summative, quantitative and qualitative approaches

According to Pausch and Popp (1997), assessment can be formative or summative, qualitative or quantitative:

- formative assessment deals with programmes as they are functioning and tries to foster ongoing improvement for the provider and receiver of the instruction
- summative assessment deals with the after effects of the instruction
- quantitative assessment deals with test scores and numbers of graduates
- qualitative assessment focuses on the opinions of learners and on examples and descriptions of what they have learned. They test for understanding, rather than memorization, and "deep" learning rather than "surface" learning. Using qualitative methods, assessment can be "developmental", judging where students are in their learning. Assessing ways that foster "deep" learning is important because research shows that students learn what they expect will be assessed.

Researchers like De Jager and Nassimbeni (2003a: 1); Maughan (2001); O' Connor *et al* (2001: 167, 171) and Pausch and Popp (1997) point out that there are a variety of methods that can be used to assess IL skills:

- self-assessment in which learners perform a task and judge themselves how well they performed
- focus groups in which learners are asked about learning, attitudes and methods of teaching used
- standardized tests, which can be locally developed. They can be written or done orally
- performance appraisals, simulations and other competency-based measures
- self-reports, satisfaction and third-party reports surveys, exit interviews and reports from employers
- behavioural observations
- portfolios of students' work. These can include papers, projects an assignments
- classroom assessments
- case studies

- learning logs or research diaries and
- courses in the major subject, where students synthesize and apply what they know.

2.5.2 Nine principles of good practice of assessment

Pausch and Popp (1997) discussed nine principles of good practice developed by the American Association for Higher Education, for assessing student learning. They are as follows:

1. The assessment of student learning begins with educational values.
2. Assessment is most effective when it reflects an understanding of learning as multidimensional, integrated and revealed in performance over time.
3. Assessment works best when the programmes it seeks to improve have clear, explicitly stated purposes.
4. Assessment requires attention to outcomes but also and equally to the experiences that lead to those outcomes.
5. Assessment works best when it is ongoing, not episodic.
6. Assessment fosters wider improvement when representatives from across the educational community are involved.
7. Assessment makes a difference when it begins with issues of use and illuminates questions that people really care about.
8. Assessment is most likely to lead to improvement when it is part of a larger set of conditions that promote change.
9. Through assessment educators meet responsibilities to students.

The 10th principle proposed by Banta, in Pausch and Popp (1997), is "assessment is most effective when undertaken in an environment that is receptive, supportive and enabling". Although the literature studied by the present author indicated a dearth of standardized methods for assessing IL skills, the above principles provide a fundamental framework for an IL assessment strategy. The emphasis is on educational goals and outcomes and improvement of the latter as is deemed necessary.

2.6 Benchmarking IL competencies

According to De Jager and Nassimbeni (2003a: 109):

The practice of benchmarking, a strategic assessment tool common in the business environment, essentially consists of comparing one's own practice with best practice in order to ensure continuous improvement. It involves the establishing of a standard of excellence against which similar practices or procedures may be measured. An essential requirement for a

successful benchmarking enterprise is a deep understanding of the area to be benchmarked and for it to be broken down into its constituent and measurable elements.

The purpose of benchmarking in terms of, and for the purposes of the present study, is to improve the MANTEC Library's orientation and instruction programme in order to attain excellence.

During the 1990s, at least partly in response to rapid technological developments, the information and library profession began to note the increasing importance of IL and recognized the need for standards and benchmarks with which to measure competencies. In the year 2000, the Association of College and Research Libraries (ACRL) published a set of five 'Information Literacy Competency Standards' for the United States of America. Similarly, the Standing Council of National and University Libraries (SCONUL) in the United Kingdom published a Seven Pillars Model of Information Literacy, which details the seven major information skills required by all students (1999). The Council of Australian University Librarians published their own 'information literacy standards' in 2001 (De Jager and Nassimbeni 2003a: 108).

The present researcher's view is that these standards can be defined as content standards. They provide a trend in relation to what an IL student should know and be able to do. ALA and CAUL's standards are evident throughout Bloom's Taxonomy of Educational Objectives, used in the present study for the assessment of students' IL skills. Bloom's lower and higher order skills are used for this study to measure MANTEC students' IL skills in relation to ALA and CAUL's internationally set standards. The assumption, however, is that this benchmarking system might work to their disadvantage, like the definition of IL. According to Sayed and De Jager (1998: 7), the IL definition does not pay sufficient attention to certain issues which are crucial in developing a fuller understanding of the concept in the South African context. Examples of these issues include giving attention to the context in which learning and teaching takes place, access to the relevant information technology, and prior learning. The purpose of the study was thus to assess the nature and extent of MANTEC first-year students' IL inadequacies bearing in mind the above issues.

2.6.1 The importance of benchmarking at MANTEC

In this new South African system of education, which places emphasis on outcomes and accountability, benchmarking is imperative, especially in historically disadvantaged institutions, for the following reasons:

- First-year students are from diverse educational, socio-economic, cultural, language and life experience backgrounds that have not adequately prepared them for tertiary education (Cliff *et al*, 2004).
- The greatest proportion of black students come from under-resourced educational backgrounds, with inappropriate approaches to learning and teaching or with socio-economic inadequacies (Bell 1990: 4; Cliff *et al* 2004; Zondi 1991: 3).
- Many black students appear to have greater difficulty with library use than their white counterparts due to problems of language (English is not their mother tongue) and an Apartheid education which has denied them equal opportunities in this sphere (Bell 1990: 2; De Jager and Sayed 1998: 203; Zondi 1991: 3).

The above factors underscore the significance of benchmarking of IL competencies in HDIs. Whatever benchmarks are decided on they would need to take into consideration the reasons above. Failure to do so would possibly result in information literacy competencies for students which are inappropriate and misleading. At a more broader level De Jager and Nassimbeni (2002: 3) point out that very little has been done that shows objectively and measurably how library or bibliographic instruction or user education may lead to an information literate and lifelong learner. It is in the context of the above that the present study needs to be seen.

2.6.2 The "how" of benchmarking at MANTEC

The new South African system of education places emphasis on quality outcomes and benchmarking is thus imperative. The present researcher used a benchmarking tool based on Bloom's Taxonomy of low and high order skills of evaluation, together with esAL User Education Pilot Project Task Group training notes, to assess information literacy skills of MANTEC first-year students. The research objective as listed in Chapter 1 highlight the information literacy areas and competencies which were examined and which provided the broad basis for the benchmarking tool used in the study.

De Jager and Nassimbeni (2002: 3) are of the opinion that:

A list of information literacy competencies based on the benchmarking breakdown by Godwin (2001) would be useful for assessing information literacy skills. These competencies are consistent with other established standards for information literacy, such as those published by the Australian Library Association. A study of these standards corroborated that the selected competencies could

indeed be regarded as the basic yet most essential component parts of the construct of information literacy.

According to Harbele (2002), the construct of both lower and higher order skills, originally analyzed in 'Bloom's Taxonomy of Educational Objectives', require students to first master the cognitive skills of the lower levels of each knowledge domain before the higher order skills may be mastered. Bloom's Taxonomy of Educational Objectives was further developed for the analysis of library and information skills by making provision for the progression from lower order to higher order skills in three graduated steps: from orientation to interaction and then to internalization. The basic abilities and graduated skills were enumerated as follows:

Orientation

1. To recognize a need for information
2. To define a topic as a preliminary step in the search for information.
3. To select the main concept in a topic
4. To identify keywords to search for information on a topic
5. To understand that a range of information sources is needed to research a topic

Interaction

6. To know that general reference sources may be used to gain a broad understanding of a topic
7. To know that different kinds of information will be found in different kinds of sources
8. To be able to choose the most appropriate resource both print and electronic
9. To be able to distinguish between catalogues, indexes, online databases and web resources
10. To be able to locate and access information from different resources
11. To know how to formulate search strategies
12. To be able to construct search statements
13. To use Boolean logic
14. To know how search engines work
15. To quote and cite, correctly, the work of others
16. To know about issues such as copyright and plagiarism
17. To know about issues such as currency, bias and authority

Internalization

18. To be able to compare and evaluate information from different sources
19. To be able to organize, use and communicate information
20. To produce and present an organized piece of work
21. To synthesize and build new knowledge, based upon existing information

In the list above, one to five are the low order orientation skills, which enable students to situate themselves in the world of information; six to seventeen are the intermediate level skills that demand interaction with information resources and could vary significantly from discipline to discipline. The high order skills, abilities and knowledge, that is eighteen to twenty-one, require internalization of what has been learnt and will not be adequately internalized without a firm grasp of the preceding steps (De Jager and Nassimbeni 2002: 3-4).

It is the present author's view that not all of the above abilities and skills can be adequately taught in the library orientation and instruction programme currently offered at MANTEC library (given, for example, severe time constraints and students' various educational backgrounds). However, what is covered within an hour session, as explained in 'Background to the study' section of Chapter 1, should provide an information literacy base which can be further developed. The discussions and findings of the study in the following chapters will indicate whether or not an hour-long session is sufficient to provide an information literacy base that can be further developed.

2.7 Summary

In Chapter 2, information literacy and its origins were discussed. The bulk of the chapter described various aspects relating to the assessment of IL skills. The chapter concluded with an examination of the benchmarking of IL competencies, particularly as it related to the MANTEC Library.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

The purpose of the present study was to establish the extent and nature of IL skills of first-year students at a pre-library orientation and instruction phase. Many librarians agree that the desired outcome of library instruction or user education is the information literate and lifelong learner. The literature reviewed in Chapter 2 provided no evidence concerning the availability of any standardized methods for assessing students' IL skills that can be applied across institutions. According to surveys published after 1980, there is an increase in the number of institutions implementing evaluation as part of their library or bibliographic instruction programmes, but there is still a dearth of documented studies giving the results of the assessments of the effectiveness of the programmes (Blixrud 2003: 1; De Jager and Nassimbeni 2002: 8 and Underwood 2000)

Despite the dearth of assessment methods, Bloom's Taxonomy of Educational Objectives of the lower and higher order skills of assessment, discussed in Chapter 2, was used for the evaluation of students' IL skills. It was decided that the survey (descriptive) method would be suitable for the present investigation. This is an appropriate method for exploring a population too large to observe (Babbie and Mouton 2001: 232; Wegner 2000: 73). The survey method, utilizing a questionnaire data collection procedure, was used by De Jager and Nassimbeni (2003a: 108, 111) in their study, which explored the current status of IL tuition in South African tertiary institutions. Responses provided evidence of a need for assessment of IL courses (De Jager and Nassimbeni 2003a: 108). This factor underscores the importance of the method used in the present study. The following sub-topic substantiates why the descriptive survey method was considered appropriate and essential for this study.

3.2 Why the descriptive survey method?

According to Frankfort-Nachmias and Nachmias (1992: 243) and Wegner (2000: 73), the survey method is one of the most important primary data collection methods. Babbie and Mouton (2001: 232) and Singleton and Straits (1999: 274) state that survey research is the best method for the collection of original data for describing a population too large to observe directly. Babbie and Mouton (2001: 232) and Wegner (2000: 73) agree that surveys can also record primary data on the attitudes, opinions, motives, intentions and interests of a large population. Surveys may also be used for descriptive, explanatory and exploratory purposes (Babbie and Mouton 2001: 203).

In the present study the survey method was appropriate for collecting primary data concerning first-year students' IL skills at a pre-library orientation and instruction phase. Busha and Harter (1980: 165) suggest that in library surveys three broad categories of information are normally gathered:

- existing library conditions
- comparisons between present conditions and desired standards or goals
- suggestions for the improvement of existing conditions (Busha and Harter 1980: 165).

In applying the above to the present study it is evident that information relating to existing "conditions" of students information literacy skills was gathered; an element of comparability was inherent in the study; and suggestions for improvement of skills was an important consideration. The survey was thus an appropriate method for data collection in the present study.

3.3 Data collection methods

The literature revealed a number of collection procedures or methods that can be used, such as self-assessment, standardized tests, behavioural observations, classroom assessment and case studies. Researchers have used various procedures. For example, Bell (1990) and Choonoo (1999) used the pre- and post-test questionnaire method of evaluation; De Jager and Nassimbeni (1998) used a follow-up evaluative method to assess the impact of an IL training programme on undergraduate students at UCT; Zondi (1991) used a correlation method in which students were expected to answer questions in relation to library usage. The aim in the latter study was to investigate if a relationship existed between first-year students' level of competence and the resources they use in the completion of their academic tasks. Internationally, Markley and Stein (1999) used the pre and post-test questionnaire method to determine the effectiveness of their collaborative IL programme, called QUEST, with Villanova University (USA) undergraduate students. At the University of Waikato (New Zealand), Graham and Parsons (2003) used an in-house bibliographic assessment test to assess students' IL skills.

A self-administered questionnaire was chosen as the data-gathering procedure because of its advantages which, as far as the author is concerned, outnumber the disadvantages in this particular study. The advantages are as follows:

- Questionnaires are less expensive than other methods.
- They produce quick results and thus save time.
- They offer greater assurance of anonymity.
- They offer fewer opportunities for bias or errors caused by the presence or attitude of the interviewer.

The sample chosen depended on the availability of first-year students and the co-operation of the various team leaders. The researcher thus had little control over which, and how many, first year students would be included - hence the type of sampling procedure adopted. The limiting factors that prevailed at the time the sample and its size was determined (during the administration of the questionnaires) are explained in more detail in section 3.7 below.

According to Babbie and Mouton (2001: 167); Bless and Higson-Smith (1995: 94-5); Breakwell *et al* (2000: 99) and Wegner (2000: 113) generalization based on such samples are extremely risky. Although non-probability samples are less representative than probability samples (Babbie and Mouton 2001: 167; Bless and Higson-Smith 1995: 94-5) it is believed that the sample of 170 first year students in this study was sufficiently representative of first-year students at Mangosuthu Technikon and that the findings could thus, to some extent, be generalised to the first year undergraduate student population at the Technikon as a whole.

3.5 Questionnaire design and structure

The self-administered questionnaire used in the study consisted of both open- and closed-ended questions. Cognizance was taken of the rule of thumb stated by Cohen, Manion and Morrison (2003:247) that “the larger the size of the sample, the more structured, closed and numerical the questionnaire may have to be ...” As a consequence closed questions predominated in the questionnaire (See **Appendix 2**). As such, and while open-ended questions were asked, the questionnaire could be referred to as being more “structured” than “semi-structured” (Cohen, Manion and Morrison 2003: 247-8). According to Wegner (2000: 90), a structured questionnaire consists of well-formulated questions and fixed response alternatives. They are also more simple to administer and easier to tabulate and analyze statistically.

Guided by the purpose and objectives of the study, the researcher created a questionnaire (See **Appendix 2**) that consisted of three different sections:

- demographic
- closed ended and
- open ended questions

The demographic section described the profile of respondents in terms of their demographic and socio-economic attributes, such as diploma registered for, gender, previous library experience, previous computer usage experience and frequency of usage. These demographic attributes were appropriate for the nature and purpose of this research. Further sections examined aspects of information literacy and these formed the substance of the questionnaire. They consisted of

questions that extracted data from respondents to address the objectives of the study. The greatest proportion of the questionnaire (as noted above) consisted of closed-ended questions, with the exception of Section 5 for topic analysis, which consisted of three open-ended questions. This section expected students to use their higher order thinking skills and a critical analytical approach to information, as suggested by Bloom's Taxonomy of higher order skills, as discussed in the previous chapter.

3.6 Pre-testing the questionnaire

According to Babbie and Mouton (2001: 244) and Bless and Higson-Smith (1995: 130), pre-testing is crucial to ensure reliability and validity of the questionnaire. The questionnaire for this study was pre-tested on a sample group of eleven students. They were randomly selected from the first-year undergraduate students who were in the library to register for the Library Orientation and Instruction session. They had not undergone Library Orientation and Instruction. Respondents for the pre-test were assembled in one corner of the library. The researcher explained the purpose of the study and the significance of confidentiality. They were asked to raise a hand and ask, if they did not understand a question or for any other assistance. They were asked to answer all questions and use the option of "I do not know", when necessary.

The researcher was present throughout the session to answer respondents' questions. After the respondents had completed the questionnaires they were submitted to the researcher.

The researcher checked all questionnaires and it was evident that that particular group of respondents had no problems, except with some open questions. Some respondents did not answer open-ended questions, but this did not suggest the modification of the questions to the researcher. The conclusion reached was that the questionnaire was valid and reliable as it appeared understandable to the pre-test respondents. This corresponds with the literature, which suggests that unless the researcher can be sure that the measurement techniques are actually measuring the things they are supposed to be measuring, the results will be difficult to interpret (Bless and Higson-Smith 1995: 130).

3.7 Administering the questionnaire

In November 2003, and through e-mail correspondence with the Special Projects Librarian, who is a coordinator of all library projects, an informal meeting was held with the Library Orientation and Instruction Committee. The aim was to make them aware of the forthcoming study. No objections were raised by the members of the Committee. It was therefore difficult for the researcher to understand why one of the Committee members would not allow her group of students to participate,

as this member was involved through all the prior arrangements and had raised no objections. All the other members involved, however, were co-operative.

The questionnaires were administered to different groups during the sessions in the period 4 to 27 February 2004. Because the researcher had no access to students except through the Library Orientation and Instruction Team, she was forced to rely on the team leaders for access to first-year students. The researcher approached the team leaders in order to get permission for the available group to fill in the questionnaires. In order to ensure that respondents answered all the questions, the researcher was always there to monitor them.

This was a busy time of the year. It was the beginning of the semester, when students are engaged in various academic and non-academic orientation programmes. Thus time constraints and the lack of cooperation noted above prevented more students being reached. Nevertheless, 170 students completed the questionnaire and these questionnaires were used in the data analysis described below.

3.8 Data analysis

Data was analysed using the SPSS computer program. According to Babbie and Mouton (2001: 583), the computer and SPSS are simply tools to:

- summarize data
- compile appropriate tables and graphs
- examine relationships among variables
- perform tests of statistical significance, based on one's hypotheses
- develop fairly sophisticated models.

SPSS is very helpful in handling large quantities of data, finding patterns and testing hypotheses.

3.8.1 Coding of the data

The coding was simple with the closed-ended questions. Responses were given a numerical value and these were entered into SPSS. With respect to the open-ended questions in Section 5, responses were analyzed, rated and given a numerical value: (See Appendix 4)

- '0' indicated 'no response or do not know'
- '1-2' was for 'Weak'
- '3' was for 'Satisfactory'
- '4' was for 'Good'
- '5' was for 'Very Good'

This type of coding facilitated the analysis of data. Once the data had been entered the tables of frequencies and descriptive statistics were generated. These are reflected in Chapter 4.

3.9 Summary

In Chapter 3, the research method adopted for the study was described. The data collection technique used was discussed and the structure of the questionnaire was outlined. This was followed by a description of the sampling procedure adopted and the pre-testing and administration of the questionnaire. Finally, the analysis of the data was briefly described.

CHAPTER 4

PRESENTATION OF FINDINGS

4.1 Introduction

In this chapter the research results are presented. The questions that were asked were based on the purpose and objectives of the study.

The results will be explained according to the sub-headings of the questionnaire, which are as follows:

- Section 1: Demographic questions
- Section 2: Library layout / orientation
- Section 3: Library catalogue and information retrieval
- Section 4: Sources of information in the library
- Section 5: Topic analysis
- Section 6: Referencing
- Section 7: Evaluation of information resources

4.1.1 Section 1: Demographic data of respondents in the study

Various demographic-type questions were asked of respondents: diploma registered for, age and gender, library and computer usage background, frequency and purposes for which computers were used and library orientation and instruction background.

4.1.1.1 Diplomas

Table 1: Diploma registered for (first-year undergraduate students)

N = 170

| Diploma | PubFin AccLaw * | Marketing ** | Engineering (Elec & Mec) *** | InfoTech **** | Office Man. ***** | H.R.M & Env. Science ***** | TOTAL |
|------------------|--------------------------------|-------------------------|---|--------------------------|------------------------------|---|--------------|
| Frequency | 50 | 41 | 39 | 16 | 16 | 08 | 170 |
| Percent | 29.4 | 24.1 | 23.0 | 9.4 | 9.4 | 4.7 | 100.0 |

*** Public Finance Accounting and Law**

**** Marketing**

***** Electrical and Mechanical Engineering**

****** Information technology**

******* Office Management**

******* Human Resources Management and Environmental Science (Agriculture)**

As can be seen from Table 1, the majority of respondents were those registered for the Public Finance Accounting and Law Diploma, with 50 (29.4%) response rate, followed by Marketing, with 41 (24.1%) response rate, followed by Engineering, both Electrical and Mechanical, which gave a total of 39 (23.0%) response rate. Office Management and Information Technology, when combined, gave a total of 32 (18.8%) response rate.

4.1.1.2 Age and Gender

Table 2: Age and gender distribution

N = 170

| Age | Female | Male | Percent | Totals |
|---------------|-----------|-----------|--------------|------------|
| 15-18 | 27 | 26 | 31.2 | 53 |
| 19-21 | 49 | 47 | 56.5 | 96 |
| 22-25 | 8 | 9 | 10.0 | 17 |
| 26-29 | 2 | 1 | 1.7 | 3 |
| 30 and above | 0 | 1 | 0.6 | 1 |
| Totals | 86 | 84 | 100.0 | 170 |

An almost even gender distribution of respondents is noted in Table 2, with 86 females and 84 males. The majority of students, 96 (56.5%) were between 19 and 21 years of age. The oldest respondent was a male.

4.1.1.4 Library type

Table 4: Type of library used

N = 101

| Library Type | Frequency | Percent |
|---------------------|------------------|----------------|
| Public library | 77 | 76.2 |
| School library | 41 | 40.6 |
| Technikon library | 8 | 7.9 |
| Other | 2 | 1.9 |
| Total | 128* | 126.6* |

***Multiple responses received**

Table 4 shows the types of libraries that had been used by the respondents. The highest number of respondents, 77 (76.2%) had used a public library, followed by 41 (40.6%) who had used a school library and eight (7.9 %) respondents who had used a technikon library.

4.1.1.5 Purpose of library usage

Table 5: Purpose of library usage

N = 101

| Purpose | Frequency | Percent |
|---|------------------|----------------|
| Study and research using library material | 90 | 89.1 |
| Borrowing books for leisure reading | 40 | 39.6 |
| Study and research using own material | 25 | 24.8 |
| Reading newspapers and magazines | 20 | 19.8 |
| Social gathering | 2 | 1.9 |
| Other (homework) | 1 | 0.9 |
| Total | 178* | 176.1* |

***Multiple responses received**

As indicated in Table 5, the majority of respondents, 90 (89.1%), had used the library for study and research using library materials, 40 (39.6%) borrowed books such as novels for leisure reading, 25 (24.8%) had used the library for research using their own material and 20 (19.8%) had used the library for reading newspapers and magazines.

4.1.1.6 Frequency of library usage

Table 6: Frequency of library usage

N = 101

| Frequency | Public Library | Percent | School Library | Percent | Technikon Library | Percent | Other | Percent |
|----------------------------------|-------------------|--------------|-------------------|--------------|----------------------|--------------|----------|--------------|
| Often (1-5x or more per week) | 43 | 55.8 | 21 | 51.2 | 4 | 50 | 2 | 50 |
| Sometimes (once a month) | 28 | 36.4 | 15 | 36.6 | 2 | 25 | 0 | 00 |
| Never | 6 | 7.8 | 5 | 2.2 | 2 | 25 | 2 | 50 |
| Total | 77 | 100.0 | 41 | 100.0 | 8 | 100.0 | 4 | 100.0 |

Table 6 indicates how frequently the library or various types of libraries had been used by respondents. The highest number of respondents, 43 (55.8 %) of 77, had used the public library “Often”, 21 (51.2 %) of 41 had used the school library “Often” and four (50%) of eight had used the technikon library “Often”

Note: While some respondents indicated that they had used a specific library (see Table 4), when asked the frequency of usage, they indicated “Never”, as reflected in Table 6.

4.1.1.7 Computer usage

Table 7: Computer usage

N = 170

| Computer usage | Frequency | Percent | Gender | Age | Diplomas |
|----------------|------------|--------------|------------------------|--|--|
| Yes | 48 | 28.2 | 23 Females 25 Males | Above 22 = 13 19-21 = 23 15-18 = 12 | Marketing = 13 Engineering = 11 InfoTechnology = 10 Pub Fin Acc Law = 7 Off Management = 6 Hum.Res.Man = 1 |
| No | 122 | 71.8 | 63 Females 59 Males | Above 22 = 8 19 - 21 = 73 15 - 18 = 41 | Pub Fin Acc Law = 43 Marketing = 28 Engineering = 27 Off Management = 10 Info Technology = 7 Hum.Res.Man = 6 Agriculture = 1 |
| Total | 170 | 100.0 | 170 | 170 | 170 |

Table 7 indicates that the majority of respondents, 122 (71.8%) had not used a computer before, of whom 63 (37.1%) were females and 59 (34.7%) males. Forty-eight (28.2%) of respondents have had previous exposure to computers.

4.1.1.8 Place where computer was used

Table 8: Place of computer usage

N = 48

| Place | Frequency | Percent |
|---------------|------------|---------------|
| Home | 14 | 29.2 |
| MANTEC | 7 | 14.6 |
| Internet café | 7 | 14.6 |
| Work | 2 | 4.2 |
| Other | 24 | 50.0 |
| Total | 54* | 112.6* |

* Multiple responses received

Table 8 indicates that the majority of responses, 24 (50.0%), fell within the "Other" category. "Other" places included school and tertiary institutions. Fourteen (29.2%) had used it at home, seven (14.6%) had used a computer at MANTEC and the other seven (14.6%) had used it at an Internet café.

4.1.1.9 Purpose of computer usage

Table 9: Purpose of computer usage

N = 48

| Purpose | Frequency | Percent |
|----------------------------|-------------|----------------|
| Word processing | 28 | 58.3 |
| Playing games | 17 | 35.4 |
| Searching the Internet | 17 | 35.4 |
| Using e-mail facility | 8 | 16.7 |
| Accessing library database | 4 | 8.3 |
| Other (basic skills) | 1 | 2.1 |
| Total | 55 * | 151.8 * |

*Multiple responses received

As indicated in Table 9, the highest number of respondents, 28 (58.3 %), had used a computer for word processing, seventeen (35.4%) for playing games, another seventeen (35.4%) for Internet searches, eight (16.7%) for the e-mail facility and four (8.3%) for accessing a library database.

4.1.1.10 Frequency of computer usage

Table 10: Frequency of computer usage

N = 48

| Frequency | Response | Percent |
|---|-----------------|----------------|
| Often (1-5 times or more per week) | 28 | 58.3 |
| Sometimes (less than once a week or once a month) | 14 | 29.2 |
| No response | 6 | 12.5 |
| Total | 48 | 100.0 |

Table10 indicates the frequency of computer usage. Respondents who claim to have used the library often numbered 28 (58.3%). Fourteen (29.2%) claimed to have used the computer sometimes.

4.1.1.11 Library orientation and instruction attendance

Table 11: Library orientation and instruction attendance

N = 170

| Response | Frequency | Percent | Gender | Age | Diploma | Place |
|--------------|------------|--------------|------------------------|---|---|--|
| Yes | 15 | 8.8 | 8 Males 7 Females | Above 22 = 5 19 – 21 = 6 15 – 18 = 4 | Marketing = 8 Engineering = 4 Pub Fin Acc Law = 1 Office Management = 1 Info Technology = 1 | Public library = 8 School library = 5 Academic library = 2 |
| No | 155 | 91.2 | 76 Males 79 Females | Above 22 = 16 19 – 21 = 90 15 – 18 = 49 | Pub Fin Acc Law = 49 Engineering = 35 Marketing = 33 Off Management = 15 Info Technology = 15 Hum.Res.Man = 7 Agriculture = 1 | |
| Total | 170 | 100.0 | 170 | 170 | 170 | 15 |

Table 11 indicates that 15(8.8 %) respondents, eight males and seven females, had attended a library orientation and instruction programme before. The majority of respondents, 155 (91.2%), had not.

4.1.2 Section 2: Library layout and orientation

Questions in this section were asked to determine respondents' knowledge about different sections of a library and their usefulness. Table 12 reflects the findings.

Table 12: Library layout and orientation

N = 170

| Statement | Correct response | Percent | Incorrect response | Percent | Do not know | Percent | Total | Percent |
|----------------------------|------------------|---------|--------------------|---------|-------------|---------|-------|---------|
| Purposes for library usage | 157 | 92.4 | 0 | 0 | 13 | 7.6 | 170 | 100.0 |
| General lending collection | 46 | 27.0 | 19 | 11.2 | 105 | 61.8 | 170 | 100.0 |
| Issue desk | 42 | 24.7 | 12 | 7.1 | 116 | 68.2 | 170 | 100.0 |
| Reference collection | 36 | 21.2 | 18 | 10.6 | 116 | 68.6 | 170 | 100.0 |
| Short loan section | 48 | 28.2 | 18 | 10.6 | 104 | 61.2 | 170 | 100.0 |
| Periodical section | 9 | 5.3 | 57 | 33.5 | 104 | 61.2 | 170 | 100.0 |

Table 12 is a summary of the overall response to Section 2. The majority of respondents, 105 (61.8%), did not know the purpose of a general lending collection; 116 (68.2%) did not know the purpose of an issue desk; 116 (68.2%) did not know the purpose of a reference collection, while 104 (61.2%) did not know the significance of a short loan section. The last response was the worst, with 104 (61.2%) respondents who did not know the significance of a periodical section and 57 (33.5%) who gave incorrect responses.

4.1.3 Section 3: Library catalogue and information retrieval

In this section, questions were asked to determine respondents' knowledge of what the library catalogue is used for. Their basic conceptual retrieval skills, such as knowing the author of a book and their understanding of the importance of the Dewey Decimal Classification (DDC) number, were also tested through these questions. Table 13 reveals distinguishable results

Table 13: Library catalogue and information retrieval

N = 170

| Statement | Correct response | Percent | Incorrect responses | Percent | Do not know | Percent | Total | Percent |
|------------------------------|------------------|---------|---------------------|---------|-------------|---------|-------|---------|
| Purpose of library catalogue | 48 | 28.2 | 47 | 27.6 | 75 | 44.1 | 170 | 100.0 |
| Library catalogue | 42 | 24.7 | 50 | 29.3 | 78 | 45.9 | 170 | 100.0 |
| Author of the book | 139 | 81.4 | 00 | 00 | 31 | 18.2 | 170 | 100.0 |
| 331.133 MCH | 5 | 3.0 | 12 | 7.1 | 153 | 90.0 | 170 | 100.0 |

Table 13 indicates that the majority of respondents, 75 (44.1%), did not know that the purpose of a library catalogue is to identify and locate library materials. Similarly, 78 (45.9%) did not know that the first thing to use in the library in order to find a book is the library catalogue. The response was worse with the final statement, where 153 (90.0 %) could not select the correct Dewey Decimal Classification number or call number as it appears on the spine of the book.

4.1.4 Section 4: Sources of information in the library

Questions in this section were asked to determine respondents' knowledge of printed and electronic sources of information, library reference sources and information within sources, such as the table of contents, index and bibliography.

Table 14: Sources of information in the library

N = 170

| Statement | Correct response | Percent | Incorrect response | Percent | Do not know | Percent | Total | Percent |
|-----------------------------------|------------------|---------|--------------------|---------|-------------|---------|------------|--------------|
| Distinguishing printed sources | 39 | 22.9 | 89 | 52.4 | 42 | 24.7 | 170 | 100.0 |
| Distinguishing electronic sources | 18 | 10.6 | 95 | 55.9 | 57 | 33.5 | 170 | 100.0 |
| Purpose of a dictionary | 150 | 87.6 | 10 | 5.9 | 11 | 6.5 | 170 | 100.0 |
| Purpose of an encyclopaedia | 43 | 25.3 | 71 | 41.8 | 56 | 32.9 | 170 | 100.0 |
| Table of contents | 58 | 34.1 | 78 | 45.9 | 34 | 20.0 | 170 | 100.0 |
| Index | 43 | 25.3 | 65 | 38.2 | 62 | 36.5 | 170 | 100.0 |
| Bibliography | 26 | 15.3 | 78 | 45.9 | 66 | 38.8 | 170 | 100.0 |

Table 14 indicates, in bold, “correct”, “incorrect” and “do not know” responses. Surprisingly, 89 (52.4%) and 95 (55.9%) respondents appeared uncertain about differentiating printed from electronic sources and *vice versa*. A significant majority, 71 (41.8%), gave incorrect answers about the purpose of an encyclopaedia and 56 (32.9%) did not know the correct answers. Amazingly again, 78 (45.9%) respondents gave incorrect responses about the purpose of a table of contents and 34 (20.0%) did not know the correct answer, 65 (38.2%) gave incorrect responses about the purpose of an index and 62 (36.5%) did not know the correct answer and, lastly, 78 (45.9%) gave incorrect responses about the purpose of a bibliography and 66 (38.8%) did not know the correct answer

4.1.5 Section 5: Topic analysis

Questions were asked to assess students' ability to analyze a topic. Respondents were expected to indicate why it is essential to analyze a topic. They were also expected to give two main reference sources of information that can help in defining a topic. Details concerning the interpretation of the results in terms of the various categories (very good, good, satisfactory and weak) appear in Appendix 4.

Table 15a: Main theme, geographic and time parameters of a topic

N = 170

| Response | Frequency | Percent |
|----------------------------|------------------|----------------|
| No response or do not know | 74 | 43.5 |
| Weak | 28 | 29.2 |
| Satisfactory | 12 | 12.5 |
| Good | 10 | 10.4 |
| Very Good | 46 | 47.9 |
| Total | 170 | 100.0 |

As can be seen in Table 15a, above, the "Very good" response rate, which indicates that students were able to correctly answer the question, was 46 (47.9%), while 74 (43.5%) did not attempt to answer the question. The question was phrased as follows:

You are given the following topic to discuss: "**Voting registration of Umlazi community in Durban during the 8th and 9th November 2003**". Analyze the topic by identifying the following elements:

- the main theme of the topic
- geographic parameters of the topic and
- time parameters of the topic

Table 16c: Referencing of a book must be done alphabetically, starting with the title of the book, author's surname and initial, date of publication, place of publication and publisher's name

N = 170

| Response | Frequency | Percent |
|-----------------|------------------|----------------|
| True | 104 | 61.2 |
| False | 15 | 8.8 |
| I do not know | 51 | 30.0 |
| Total | 170 | 100.0 |

Table 16c indicates that the majority of respondents, 155 (91.2 %,) either did not know how referencing is done or gave incorrect responses, while only 15 (8.8 %) responded correctly

4.1.7 Section 7: Evaluation of information sources

In this section questions were asked in order to determine respondents' ability to evaluate information from different sources of information. Basic understanding of information sources' authority, accuracy, currency, reliability, objectivity and relevancy was also assessed.

The results are given in Tables 17a to 17e.

Table 17a: Information on the Internet is the same as in academic libraries

N = 170

| Response | Frequency | Percent |
|-----------------|------------------|----------------|
| True | 34 | 20.0 |
| False | 59 | 34.7 |
| I do not know | 77 | 45.3 |
| Total | 170 | 100.0 |

As can be seen from Table 17a, 59 (34.7%) respondents responded correctly, whilst the majority 111 (65.3%) either gave an incorrect or a "do not know " response.

Table 17b: Some information on the Internet is biased and distorted**N = 170**

| Response | Frequency | Percent |
|-----------------|------------------|----------------|
| True | 29 | 17.1 |
| False | 23 | 13.5 |
| I do not know | 118 | 69.4 |
| Total | 170 | 100.0 |

It is evident from Table 17b that the majority of respondents 141 (82.9%) either gave an incorrect or a "do not know" response. Only 29 (17.1%) responded correctly.

Table 17c: Publication date is a reasonable indication of how recent the facts are**N = 170**

| Response | Frequency | Percent |
|-----------------|------------------|----------------|
| True | 65 | 38.2 |
| False | 9 | 5.3 |
| I do not know | 96 | 56.5 |
| Total | 170 | 100.0 |

Table 17c shows that 65 (38.2%) students were aware of the significance of the currency of information, while 105 (61.8%) respondents gave an incorrect or a "do not know" response.

Table 17d: Statement, a fact or an opinion?**N = 170**

| Response | Frequency | Percent |
|-----------------|------------------|----------------|
| Fact | 78 | 45.9 |
| Opinion | 71 | 41.8 |
| I do not know | 21 | 12.4 |
| Total | 170 | 100.0 |

Respondents were asked to indicate whether the statement "Johannesburg is the largest city in South Africa" was a fact or an opinion. Table 17d indicates that 92 (54.2%) students either did not know the difference between a fact and an opinion or gave an incorrect answer, while 78 (45.9%) answered correctly.

Table 17e: Evaluation of information sources

In question 28, respondents were asked to evaluate information on the treatment of HIV/AIDS, contained in different information sources, in terms of objectivity or fairness, *i.e.* not affected by emotion or personal bias, and to indicate their level of trust in these sources detail of how the results were interpreted, compared with the results according to the researcher's expectations, appear in **Appendix 4**

Table 17e (i): Television report by the Minister of Health, Dr Manto Shabalala-Msimang

N = 170

| Level of trust | Frequency | Fem: Male Ratio | Percentage |
|-----------------------|------------------|------------------------|-------------------|
| Trust a lot | 44 | 24: 20 | 25.9 |
| Trust | 32 | 15: 17 | 18.8 |
| Trust a little | 19 | 11: 8 | 11.2 |
| Do not trust at all | 8 | 4: 4 | 4.7 |
| I do not know | 67 | 32: 35 | 39.4 |
| Total | 170 | 86: 84 | 100.0 |

It is evident from Table 17e (i) that 103 (60.6%) students attempted the question and 67 (39.4%) had a "do not know" response. It is also evident that levels of trust were higher among females than males. Of those who attempted the question the highest number, 44 (25.9%), indicated a high level of trust for the report.

Table 17e (ii): A one-page advertisement in the “Ilanga” newspaper

N = 170

| Level of trust | Frequency | Fem: Male Ratio | Percentage |
|-----------------------|------------------|------------------------|-------------------|
| Trust a lot | 10 | 2: 8 | 5.9 |
| Trust | 23 | 11: 12 | 13.5 |
| Trust a little | 45 | 25: 20 | 26.5 |
| Do not trust at all | 31 | 16: 15 | 18.2 |
| Do not know | 61 | 32: 29 | 35.9 |
| Total | 170 | 86: 84 | 100.0 |

Table 17e (ii) indicates that 109 (64.1%) respondents answered the question, while 61 (35.9%) did not. Of the 109 (64.1%) respondents, the levels of trust were higher among males than females.

Table 17e (iii): A one-page article in the “True Love” magazine

N = 170

| Level of trust | Frequency | Fem: Male Ratio | Percentage |
|-----------------------|------------------|------------------------|-------------------|
| Trust a lot | 11 | 8: 3 | 6.5 |
| Trust | 26 | 13: 13 | 15.3 |
| Trust a little | 47 | 22: 25 | 27.6 |
| Do not trust at all | 20 | 9: 11 | 11.8 |
| Do not know | 66 | 34: 32 | 38.8 |
| Total | 170 | 86: 84 | 100.0 |

Table 17e (iii) shows that 104 (61.2%) respondents answered the question and 66 (38.8%) did not. As can be seen in the table above, the levels of trust appeared higher among females than males.

Table 17e (iv): A journal article in the “South African Medical Journal”

N = 170

| Level of trust | Frequency | Fem: Male Ratio | Percentage |
|-----------------------|------------------|------------------------|-------------------|
| Trust a lot | 41 | 20: 21 | 24.1 |
| Trust | 25 | 12: 13 | 14.7 |
| Trust a little | 14 | 10: 4 | 8.2 |
| Do not trust at all | 16 | 8: 8 | 9.4 |
| Do not know | 74 | 36: 38 | 43.5 |
| Total | 170 | 86: 84 | 99.9 |

As can be seen in Table 17e (iv), of the sample of 170 students, 96 (56.5%) attempted to answer the question and 74 (43.5%) indicated that they did not know. The levels of trust of those who attempted an answer were generally higher. The levels of trust were higher among males than females.

Table 17e (v): A report by an unknown writer appearing on the Internet

N = 170

| Level of trust | Frequency | Fem: Male Ratio | Percentage |
|-----------------------|------------------|------------------------|-------------------|
| Trust a lot | 3 | 1: 2 | 1.8 |
| Trust | 3 | 2: 1 | 1.8 |
| Trust a little | 14 | 6: 8 | 8.2 |
| Do not trust at all | 63 | 29: 34 | 37.1 |
| Do not know | 87 | 48: 39 | 51.2 |
| Total | 170 | 86: 84 | 100.0 |

It is evident from Table 17e (v), that the greatest proportion of the sample, 87 (51.2%) had “Do not know” responses, while 83 (48.8%) answered the question. Levels of trust were low. Of the 83 (48.8%) students, the levels of trust were lower among males than females.

4.2 Summary

In this chapter the findings of the study were presented in tabular format. Headings used to structure this chapter were the ones used in the actual questionnaire. In Chapter 5 the findings are discussed.

CHAPTER 5

DISCUSSION OF THE RESULTS

5.1 Introduction

The purpose of the study was to establish the extent and nature of IL inadequacies of first-year undergraduate students before undergoing a library orientation and instruction programme. The first section of the questionnaire elicited demographic information from the respondents. Subsequent sections included more open-ended questions and very few closed ones and centered on the objectives of the research. These objectives were to establish the extent and nature of the following:

- Information literacy skills in terms of previous library and computer knowledge at a pre-library orientation and instruction programme
- Library layout or different sections of the library
- Basic purpose of a library catalogue and ability to identify a Dewey Decimal Classification number or call number as it appears on the spine of the book.
- Printed and electronic information sources and information within those sources
- Topic analysis and referencing
- Knowledge in relation to the evaluation of various sources of information
- To make recommendations regarding the MANTEC library orientation and instruction programme.

The discussion below is based on the results the researcher considered significant.

Section 1

5.2 Demographic data of respondents

This section described the profile of the respondents in terms of a number of demographic attributes such as diploma, gender, age and previous library and computer usage background.

5.2.1 Diploma, gender and age

In relation to students' registration for various diplomas, the highest number of respondents, 50 (29.4%), were those registered for the Public Finance Accounting and Law Diploma. The majority of respondents, 96 (56.5%), were between 19 and 21 years of age. There was an almost even gender distribution, with 86 (50.6%) females and 84 (49.4%) males. There was no question determining

race, but the researcher observed that the vast majority (if not all) first year students were (black) African.

5.2.2 Library usage background

Pertaining to previous library usage, type of library used, purpose and frequency of library usage, respondents revealed the following:

The greatest proportion of the sample, 101 (59.4%), claimed to have used a library before. A significant 69 (40.6%) respondents claimed not to have used a library before. According to Karlsson (2003: 2) this is perhaps not surprising, given that in 1996, of 26 734 schools in South Africa, only 4 502 (16.8%) had libraries. Further Karlsson (2003: 2) points out that:

While these libraries were not only (but predominantly) in schools for whites, white learners were affirmed and advantaged to a greater extent over learners of other racial groups. But the majority, being black learners, were subordinated and oppressed, with negligible or no provision, and coloured and Indian learners were less advantaged than white learners but more advantaged than their black peers. The post-apartheid education system thus inherited a situation in which 80% of all South African schools had no libraries and insufficient learning materials for learners to access the curriculum. In 2000, the School Register of Needs (SRN) Survey was repeated and it was found that, since 1996, only 3% more schools nationally had libraries

It is evident that there are still many high schools without properly functioning libraries. The study by Stilwell and Bell (2003: 340) on "Information needs of learners at Emzaweni High School, Inadi, South Africa" has confirmed the need for library provision, electricity and a link to information and communication technology (ICT) initiatives in the school. Lack of access to such resources means, as Maepa and Mhinga (2003: 274) point out, that learners who were not previously exposed to libraries fail to cope with the complex information environment they are confronted with at tertiary level.

The most used library was the public library, used by 77 (76.2%) of the 101 respondents who indicated that they used a library. The majority of respondents, 90 (89.1%), declared that they had used the library for study and research, using library materials. This shows a link with the literature that suggests that public libraries play a major role in the school life of learners (Hart 2003b: 75; Maepa and Mhinga 2003: 272). Respondents who claimed to have used a school library numbered 41 (40.6%). This figure underscores the lack of school libraries in black schools in KwaZulu-Natal.

According to media releases during 1998, about 75% of the schools in KwaZulu-Natal completely lacked specialised facilities such as laboratories and libraries (HSRC 1998).

While some respondents indicated that they used a specific library, when asked the frequency of usage, they stated 'Never'. This could indicate a lack of application on the part of the respondents but, more likely, a problem relating to language difficulties given that English was probably a second language for the respondents. According to Bell (1990: 2, 4) this language problem heightens the degree of difficulty regarding bridging problems between school and university; Maepa and Mhinga (2003: 274) concurred.

5.2.3 Computer usage background

Responses to questions concerning computer usage, place where the computer was used, frequency and purpose of usage revealed that only 48 (28.2%) respondents indicated that they had used a computer before. Of the 48 (28.2%) who had used a computer, twenty-eight (58.3%) used it for word processing. The greatest proportion of the sample, 122 (71.8%), had not used a computer before. This corresponds with the literature that suggests that students from historically disadvantaged educational systems have not been exposed to information technologies and information sources (De Jager and Sayed 1998: 199, 201-202; Sayed and De Jager 1998: 9, 11 and Stilwell and Bell 2003: 338). Access to telecommunications within South Africa is uneven, reflecting the gross inequities inherited from the apartheid state (Underwood 2002). Consequently, as suggested by Choonoo (1999), different educational and socio-economic backgrounds will impact on the student's information literacy skills.

Today, the fact that most tertiary libraries, including that of MANTEC, are computerized and many information resources are available electronically demands a measure of computer literacy. Also, the fact that what computer usage by respondents took place, little had to do with library use, as only 4 (8.3%) respondents used the computer for accessing a library database and 17 (35.4%) used it for Internet searches. Hence Choonoo (1999: 347) is of the view that, in order to ensure that the online systems found in academic libraries are accessible to all end-users, the library has a responsibility to provide online instruction as a means of bridging this gap between schools without computers, on the one hand, and the computerized tertiary world, on the other. She recommended that the teaching or training methodology used should be appropriate to the background of the trainee.

5.2.4 Library orientation and instruction background

A significantly small number of respondents, 15 (8.8%), claimed to have had some form of library orientation and instruction. The largest percentage, 155 (91.2%), did not have any library orientation background. The literature agrees that South African students come to the world of information and tertiary education with specific and often severe handicaps that might not be as evident in other parts of the world (De Jager and Nassimbeni 2002: 1). These factors underscore the need for library orientation and instruction programmes.

Of the 15 who had some form of user education, a few managed to perform reasonably well, as indicated below:

- Library layout, catalogue and information retrieval - 10 (66.7%) students managed to score 50% and above in the questions in this section.
- Sources of information in the library - 10 (66.7%) indicated an ability to distinguish printed from electronic sources of information.
- Library reference sources and information within those sources - 4 (26.7%) indicated knowledge in relation to this section.
- Topic analysis – 10 (66.7%) scored 50% and above.
- Referencing - 7 (46.7%) scored 50% and above
- Evaluation of information sources - 9 (60%) scored 50% and above.

These results suggest that a few students who have had some form of user education do have a better IL base for further enhancement.

Section 2

Subsequent to the demographic questions, respondents were asked questions concerning library layout, library catalogue, sources of information in the library and information within those sources, topic analysis, referencing and evaluation of information within sources. The aim of the study was to assess information literacy skills that first-year students bring with them to tertiary institution.

5.3 Library layout

In this section respondents were asked various questions relating to their understanding of general lending, reference, short-loans and periodicals sections. Responses to the question indicate that the vast majority of respondents, 153 (93.0%) knew what the library is used for. This broad understanding however, was not always evident when it came to more specific aspects of the library, as the majority of respondents, 124 (72.4%), did not know that the general lending collection

consists of books that can be borrowed. A majority of respondents, 128 (74.7%) ,did not know that books are borrowed and returned at the issue desk. An even higher percentage of respondents, 134 (78.2%), did not know the purpose of a reference collection, while 122 (71.1%) were unaware of the short loan borrowing rules. It is acknowledged that libraries may have different rules regarding short loan. Finally, 161 (94.0%) students did not know the purpose of a periodicals section.

These findings are similar to those of other studies such as the one by Makhubela (1986), who investigated the need for user education at the University of Zululand (South Africa). Makhubela found that most of the first-year students were unable to use the library. A study done by De Jager and Nassimbeni (1998), on "Roadmaps for the Highway: the evaluation of information literacy programmes for South African students", confirmed that University of Cape Town (UCT) undergraduate students who were to be introduced to a course on "Information age and its impact on society" were neither information literate nor information confident, to a significant extent. Similar findings and points are made by Bell (1990: 24); Choonoo (1999: 10); De Jager and Nassimbeni (2002: 1); De Jager and Sayed (1998: 197); Krige (2001: 3); Leach (1999: 58); Makhubela (2000: 2); Mpendulo *et al* (1999: 36) and Zondi (1991: 3).

5.4 Library catalogue and information retrieval

A catalogue is a logically arranged list of all resources in a library's collection. The purpose of the catalogue is to identify all the sources in the collection and indicate where they are located in the library. The catalogue could be in card, book or electronic format. Information retrieval in this context refers to the ability to locate information sources in a catalogue and then select certain information, which is contained in these sources (Behrens, Olen and Machet 1999: 73,124).

Responses to the questions on the library catalogue and information retrieval indicate a serious lack of knowledge of these aspects. A large proportion of respondents, 122 (71.8%) did not know the purpose of a library catalogue. This agrees with the literature, which suggests that students' library use problems lie in their unawareness of and inability to use the library's catalogue, indexing and reference tools (Zondi 1991: 6).

Answers to the question concerning selection of the correct Dewey Decimal Classification number or call number revealed that 165 (97.1%) respondents could not select the correct answer, irrespective of the fact that they had used libraries before. Lack of awareness of the significance of basic information retrieval tools (Bloom's lower order skills), before they are even taken to an in-depth understanding of technical and conceptual terms of a library catalogue, is an indication of lack

of library exposure and use prior to attending tertiary institutions. It underscores the importance of user orientation and instruction programmes at the tertiary level.

5.5 Sources of information in the library

An information source is an object or entity that communicates facts or provides information. There are various types of information sources such as books, magazines, newspapers, museum objects, films, computer databases and Internet sites (Behrens 2000: 5). In this section questions were asked to determine students' level of knowledge of library printed and electronic sources of information, as well as how to find information within these sources.

5.5.1 Printed and electronic information sources

Similar poor responses were observed pertaining to sources of information and information within those sources. The largest proportion of the sample, 152 (89.4%), could not distinguish electronic sources from printed sources, while a similarly large number, 131 (77.1%), could not distinguish printed sources from electronic sources.

5.5.2 Library reference sources

Given that the dictionary is possibly the most used reference tool, both in and out of the academic context, it is perhaps not remarkable that the largest proportion of the sample, 150 (87.6%), knew what the dictionary is used for. However, the largest number, 127 (74.7%), of respondents did not know the purpose of an encyclopaedia. This emphasizes the significance of the teaching of Bloom's lower and higher order skills, not only at the primary and high school levels, but also at the tertiary level.

5.5.3 Information within sources

Students' awareness again seemed inadequate in terms of the importance of how to find information within sources, since 144 (84.7%) respondents did not know what a bibliography is, 127 (74.7%) did not know what an index is and 112 (65.9%) did not know what a table of contents is. Being able to access information within sources is a critical skill and results from the study show that this is badly lacking amongst many of the respondents.

It is the author's assumption that students had a greater degree of difficulty in answering this section due to the problem of language and lack of exposure to libraries and information technologies. The literature suggested that black students appear to have a greater degree of difficulty with library use

than their white counterparts because of problems with the language (English is not their mother tongue, and an apartheid legacy that denied them equal opportunities in this sphere (Bell 1990).

This validates the fact that information literacy standards should be made to accommodate educational background and indigenous knowledge of a South African student, especially the black South African student, as highlighted in the information literacy pre-conference workshop of September 2003, which was discussed under standard seven in Chapter 2. De Jager, Hart and Nassimbeni (2003b) quoted an unidentified delegate at the pre-conference workshop as follows: "With reference to the digital divide, South Africa is a diverse society, with concepts such as indigenous knowledge systems containing ancient knowledge, which might be against other people's values and beliefs. This has to be given more attention and evaluated according to information literacy standards of South Africa". In relation to the South African context, the definition of IL should also accommodate indigenous knowledge systems and skills.

5.6 Topic analysis

According to Behrens, Olen and Machet (1999: 271), topic analysis involves the ability to understand the central theme of the topic. In order to do this, these authors point out, one needs to:

- read the assignment question carefully
- interpret the topic
- look up any words that one does not understand, in a dictionary
- look for key words and concepts in the assignment question. This will help one focus on the central meaning of the question
- take note of action words that indicate what one is required to do, for example compare, analyze, discuss
- keep the requirements in mind when beginning to plan to write, for example when one is required to compare, one has to find similarities and differences between two things. ...

The section on topic analysis consisted of three questions. All but one was open-ended.

5.6.1 Theme, geographic and time parameters of a topic

The first question asked respondents to analyze a given topic. They had to identify three main factors, namely the theme and the geographic and time parameters of the topic. The statement to be analyzed was provided, but the number of poor and no responses was not what the researcher expected, as the theme, geographic and time parameters appeared in the statement. The number of respondents who attempted the question was 96 (56.5%), with less than half of these responses, 46

(47.9%), considered to be very good, as these students answered all the questions correctly. A significant 74 (43.5%) respondents did not even attempt the question. Of the 15 respondents who had previous library orientation background, ten (66.7%) responded correctly to this question.

5.6.2 Significance of analyzing a topic

Subsequent questions were open-ended. The second question asked respondents to explain why it is essential to analyze a topic. Open-ended questions can be difficult to answer. Below are the responses which were common among respondents and also considered correct for the second question (See Appendix 4).

- to be focused or specific about a topic and thus not to lose context
- to ascertain or ensure that one understands the topic
- to have full understanding of what is being asked.

It is remarkable that while 52 (30.6%) respondents attempted the question, only 6 (11.5%) of the 52 respondents were considered to be very good, as they indicated full understanding in their explanation. As many as 118 (69.4%) did not attempt the question.

5.6.3 Two main sources of information helpful in analyzing a topic

In the third and last question in this section, respondents were expected to identify a dictionary and an encyclopaedia as the two sources of information they would consult if they did not understand a topic. It is the author's perspective that there was ambiguity in this question and thus some credit, but not full, was given to other possible answers, such as "the Internet", for one can get a definition of a term and a summary of information on certain branches of knowledge from the Internet. Other respondents said "librarian", for she can direct one to relevant sources of information.

The greatest proportion of the sample, 120 (70.6%), did not answer the question. Only 50 (29.4%) respondents answered the question and, of these, only seven (14.0%) were considered to be either very good or good.

Responses to this section on topic analysis were poor with the majority of respondents. This concurs with Bell's (1990: 115) suggestion that the skill of topic analysis needed more attention, as it was the skill least well coped with by the participants in her study. Writing skills, under which topic analysis would fall, are not amenable to a quick fix and require much time and practice (De Jager and Nassimbeni 1998).

Literacy, critical thinking and writing skills are considered by the researcher to be some of the prerequisites to the ability to analyze a topic. They are among the components of academic literacy that can be used to evaluate a person as information literate. It is evident from the findings of this study that such skills are insufficient or lacking in students from a historically disadvantaged background.

5.7 Referencing

Referencing refers to the ability of the author to compile citations or a list of sources that were used for the assignment or project. When compiling a reference list or bibliography for an assignment or essay, for example, one needs to ensure that each reference includes:

- author's surname and initials (first names are not usually written out in full)
- date of publication (usually just the year)
- title of the book as it appears on the title page
- edition (if not the first edition)
- place of publication
- publisher.

The example of a citation of a book is as follows: -

Behrens, S.J. 2001. *Bibliographic control and information sources*. 2nd edition. Pretoria: University of South Africa Press. (Behrens, Olen and Machet 1999: 199).

This section consisted of three questions that intended to elicit respondents' awareness concerning the significance of referencing. The researcher expected better responses, as the questions consisted of true or false answers, but the overall result was poor.

5.7.1 List of sources at the end of an assignment

The first question asked whether or not a bibliography is essential at the end of an assignment. Surprisingly, the largest proportion of the sample, 97 (57.1%), responded incorrectly, while 73 (42.9%) responded correctly.

5.7.2 Purpose of referencing

The next question probed students' understanding of the significance of referencing. It is evident from the results that respondents did not know the purpose of referencing, since 118 (69.4%) gave the incorrect answer.

5.7.3 Format of referencing

Responses to the last question indicated that the majority of students, 155 (91.2%), were not aware of the format involved in referencing, while only 15 (8.8%) responded correctly. This supports De Jager and Sayed's (1998: 202) findings that students with low academic performance or students speaking African languages needed the most help with writing and referencing, in order to improve their information literacy skills.

5.8 Evaluation of information sources

In the American Library Association's (ALA) (1989) definition of "information literacy," one of the factors required for one to be considered information literate is the ability to "evaluate" information. According to Chambers concise dictionary (1996) "evaluation" is the ability to "calculate the value of, to judge or assess the worth of something".

Evaluation of information and information sources can be done in two stages, that is, at a basic and a higher cognitive level. On a basic level (also referred to as initial appraisal or pre-evaluation) one interacts with information in order to assess it in terms of suitability for a specific task like an assignment or a project. The higher cognitive level involves an analysis of the content. The higher cognitive level can be specific or general. It becomes specific when one interacts with information in order to retrieve facts, opinions, inferences, assumptions and viewpoints. It can also be broader if it involves the following factors: authority, audience intended for, currency, purpose and scope, treatment and objectivity and format and arrangement. (Behrens, Olen and Machet 1999: 96-97 and Harris 2003: 222).

Information is a commodity available in many formats, for example magazines, newspapers, books, journals and the Internet. Some of it has not been approved, edited or peer reviewed before being made available to the public. It exists at many levels of quality and reality. It ranges from very good to very bad. Evaluation skills are important in order to assess whether the information or information sources are suitable for one's own needs (Harris 2003: 222-223).

The section on information evaluation consisted of five statements and respondents were required to state one of three answers, namely true, false or do not know. Respondents were expected to evaluate information at a higher cognitive level, as explained above. The statements were as follows:

5.8.1 Information found on the Internet is the same kind found in academic libraries

The majority of responses, 111 (65.3%), were either “Do not know” or “True”. Only 59 (34.7%) answered correctly. It is evident that many students are not aware of the difference between information in an academic library that has been selected by experts such as subject librarians and information on the Internet, which has not generally been sifted by experts.

5.8.2 Some Internet information is biased and distorted

The greatest proportion of respondents, 141 (82.9%), either gave an incorrect or a “Do not know” response. Only 29 (17.1%) responses were correct. Many respondents, 122 (71.8%), had not previously been exposed to information technologies and, of these, only 17 (10%) indicated that they had used the Internet.

5.8.3 Publication date indicates the currency of facts

The majority of respondents, 105 (61.8%), either gave an incorrect or a “Do not know” response to this statement. The response was not what the researcher expected. A minority of respondents, 65 (38.2%), were aware of the significance of the publication date in terms of the currency of information.

5.8.4 Statement, a fact or an opinion

This question asked whether the statement is a “fact or an opinion”. Ninety-two (54.2%) respondents had either a “Do not know” or an incorrect response. A minority of 78 (45.9%) answered correctly. Guesswork might have been used.

5.8.5 Evaluation of information sources in terms of objectivity or fairness

In this section students were expected to evaluate various information sources dealing with the topic “Treatment for HIV/AIDS in South Africa”. They were expected to use a higher cognitive level of evaluation. Respondents were expected to evaluate the information sources in terms of various levels, namely “Trust a lot”, “Trust”, “Trust a little” and “Do not trust at all”.

Of the 170 students, 111 (65.3%) answered this section. An interesting finding is that, of these 111 respondents 69 (62.2%) had previous library usage background, 35 (31.5%) had previous computer usage experience and 11 (9.9%) had been exposed to a library orientation and instruction session, suggesting that such experience was a factor in whether respondents attempted to answer the questions relating to evaluation

"A report on the television, issued by the Minister of Health, Dr Manto Shabalala-Msimang". Of the 170 respondents, 103 (60.6%) attempted the question. Forty-four (42.8%) students indicated a high level of trust, that is "Trust a lot" for the report. Nineteen (18.4%) respondents showed "Little trust" for the report. The levels of "Trust a lot" were higher among females than males and *vice versa* in terms of only "Trust". The fact that the Minister of Health is a woman may account for the female respondents indicating a higher level of trust.

"A one-page advert in the "Ilanga" newspaper". Of the 170 students, 109 (64.1%) attempted the question, while 61 (31.5%) did not. Of the 109 (64.1%) respondents who attempted the question, ten (9.2%) showed a high level of trust in the report. Forty-five (41.3%) indicated "Little trust" in the report. It was noted that the levels of trust were higher among males than females.

"A one-page article in the "True Love" magazine". In this question 104 (61.2%) respondents answered the question and 66 (38.8%) did not. Eleven (10.6%) indicated a high level of trust. Forty-seven (45.2%) respondents indicated "Little trust" for the information source. Males outnumbered females in terms of "Trusting a little". It is evident that the information source is popular with females and this may have influenced their responses. Eight females (7.7%) indicated a high level of trust, while thirteen (12.5%) "trusted".

"A journal article in the "South African Medical Journal". This source attracted more "trust" from males than females and the split was 34: 32. Females outnumbered males in terms of "trusting a little", at a split of ten females to four males. As noted in the library layout section, the greatest proportion of the sample was unaware of the significance of the periodicals section. It is the researcher's opinion that, although males outnumbered females in terms of trusting the information source, much guesswork was used, without any significance attached to essential factors concerning evaluation of information sources. The number of males who indicated high levels of trust was 21 (20.2%) and those who "trusted" numbered 13 (12.5%).

"A report by an unknown writer appearing on the Internet." The majority of students, 87 (51.2%), had "Do not know" responses, while 83 (48.8%) answered the question. Of the 83 respondents, 14 (16.9%) indicated "Trust a little" for the report and 63 (75.9%) indicated "Do not trust at all". Males outnumbered females in terms of "Do not trust at all". The split was 34 males to 29 females.

While it is acknowledged that it is difficult to evaluate an information source without actually having access to the source and its contents, the results above suggest that the ability to evaluate information

effectively is lacking among many of the respondents in the sample. The researcher's view is that students used much guesswork in this section although this cannot be substantiated. Sayed and De Jager (1998: 9, 11) postulated that critical evaluation and manipulation of information implies that learners possess higher order cognitive skills. Bloom's skills suggest that students should be able to compare and evaluate information from different resources. Higher order thinking skills, such as being able to evaluate critically, to sift, assess and source information, have to be gained by experiential learning and practice and cannot be acquired overnight (Sayed and De Jager 1998: 9, 11). This underlines the significance of recommendations made regarding the breaking down of objectives of the study, with each objective allocated a certain time period. This is discussed in section 6.4 of Chapter 6.

5.9 Summary

In this chapter the findings presented in Chapter 4 were discussed. The objectives of the study were used as a basis for the discussion. What emerged was that students' information literacy skills were, in general, poor. This was, to a large extent, in accordance with the literature, that suggested that South African students come to the world of information and tertiary education with specific and often severe handicaps that might not be as evident in other parts of the world.

CHAPTER 6

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

In this chapter several factors will be highlighted in regard to trends in the assessment of students' information literacy (IL) skills in higher education institutions. Today IL has become a growing trend because of the escalating complexity of the information environment. Individuals are faced with a plethora of information choices in their lives. This information is available through various information resources such as libraries, community resources, media and the Internet. The problem is that this information comes largely unfiltered. It is the duty of the individual to acquire knowledge and the necessary skills to filter the information. Many librarians agree that the desired outcome of library instruction or user education is the information literate and lifelong learner. Hence these terms were used interchangeably in the study.

Many South African researchers are of the view that IL handicaps that have been observed with students in other parts of the world seem exacerbated in South Africa because:

- students are from diverse educational, socio-economic, cultural, language and life-experience backgrounds
- many first-year black students are under-prepared for higher education due to various factors such as under-resourced school backgrounds and inappropriate approaches to learning and teaching
- their proficiency in English is too low for them to engage meaningfully in a language that is not their mother tongue
- many first-year black students appear to have a greater degree of difficulty with library use.

Academic libraries in South Africa are faced with the challenge of helping the student meet the challenge highlighted by SAQA (2000) in De Jager and Nassimbeni (2003: 109), namely becoming lifelong learners. Many librarians are of the view that through library instruction or user education emanates an information literate user and lifelong learner, yet very little has been done that shows objectively and measurably how this ideal may best be attained (De Jager and Nassimbeni 2002: 3). According to Choonoo (1999: 8), library instruction or user education should take into account individual differences of the recipients of the instruction, hence the significance of measuring or assessing students' IL skills before the instruction is given. The advantage is that whoever is

responsible for library instruction will know where the students are, and where they need to be taken to, with regard to IL empowerment.

According to the literature, the assessment of IL competencies was extensive but lacked sufficient empirical information about the availability of any standardized methods for assessing students' IL skills. Many researchers agree that there is a dearth of documented studies giving the results of the assessment of IL skills. Yet the need to assess IL competencies is becoming highly important. The purpose of this study was thus to investigate the extent of IL skills of first year MANTEC students at a pre- library orientation and instruction phase. The research objectives were to establish the extent and nature of:

1. IL skills of first-year students in terms of previous library and computer knowledge at a pre-library instruction phase
2. Knowledge of the library layout or different sections of the library.
3. Knowledge of the basic purpose of a library catalogue and ability to identify a Dewey Decimal (DDC) number or call number.
4. Knowledge of printed and electronic sources and information within those sources.
5. Knowledge of topic analysis and referencing.
6. Knowledge in relation to the evaluation of various sources of information.
7. Make recommendations regarding the MANTEC library user education or library orientation and instruction programme.

6.2 Summary

The purpose of this study was to determine the extent and nature of IL skills of first-year students at MANTEC, before library orientation and instruction is conducted. What is evident is that students do, to a greater or lesser degree, have poor IL skills. What is not so evident is the extent and nature of these inadequacies. The purpose of the present study was to establish the extent of these inadequacies. In Chapter 1, the researcher provided background information concerning the MANTEC library orientation and instruction programme and the esAL user education pilot project study, the latter being conducted at the beginning of 2002. A brief historic and present overview of MANTEC and its library was given.

In Chapter 2, the researcher elaborated on the assessment of IL skills in higher education libraries, with specific reference to the MANTEC library. In the same chapter the study attempted to provide answers to the why, what and how of IL assessment. Specific reference to the South African higher education context, in relation to the current debates on IL assessment, was given. According to

Gozo's unpublished symposium paper (2004), the push for the implementation of IL assessment programmes in libraries is from the Council of Higher Education of Libraries of South Africa (CHELSA). SAQA (2000) and Council on Higher Education (2001) in De Jager and Nassimbeni (2003a: 3) and (2005: 33), gave a list of outcomes expected from graduates of the 21st century. Mention was also made of De Jager and Nassimbeni's (2003a: 3) and (2005: 33) view that, in South Africa today, there is pressure on higher education to demonstrate effectiveness in terms of student performance, expectations of greater accountability for student learning outcomes and a need for assessment methodologies based on abilities and performance.

In relation to what IL skills to assess, ALA (2000) and CAUL's (2001) information literacy standards were discussed as an internationally used guiding tool of IL assessment. This is line with De Jager and Nassimbeni's (2005: 34) view that these standards suggest themselves as a possible instrument for the assessment of information literacy. It is the researcher's opinion that these standards are evident in the objectives of this study and in Bloom's Taxonomy of Educational Objectives of the lower and higher order skills. What is common with all the tools is that a student should be able to locate, evaluate and use needed information effectively and efficiently. According to Bloom, that should progress from lower to higher order, or from simple to difficult. Bloom's tool was used to assess MANTEC first-year students. The areas to be assessed were discussed under the objectives of the study in Chapter 1 (and these have been repeated above). Further elaboration in regard to the "how" of benchmarking of MANTEC students' IL skills was given. Although this system of benchmarking was used at MANTEC, there was a dearth of (published) standardized methods for assessing students' IL skills that could be applied across institutions.

The research method used for this study was the descriptive survey method. It is considered an appropriate method for collecting original data for a population too large to observe directly. It also helps compare the present conditions relating to some phenomenon with the desired standards or goals and thus suggests the improvement of the existing conditions. This advantage underlines the significance of the purpose of this study, since, after the determination of the extent and nature of the students' IL skills, suggestions and recommendations for the existing library instruction programme could be made, as necessary. Data was collected through the use of a self-administered questionnaire, an instrument designed by the researcher herself. The sample comprised 170 first-year MANTEC students. The questionnaire consisted of two main sections, one elicited demographic data of students and the other extracted data that addressed the objectives of the study.

Questions were designed which were relevant to the objectives of this study and the ESAL User Education Task Group's notes on library orientation and instruction, as explained in Chapter 1. In these questions Bloom's Taxonomy of Educational Objectives (that require students to first master the cognitive skills of the lower levels of each domain before the higher order skills may be mastered) are evident. An in-depth discussion of these skills appears in Chapter 2. Students' performance was assessed by the researcher. Results were coded and analyzed using the SPSS programme. Research findings were presented in a qualitative and quantitative format.

The findings of the survey indicated that there is a dearth of IL skills among the majority of first-year students. The results clearly revealed that the extent and nature of knowledge of many of the students relating to basic information literacy competencies was poor. As with other studies, it indicated that many first-year students are under-prepared for tertiary education, generally, and for information literacy demands made on them at the tertiary level. The majority of students had never been exposed to libraries and computers. It is difficult for the researcher to specify a particular area in which students performed poorly, as the majority of students performed poorly in all areas assessed, even where they were expected to perform better, for example in terms of their knowledge of library layout and their ability to distinguish among various information sources. Even those students who have had previous high school, public and academic library exposure appeared to bring with them little or no information literacy competencies to MANTEC.

6.3 Conclusions

Based on the findings of this research, the following conclusions relating to the information literacy skills of first year MANTEC students can be drawn:

- The majority of MANTEC students do not have, or have insufficient, previous library and computer knowledge and library orientation and instruction experience.
- Their knowledge in the following areas is poor:
 - library layout or different sections of the library
 - basic purpose of a library catalogue and ability to identify a DDC number or call number
 - printed and electronic information sources and information within those sources
 - topic analysis and referencing
 - evaluation of various sources of information.

These conclusions support the findings of other South African studies (See Chapters 1 and 2) which suggested that first-year students in tertiary institutions, especially those from disadvantaged educational backgrounds, bring with them numerous problems relating to information literacy.

In relation to Bloom's Taxonomy of Educational Objectives, that require students to first master the cognitive skills of the lower levels of each domain before higher order skills may be mastered, findings indicated that there is a dearth of the basic lower order skills in the majority of first-year students at MANTEC.

6.4 Recommendations

Based on the findings for this study, the following recommendations are made:

6.4.1 Teaching of IL skills in high schools

Findings for this study have indicated that it is imperative that IL skills be imparted or taught at a high school level. This is necessitated by the new outcome based system of education (OBE) which is resource-based and requires learners to be able to access, locate and use information to complete school projects.

6.4.2 Basic IL intervention programme

In regard to the purpose of the study, namely the investigation of the extent and nature of students' IL inadequacies, findings validated IL inadequacies in the majority of first-year students. This highlighted the need for an IL intervention programme that would start at a very basic level. It should be broken down according to the objectives of the study, with each objective allocated a certain time period. While it is acknowledged that some of the aspects mentioned below which need to be addressed are arguably better positioned outside of a "basic" programme, for example, topic analysis and evaluation of information sources (in the light of Bloom's taxonomy and hierarchy of lower and higher order skills), they are all important and whether they are included at a basic level or otherwise would depend on each institution.

- basic computer skills
- knowledge of library layout and organization
- the purpose of a library catalogue and information retrieval skills
- the ability to distinguish printed and electronic information sources and information within those sources
- topic analysis and referencing
- the evaluation of information resources.

Although the overall performance of first-year students was poor, performance was worse with higher order thinking skills such as topic analysis, referencing and evaluation of various information sources. This is in line with the literature that suggested that students from HDI lack skills to critically analyze information (Sayed and De Jager 1998: 11), yet the importance of higher order cognitive skills is emphasized. Thinking skills, such as being able to evaluate critically, to sift, assess and source information, have to be taught and gained by experiential learning and practice and cannot be acquired overnight (Sayed and De Jager 1998: 9, 11). It is evident that these aspects need more attention and more time relative to other components of the programme with MANTEC first-year students, as well. How much more time and how much more attention would need to be discussed and agreed upon.

For an effective IL programme, the following will be needed:

- more time allocated for all the components of the programme, and not only two hours as indicated in section 1.2 (under background to the study) of chapter 1. For example, basic computer training, which involves keyboard training and other basic computer knowledge, would require considerably more time than the few minutes which are currently allocated to it
- timing for the IL programme to be at the beginning of each semester before the commencement of academic programmes
- the IL programme to be implemented as a compulsory generic course that runs for two to three days before the commencement of lectures
- more materials and human resources to be committed to the programme
- collaborative and committed effort on the part of all parties involved, namely students, library staff and academic staff
- follow-up surveys after each component, to determine the effectiveness of the programme
- documentation of IL programme assessment results, which would help the librarians know the effectiveness of the programme.

Finally, it is evident from the above that the information literacy programme recommended above is a “stand-alone” intervention. It is recognized (as discussed in the introductory chapters) that IL needs to be integrated into the broader curriculum. To what extent IL is indeed integrated into the curriculum at MANTEC was not a focus of this study. It is argued, however, that given the limited IL skills that students bring with them to tertiary level study at the Technikon, the programme mentioned above is, and would be, crucial in laying an IL foundation for students and that these

skills would, ideally, be re-enforced and developed during students' subsequent engagement with the curriculum.

6.5 Recommendations for further study

The researcher suggests the following for further study:

6.5.1 Assessment of the effectiveness of the IL programme

Outcomes based education has become a growing trend. SAQA (2000) in De Jager and Nassimbeni (2003: 109) emphasizes quality education and outcomes. The concern is to educate students to become independent lifelong learners who would become active citizen participants for the global benefit in all aspects of life, socially, economically and educationally, in a democratic South Africa. Having assessed information literacy skills of first-year students at a pre-library orientation and instruction phase, it would be essential to assess their IL skills after completion of an IL programme, to assess its effectiveness.

6.5.2 Replication of the study in other tertiary institutions with a different student body and a different past to that of MANTEC

In order to be able to compare the findings of this study and devise a standardized assessment tool and subsequent corrective measures, the researcher recommends that similar studies be conducted in other higher education institutions, particularly those with a different student body and a different past to that of MANTEC.

6.6 Summary

Chapter 6 comprised an introduction, summary of the study, conclusions, recommendations and suggestions for further research in relation to the IL skills of first-year students at MANTEC.

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APPENDICES

Appendix 2

Questionnaire to assess information literacy skills of first year students at Mangosuthu Technikon

INSTRUCTION

Please remember that this is **not** a test. If you do not know the answer to a question, it does not matter. Please answer as truthfully as possible.

SECTION 1

DEMOGRAPHIC QUESTIONS

Please provide a tick () or a cross (X) next to your choice, in the brackets provided.

1 What diploma are you registered in?

- 1.1 Pre-tech (Electrical Engineering).....[]
- 1.2 Pre-tech (Chemical Engineering).....[]
- 1.3 Pre-tech (Civil Engineering).....[]
- 1.4 Pre-tech (Mechanical Engineering)..... []
- 1.5 Office Management.....[]
- 1.6 Public Finance Accounting and Law.....[]
- 1.7 Marketing.....[]
- 1.8 Environmental Science (Agriculture).....[]
- 1.9 Information Technology.....[]
- 1.10 Human Resources Management.....[]
- 1.11 Other.....[]

2 What is your gender?

- 2.1 Female.....[]
- 2.2 Male.....[]

3 What is your age?

- 3.1 15-18..... []
- 3.2 19-21.....[]

SECTION 3
LIBRARY CATALOGUE and INFORMATION RETRIEVAL

Please tick only the one correct answer

- 7 What is the purpose of a library catalogue?
- 7.1 To identify and locate library materials.....[]
- 7.2 To do assignments.....[]
- 7.3 To find different sections of the library.....[]
- 7.4 To know librarians.....[]
- 7.5 I do not know.....[]
- 7.6 The title of the book is “Affirmative Action” by “Bongani Mchunu”
-
- 8 The first thing to use in the library in order to get the book is: -
- 8.1 Library catalogue.....[]
- 8.2 Library shelves.....[]
- 8.3 Subject Librarian.....[]
- 8.4 Library dictionary.....[]
- 8.5 I do not know.....[]
-
- 9 Who is that author of the book?
- 9.1 Mchunu Bongani.....[]
- 9.2 Affirmative action.....[]
- 9.3 Khumalo Bongani.....[]
- 9.4 Msomi Bongani.....[]
- 9.5 I do not know.....[]
-
- 10 Please tick the correct Dewey Decimal Classification number or call number as it normally appears on the spine of the book: -
- 10.1 MCH 331.133.....[]
- 10.2 3.31133 MCH.....[]
- 10.3 33.1133 MCH.....[]
- 10.4 331.133 MCH.....[]
- 10.5 I do not know.....[]

SECTION 4

SOURCES OF INFORMATION IN THE LIBRARY

I) Printed and electronic information sources

Please tick correct answer/s

11 The following are some of the printed sources of information that can be found in the library: -

- 11.1 Compact discs.....[]
- 11.2 Books.....[]
- 11.3 Journals and magazines.....[]
- 11.4 Audio cassettes.....[]
- 11.5 Reference books like dictionaries and encyclopaedias.....[]
- 11.6 Video cassettes.....[]
- 11.7 Newspapers.....[]
- 11.8 I do not know.....[]

12 The following are the electronic sources of information that can be found in the library: -

- 12.1 Books.....[]
- 12.2 Journals.....[]
- 12.3 Books and journals available on the Internet.....[]
- 12.4 Compact discs.....[]
- 12.5 Audio cassettes.....[]
- 12.6 Video cassettes.....[]
- 12.7 I do not know.....[]

II) Library reference sources

Please tick only the one correct answer

13 What does one use a dictionary for?

- 13.1 To find a geographic location[]
- 13.2 To find a definition of a term or phrase.....[]
- 13.3 To find a name of a popular historian.....[]
- 13.4 To find information about careers.....[]
- 13.5 I do not know..... []

14 A reference work containing a summary of information on most branches of knowledge usually arranged alphabetically is known as an: -

- 14.1 Dictionary.....[]
- 14.2 Encyclopaedia.....[]
- 14.3 Atlas.....[]
- 14.4 Almanac.....[]
- 14.5 I do not know.....[]

III) Information within sources

Please tick only the one correct answer

15 What do we call the list of chapters in a book, with page references?

- 15.1 Bibliography.....[]
- 15.2 Index.....[]
- 15.3 Table of contents.....[]
- 15.4 Introduction.....[]
- 15.5 I do not know.....[]

16 The part of a book that contains an alphabetical list of topics or subjects with page references is known as the: -

- 16.1 Bibliography.....[]
- 16.2 Introduction.....[]
- 16.3 Table of contents.....[]
- 16.4 Index.....[]
- 16.5 I do not know.....[]

17 What do we call the list of references at the end of the book?

- 17.1 Index.....[]
- 17.2 Introduction.....[]
- 17.3 Table of contents.....[]
- 17.4 Bibliography.....[]
- 17.5 I do not know.....[]

SECTION 5

TOPIC ANALYSIS

18 You are given the following topic to discuss “**Voting registration of Umlazi community in Durban during the 8th and 9th November 2003**” Analyse the topic by identifying the following elements: -

- a) The main theme of the topic
- b) The geographic parameters of the topic
- c) The time parameters of the topic

19 It is important to analyze a title or a topic as done in **Question 18**. Please explain why?.....

.....

.....

.....

.....

20 If you have a topic you do not understand, what two sources of information would you first use and why?

.....

.....

.....

.....

SECTION 6

REFERENCING

Please indicate whether the following statements are True or False

21 At the end of an assignment, it is important to list all printed and non-printed sources of information used: -

21.1 True.....[]

21.2 False.....[]

21.3 I do not know.....[]

22 Referencing is done to acknowledge the work of others: -

22.1 True.....[]

22.2 False.....[]

22.3 I do not know.....[]

23 Referencing of a book must be done alphabetically starting with the title of a book, author's surname and initial, date of publication and publisher's name: -

23.1 True.....[]

23.2 False.....[]

23.3 I do not know.....[]

SECTION 7

EVALUATION OF INFORMATION RESOURCES

Please indicate whether the following statements are True or False

24 The kind of information found on the Internet is the same kind found in academic libraries:

24.1 True.....[]

24.2 False.....[]

24.3 I do not know.....[]

25 Some information on the Internet is biased and distorted: -

25.1 True.....[]

25.2 False.....[]

25.3 I do not know.....[]

26 The date of publication of the source of information is a reasonable indication of how recent the facts are: -

- 26.1 True.....[]
26.2 False.....[]
26.3 I do not know.....[]

27 Please indicate whether the following statement is a **fact** or an **opinion**: -

- 27.1 Fact.....[]
27.2 Opinion.....[]
27.3 I do not know.....[]

28 You are having to address an Umlazi community on the following topic: -

“Treatment for HIV / AIDS in South Africa”

Please indicate to what extent you would trust the following information sources in terms of **objectivity or fairness** – (not affected by emotion or personal bias)

Please use the following numbers for your rating: -

- 5 = Trust a lot**
4 = Trust
3 = Trust a little
2 = Do not trust at all
1 = I do not know

- *A report on the Television issued by the Minister of Health Dr Manto Shabalala-Msimang.....*
- *A one page article in the “Ilanga” newspaper.....*
- *A one page article in the “True Love” magazine.....*
- *A journal article in the “South African Medical Journal”.....*
- *A report by an unknown writer appearing on the Internet.....*

MANY THANKS FOR TAKING YOUR TIME TO ANSWER THIS QUESTIONNAIRE.
PLEASE RETURN IT TO THE RESEARCHER

N. ZIMU

Appendix 3

ESAL USER EDUCATION STANDARDS (1999-2002)

Draft in 1999

Implementation in 2002

Title of course

Library User Education (Information retrieval - first level)

Purpose of the course

The purpose is to enable 1st year students as library users to: -

- recognize the library as a shared resource and appreciate the need for a responsible attitude towards the shared use of library materials.
- become familiar with the physical layout of the library, location of materials, the catalogue and key service points
- become familiar with hours of opening and conditions of library use
 - by understanding borrowing rights
 - by understanding how the Short Loan system works
- be able to locate information sources in the library
 - by learning how to use the OPAC catalogue
 - by identifying the parts of a catalogue record
 - by understanding the link between the catalogue record and locating an item on the shelves
- understand the arrangement of material on the shelves
 - by developing a working knowledge of the DDC system
 - by understanding the purpose of call numbers
- distinguish between different types of sources
 - by learning about reference books and open shelves books
 - by identifying the parts of a book and their purpose
 - by recognizing that there exists more than one source of information on a topic and why
- be able to analyze a given topic to understand the requirements of the topic and draw up an appropriate search strategy in order to find relevant information sources
- be able to reference cited sources in a particular format and understand the components of a bibliographic reference and where to locate these components.

Statement of specific learning outcomes for the course

The student will be able to: -

- use the resources of the library
- demonstrate a working knowledge of the principles of the organization of information
- analyze a topic and formulate a search strategy
- identify, retrieve, exploit and acknowledge appropriate information sources.

List of content topics

- distinguish between types of sources
- understand the layout of information within sources
- analyze a topic, identify search terms and formulate a search strategy
- identify possible sources to use to supply information for a given need
- employ a range of search strategies to locate, retrieve and evaluate information
- physically access information in library sources
- acknowledge sources in a specified format

Details of the content

1. General introduction

- why students need the library in their academic careers
- overview of the library programme.

2. About the particular library the students are in

- library layout
- basic information such as registration, hours of opening
- services offered
- terminology
- brief overview of sources of information
- code of conduct.

3. Organization of information (classification)

- explanation of the Dewey Decimal Classification system or any other system used (exercises to be made with students).

4. Location and retrieval of sources (catalogue)

- what is a catalogue
- how to use the OPAC – steps to use it

parts of a record

focus on location mark and prefix

know how to find the book on the shelf

(exercises to be made with students: - must have a demonstration lesson with explanation plus hands on practice. To give examples to look up and follow through to the shelves, could use power point or slides or simulated search via overheads or workbook).

5. Sources of information

- nature of information
the different ways in which information is presented in sources such as statistical different kinds of sources like dictionaries.
- information within sources
parts of a book such as contents page, index and bibliography. An explanation on how to use the parts
- why use more than one source of information
explain reasons for using more than one source to answer an assignment

(suggestions for exercises include lecture with overheads or handouts/flipchart, in pairs or groups, compare or consider actual items and discuss, could also have a written exercise about the parts of a book or workbook).

6. Topic analysis

- what it is and why important
- how to analyze a topic
- drawing up a plan to work from using topic analysis

(suggestions for exercises – lecture/discussion then actual examples with the class as a whole and exercise in small groups. Use past exam paper questions or workbook).

7. Search strategy

- how topic analysis helps determine a search strategy for information sources – how to ask the right questions to know where to go
- listing possible sources of information and good starting points
(suggestions for exercises – lecture/discussion with exercises with the class as a whole or small group work or workbook).

8. Referencing

- reasons why referencing is necessary
- components of a reference
- where the components come from (and relevant information such as only one city of publication to be entered)

(suggestions for exercises – lecture/discussion with overheads/flipchart/handouts, and exercises in group work or individuals or pairs).

Method of operation

- At the beginning of 2002 the ESAL User Education Task Group implemented a User Education Pilot Project Study among member institutions with the aim of promoting the usage of the first level user education standards among member institutions.
- After the session, students were to be assessed in order to test the effectiveness of the programme.

Appendix 4

Memorandum for Section 2, 3, 4, 5, 6 and 7 of the questionnaire

SECTION 2

LIBRARY LAYOUT / ORIENTATION

Please tick only the one correct answer

1. The library is used for the following purposes: -
 - 1.1 **Research, borrow books, reading newspapers and photocopying.**
2. The public access area that consists of books you can borrow and take home is known as the: -
 - 2.1 **General Lending Collection**
3. The desk where books are borrowed and returned is known as the: -
 - 3.1 **Issue desk**
4. Dictionaries and encyclopaedias are found in the: -
 - 4.1 **Reference Collection**
5. Books in this section can be borrowed for a limited time and overnight only: -
 - 5.1 **Short Loan**
6. This section keeps journals and magazines and can only be used in the library: -
 - 6.1 **Periodicals Section**

SECTION 3

LIBRARY CATALOGUE AND INFORMATION RETRIEVAL

Please tick only the one correct answer

7. What is the purpose of a library catalogue?

a. To identify and locate library materials

8. The title of the book is "affirmative Action" by "Bongani Mchunu"

The first thing to use in the library in order to get the book is: -

8.1 Library catalogue

9. Who is the author of the book?

9.1 Mchunu Bongani

10. Please tick the correct DDC number or call number as it normally appears on the spine of the book: -

10.4 331.133 MCH

SECTION 4

SOURCES OF INFORMATION IN THE LIBRARY

D) Printed and electronic information sources

Please tick correct answer/s

11. The following are some of the printed sources of information that can be found in the library: -

11.2 Books

11.3 Journals and magazines

11.5 Reference books like dictionaries

11.7 Newspapers

12. The following are the electronic sources of information that can be found in the library: -

12.3 Books and journals available on the internet

12.4 Compact discs

12.5 Audio cassettes

12.6 Video cassettes

II) Library reference sources

Please tick only the one correct answer

13. What does one use a dictionary for?

13.2 To find a definition of a term or phrase

14. A reference work containing a summary of information on most branches of knowledge, usually arranged alphabetically is known as an: -

14.2 Encyclopaedia

III) Information within sources

Please tick only the one correct answer

15. What do we call the list of chapters in a book, with page references?

15.3 Table of contents

16. The part of a book that contains an alphabetical list of topics or subjects with page references is known as the: -

16.4 Index

17. What do we call the list of references at the end of the book?

17.4 Bibliography

SECTION 5
TOPIC ANALYSIS

18. You are given the following topic to discuss “Voting registration of Umlazi community in Durban during the 8th and 9th November 2003” Analyze the topic by identifying the following elements: -

- a) The main theme of the topic... “Voting registration”
- b) The geographic parameters of the topic... “Umlazi in Durban”
- c) The time parameters of the topic ...“8th and 9th November 2003”

The researcher used the following rating scale: -

- 5 Very good** The student answered all 3 questions correctly
- 4 Good** The student left one answer out like entering only one date and left one out or one place and left one out.
- 3 Satisfactory** The student left two answers out like time parameters
- 2 Weak** The student left more than two answers out
- 1 No response or Do not know**

19. It is important to analyze a title or a topic as done in **Question 18**. Please explain why?

- 19.1 To have a clear understanding of a topic**
- 19.2 To know which area does one’s topic cover**
- 19.3 To be specific about what one needs to discuss**
- 19.4 To have a full understanding of what is being asked**

The researcher used the following rating scale: -

- 5 Very Good** The student indicated a full understanding of the question as follows: -
- Student 1:** - “so that you focus on the topic, your discussion does lose context”
- Student 2:** - “to have full understanding of what is being asked of you” “to be able to completely be specific on what is being asked of you”
- Student 3:** - “so as to ensure that the individual knows what the topic is about and what is required of the individual”

4 Good *The student indicated some understanding. She/He was uncertain in his/her response: -*

Student 1: - “you need to know what to discuss which area does your topic cover or involve” ‘you also need to know the dates on which that registration took place”

3 Satisfactory *The student indicated some understanding. She/He was uncertain in his/her response with some grammatical errors: -*

Student 1: - “in order get more information about topic and to make sure that information is correct”

2 Weak *The student’s answer was out of context with some grammatical errors: -*

Student 1: - “so it will be easier to understand what are they talking where did it take place and what time did it happen

1 No response or Do not know

20 If you have a topic you do not understand what two sources of information would you first use and why?

20.1 Dictionary: - to find a definition of a term or phrase in relation to the topic

20.2 Encyclopaedia: - to find a summary of information on most branches of knowledge in relation to the topic

The researcher used the following rating scale: -

5 Very Good *The student answered as indicated above: -*

Student 1: - “dictionary – to get the meaning of each and very word”

“encyclopaedia – so that I’ll know the characteristics of that certain topic”

4 Good

The student gave one of the above answers: -

The student gave other options such as librarian,

computer and Internet

Student 1: - "dictionary to find the meaning of the topic"

"library to find the relevant book or information"

"subject librarian will help me with the topic"

3 Satisfactory

The student gave only one correct answer: -

Student 1: - "dictionary to find meaning of words"

2 Weak

The student's answer was insufficient: -

Student 1: - "find a book where I can find information on the relevant topic"

1. No Response or Do not know

SECTION 6

REFERENCING

Please indicate whether the following statements are True or False

21. At the end of an assignment, it is important to list all printed and non-printed sources of information used
- 21.1 True
22. Referencing is done to acknowledge the work of others
- 22.1 True
23. Referencing of a book must be done alphabetically starting with the title of a book, author's surname and initial, date of publication, place of publication and publisher's name
- 23.2 False

SECTION 7

EVALUATION OF INFORMATION RESOURCES

Please indicate whether the following statements are True or False

24. The kind of information found on the Internet is the same kind found in academic libraries: -
- 24.2 False
25. Some information on the Internet is biased and distorted: -
- 25.1 True
26. The date of publication of the source of information is a reasonable indication of how recent the facts are: -
- 26.1 True
27. Please indicate whether the following statement is a fact or an opinion
"Johannesburg is the largest city in South Africa"
- 27.1 Fact

28. You are having to address an Umlazi community on the following topic: -

“Treatment for HIV ? AIDS in South Africa”

Please indicate to what extent you would trust the following sources in terms of objectivity or fairness – (not affected by emotion or personal bias)

Please use the following rating scale: -

5 = Trust a lot

4 = Trust

3 = Trust a little

2 = Do not trust at all

1 = I do not know

- A report on the Television issued by the Minister of Health Dr Manto Shabalala-Msimang...3 / 4...
- A one page advert in the “Ilanga” newspaper...3 / 2...
- A one page article in the “True Love” magazine...3 / 4...
- A journal article in the “South African Medical Journal”...4 / 5...
- A report by an unknown writer on the Internet...2...

The researcher used the above rating scale.

The student was given one point for either of the two rating scale where two apply such as in a “report on the Television issued by the Minister of Health Dr Manto Shabalala-Masimang”, the student who answered “3” was given one point and the other who answered “4” was also given a point.

4.1.1.3 Library background

Table 3: Previous library usage experience

N = 170

| Library usage response | Frequency | Percent | Gender | Age | Diplomas |
|-------------------------------|------------------|----------------|------------------------|---|--|
| Yes | 101 | 59.4 | 61 Females 40 Males | Above 22 = 17 19-21 = 50 15-18 = 34 | Marketing = 29 Pub Fin Acc Law = 23 Engineering = 22 Info Technology = 13 Office Management = 9 Hum.Res.Man = 4 |
| No | 69 | 40.6 | 25 Females 44 Males | Above 22 = 4 19-21 = 44 15-18 = 21 | Pub Fin Acc Law = 26 Engineering = 17 Marketing = 13 Office Management = 07 Info Technology = 03 Hum.Res.Man = 03 |
| Total | 170 | 100.0 | 170 | 170 | 170 |

As indicated in Table 3, 101 (59.4%) respondents had used a library before. The gender split was 61 females and 40 males. Sixty-seven (66.3%) respondents were above 19 years of age and 34 (33.7%) were between 15 and 18 years of age.

Table 15b: Importance of analyzing a title or topic**N=170**

| Response | Frequency | Percent |
|-----------------|------------------|----------------|
| Do not know | 118 | 69.4 |
| Weak | 29 | 51.9 |
| Satisfactory | 12 | 23.1 |
| Good | 5 | 9.6 |
| Very Good | 6 | 11.5 |
| Total | 170 | 100.0 |

In Table 15b, it is evident that most respondents avoided answering this open question on why it is important to analyze a topic, as the “Very good” response rate was only 6 (11.5%), while 118 (69.4%) gave a “Do not know” response.

Table 15c: Two sources of information that can be used to help analyze and understand a topic**N=170**

| Response | Frequency | Percent |
|-----------------|------------------|----------------|
| Do not know | 120 | 70.6 |
| Weak | 22 | 44.0 |
| Satisfactory | 21 | 42.0 |
| Good | 5 | 10.0 |
| Very Good | 2 | 04.0 |
| Total | 170 | 100.0 |

As can be seen in Table 15c, the “Very good” response rate was 2 (4.0 %), while a significant majority, 120 (70.6%), gave a “Do not know” response.

4.1.6 Section 6: Referencing

The purpose of questions asked in this section was to assess respondents' awareness of the significance of referencing, including why it is done and their understanding of its logic.

The results are given in Tables 16a, 16b and 16c.

Table 16a: List of sources used is essential at the end of an assignment

N = 170

| Response | Frequency | Percent |
|---------------|------------|--------------|
| True | 73 | 42.9 |
| False | 37 | 21.8 |
| I do not know | 60 | 35.3 |
| Total | 170 | 100.0 |

As indicated in Table 16a, the majority of 97 (57.1%) either did not know the significance of referencing or answered incorrectly.

Table 16b: Referencing is done to acknowledge the work of others

N = 170

| Response | Frequency | Percent |
|---------------|------------|--------------|
| True | 52 | 30.6 |
| False | 30 | 17.6 |
| I do not know | 88 | 51.8 |
| Total | 170 | 100.0 |

In Table 16b, the majority of respondents 118 (69.4%) either did not know the correct answer or gave an incorrect answer.

- 3.3 22-25.....[]
- 3.4 26-29.....[]
- 3.5 30 and above..... []

4 Have you used any library before?

- 4.1 Yes.....[]
- 4.2 No.....[]

5 If the answer is yes, please indicate the type of library used. (Please tick those that apply)

- 5.1 Public library.....[]
- 5.2 School library.....[]
- 5.3 Technikon library.....[]
- 5.4 Other. Please specify.....[]

6 For what purpose, have you used the library or libraries? (Please tick those that apply)

- 6.1 Study and / or research in the library using the library material..... []
- 6.2 Study and / or research in the library using my own material.....[]
- 6.3 Borrowing books like novels for leisure reading.....[]
- 6.4 Reading newspapers and magazines.....[]
- 6.5 Social gathering and meeting friends.....[]
- 6.6 Other. Please specify.....[]

7 Please indicate how frequently the library has been used in the past year.

Often: 1 to 5 times per week

Sometimes : less than once a week like once a month

- | Never | Often | Sometimes | Never |
|-----------------------------------|----------|-----------|-------|
| 7.1 Public library.....[] |[] |[] | |
| 7.2 School library.....[] |[] |[] | |
| 7.3 Technikon library.....[] |[] |[] | |
| 7.4 Other. Please specify.....[] |[] |[] | |

8 Have you ever used a computer?

- 8.1 Yes.....[]
- 8.2 No.....[]

If the answer is No, please proceed to **Question 12**

9 Where do you mostly use a computer?

- 9.1 At Mangosuthu Technikon.....[]
9.2 At home.....[]
9.3 At Internet café.....[]
9.4 Other. Please specify.....[]

10 For what purpose/s do you use a computer? (Please tick those that apply)

- 10.1 Playing games.....[]
10.2 Searching the world wide web (Internet).....[]
10.3 Accessing library databases.....[]
10.4 Word processing.....[]
10.5 Using E-mail facility.....[]
10.6 Other. Please specify.....[]

11 Please indicate how frequently you have used a computer in the past year?

- 11.1 Often (1 to 5 times or more per week).....[]
11.2 Sometimes (less than once a week like once a month).....[]
11.3 Never.....[]

12 Have you attended library orientation and instruction programme before?

- 12.1 Yes.....[]
12.2 No.....[]

13 If the answer is Yes, at which library and when (Please give the year/s)

SECTION 2

LIBRARY LAYOUT / ORIENTATION

Please tick only the one correct answer

1 The library is used for the following purposes: -

- 1.1 Research, borrow books, reading newspapers and photocopying et..... []
- 1.2 Conference gatherings.....[]
- 1.3 Social gatherings.....[]
- 1.4 Sick bay.....[]
- 1.5 I do not know.....[]

2 The public access area that consists of books you can borrow and take home is known as the: -

- 2.1 General Lending Collection.....[]
- 2.2 Reference Section.....[]
- 2.3 Short Loan.....[]
- 2.4 Periodicals Section.....[]
- 2.5 I do not know.....[]

3 The desk where books are borrowed and returned is known as the: -

- 3.1 Issue desk.....[]
- 3.2 OPAC desk.....[]
- 3.3 Internet desk.....[]
- 3.4 Study desk.....[]
- 3.5 I do not know.....[]

4 Dictionaries and encyclopaedias are found in the: -

- 4.1 Reference Collection.....[]
- 4.2 Short Loan Collection.....[]
- 4.3 Periodicals Section.....[]
- 4.4 General Lending Collection.....[]
- 4.5 I do not know.....[]

5 Books in this section can be borrowed for a limited time and overnight only: -

- 5.1 Short Loan.....[]
- 5.2 Reference Section..... []
- 5.3 General Lending Collection..... []
- 5.4 Periodicals Section..... []
- 5.5 I do not know.....[]

6 This section keeps journals and magazines and can only be used in the library: -

- 6.1 Periodical Section.....[]
- 6.2 Reference Section.....[]
- 6.3 Cataloguing Section.....[]
- 6.4 Short Loan section.....[]
- 6.5 I do not know.....[]

Appendix 1

Covering letter for the questionnaire

30 January 2004

Dear Student

Questionnaire to assess information literacy skills of first year students at Mangosuthu Technikon

I am a registered student for the Master of Information Studies degree at the University of KwaZulu-Natal (Pietermaritzburg). I am conducting a survey on the assessment of information literacy skills (IL) skills of first year students at Mangosuthu Technikon. The aim is to determine the level of IL skills that first year students bring to the tertiary institution. Since Mangosuthu Technikon library is still trying to establish a suitable IL curriculum for its first year students, the findings of the survey will contribute towards the implementation of a relevant IL curriculum. This will be of benefit to you, the students. Your participation is thus most important

This research forms part of the requirements for the Master of Information Studies programme, the researcher is pursuing. I will be most grateful if you could take some time to complete the questionnaire without revealing your identity.

After completing the questionnaire, please return it to the researcher.

Thank you

Yours sincerely

A. N. Zimu (Ms)