

An investigation into the possibility of mainstreaming library user education into the curriculum of the Engineering Faculty of the M.L. Sultan Technikon

By

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Submitted in partial fulfilment of the requirements for the degree of Master of Information Studies, University of Natal, Pietermaritzburg.  
June 2000

## ABSTRACT

This study investigated whether it is possible to include user education in the curriculum of the Engineering Faculty at the M.L. Sultan Technikon. Although the user education programme is offered to all students at the Technikon, it is based on an informal arrangement between the lecturer and the librarian. The programme is not time-tabled or credit-bearing, and many students regard it as a course outside the curriculum which has little, if any, impact on their studies. In a bid to assess the feasibility of including user education in the curriculum, the study sets out to establish the views of the academic staff of the Engineering Faculty and the librarians from the Library as well as those the Department of Library and Information Studies, regarding the inclusion of user education. A further objective of the study is to determine what type of skills both groups of respondents think should be taught in user education and who should be teaching the course.

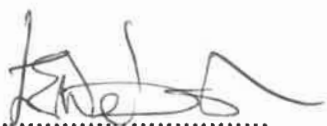
A description of the M.L. Sultan Technikon and the origins of its establishment and the impact of the recent inclusion of outcomes-based education in educational institutions in South Africa provide an introduction to the research. User education and its origins in tertiary institutions are discussed and the literature dealing with the inclusion of user education in international and local institutions is reviewed.

The population of this study consisted of ninety-one respondents, eighty from the lecturing staff of the Engineering Faculty, six librarians from the Library and five from the Library and Information Studies Department. Two population-specific questionnaires were designed and the method and data collection technique used in this study was the survey and the self-administered questionnaire. Thirty-two (40 %) questionnaires were returned from the Engineering Faculty and seven (64 %) from the librarians. Of the 7 responses from the librarians 4 were from the practicing librarians and 3 from the librarians from the Department.

The findings of the survey reveal that the majority of both groups of respondents support the possible inclusion of user education into the curriculum of the Engineering Faculty. The ability to use the online public access catalogue (OPAC), computer literacy and information in electronic format were rated as important skills by the Engineering Faculty, while the librarians rated the ability to use the OPAC and indexes and the ability to find journals as important skills that should be taught in the user education programme. Conclusions, recommendations and suggestions for further research are made in the light of the results of the survey.

## DECLARATION

This thesis is the original work of the researcher and has not been submitted in any form to another university. Where use was made of others, it has been duly acknowledged in the text and included in the bibliography.



.....  
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## **Acknowledgements**

I would like to thank God for giving me the strength and guidance to complete this thesis and for protection on my regular trips to Pietermaritzburg.

My gratitude to the following people for their contribution towards this thesis:

●Athol Leach and Fiona Bell, my supervisors for their guidance and support.

●My colleagues at the M.L. Sultan Technikon in the Library , the Engineering Faculty and the Department of Library and Information Studies for completing the questionnaires.

●All my friends for their support in particular to Sandra Narismulu from the Inter-Library Loans Department for her unstinting support, loyalty and encouragement and for locating information for me and Trish Gierke for her meticulous proof-reading.

●My children Simone, Gareth and Candice for their patience, tolerance and love throughout this period.

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## LIST OF ACRONYMS AND ABBREVIATIONS

DOE/EU	Department of Education/ European Union
INFOLIT	Information Literacy
BTECH	Bachelor of Technology
CD ROM	Compact Disc with Read only Memory
DTECH	Doctor of Technology
MTECH	Master of Technology
OBE	Outcomes Based Education
OPAC	Online Public Access Catalogue
SABS	South African Bureau of Standards
SAILIS	South African Institute of librarianship and Information Science

## **CHAPTER 1**

### **GENERAL INTRODUCTION**

#### **1.1 INTRODUCTION TO THE STUDY**

This chapter provides an introduction to the study, followed by the problem statement and the aims and objectives of the study, definitions of the terms used in the study and a short summary of user education in South African tertiary institutions.

As we are being catapulted into the twenty-first century, it is becoming clear that technological developments have advanced to such an extent that the ability to access and effectively use information will be an essential requirement for a literate person in the new millennium. We are living in the information age and are continuously being bombarded by information in various formats and via various types of media such as the Press, books, periodicals, television, computers, radio and electronic databases. The shelf-life of information is simultaneously decreasing at a rapid pace. In the past the sum total of knowledge was imbedded in one's memory. But now, because of the proliferation of information, it is no longer possible to know everything there is to know about a particular subject. No single person, or institution for that matter, can possess all the information on a particular subject, as there is just too much to assimilate. Knowing how and where to access information will be the key to survival in the information age (Lennox and Walker 1992: 2).

The information age has resulted in the demise of the 'job' - a position with a fixed set of specific responsibilities - and ushered in the birth of the 'knowledge worker' - one who can learn, apply information and knowledge, and solve problems as required (Dolence and Norris 1995: 30). In other words, those who are informed or who know how to remain informed, will have the competitive edge. Therefore, in the long term,

the possession of information skills or lack thereof has a direct impact on one's ability to deal with a changing environment.

According to Da Silva (1997), the weekday edition of the 'New York Times' carries more information than the average person in the 17<sup>th</sup> century could digest in a lifetime. Not only has more information been generated in the last three decades than in the previous five thousand years, but the total of all printed information doubles every five years (Bundy 1998). The sheer volume of information resulting from improvements in technology, and the spiralling variety of ways in which it is formatted, has made it increasingly essential for librarians to become technically adept at searching for information and teaching library users to search, analyse and use relevant information. The mere act of identifying possible information sources, retrieving information from those sources, and then choosing the specific information that is required, can become a daunting task to a learner who has not acquired information skills.

Students of the information age need to be 'knowledge navigators', in order to develop the capacity to negotiate a pathway through the overwhelming amount of information (Dolence and Norris 1995: 30). Ideally, this skill should be acquired early in the student's career and become a lifelong skill. One would therefore assume that user education (see 1.2 below) would be accepted as an important element in all educational programmes. But as the literature review reveals, this is not necessarily the case.

## **1.2 LIBRARY USER EDUCATION**

User education can be defined as the process whereby library users are taught where, how to find and use information. Many authors such as Rader (1995), Breivik (1992) and Leckie and Fullerton (1999) use the terms 'user education' and 'information

literacy' interchangeably. These terms will be clarified in Section 1.6 ('Definition of terms'). Judging by the current literature and documentation on user education nationally and internationally, there is a strong leaning towards making user education an intrinsic part of the educational programme at tertiary institutions.

The inability of the majority of first-year students at tertiary institutions in South Africa to recognize a need for information, locate the information, evaluate and use the information has been described by Bell (1990) ; Behrens (1992 & 1993) ; Zondi (1992) ; Ruth (1997) and Henning and Oosthuizen (1998), to mention but a few. On the international front respected professionals such as Breivik (1988 & 1992), Rader (1995 & 1997) and Bruce (1994) have written extensively on the problem and are supporters of the inclusion of user education across the curriculum at academic institutions.

To this end, recent developments in education in South Africa have seen major and radical changes in the education system itself, as well as a shift of focus to the needs and attainments of the individual learner. Since 1994, the government has put into place mechanisms to make education more relevant to the country's changing needs. Transforming education meant that past historical imbalances could be redressed. One of the major changes has been the implementation, in phases, of Outcomes-Based Education (OBE), or Curriculum 2005.

According to this new educational approach :

“...learners should be able to collect, organise and analyse information...” and to “... collect, gather and organise information and conduct research...”

(National Department of Education 1997 :9, 27).

A person who is able to do the aforementioned is prepared for lifelong learning in that they will be able to find the relevant information for any task or decision they are faced with.

OBE, which is based on schooling systems in Scotland, New Zealand, Canada and Australia, creates learner-centred classrooms, replaces memory learning with understanding and encourages resource-based learning (Glover and Thomas 1999: 4). The emphasis is now on the outcomes of learning, rather than on the inputs, and on ensuring that learners can demonstrate competence in applying and using what they have learned, rather than demonstrating knowledge for its own sake. The traditional South African model of the educational system relied on the certification of the quality of inputs and the quality of the process, rather than on measurement of outcomes (Dolence and Norris 1995: 12). This 'industrial age' educational model is no longer appropriate to the learning needs of the information age (Dolence and Norris 1995: 12).

At tertiary level, academic staff and librarians have the self-appointed task of ensuring that when students ultimately leave the institution, they have acquired the necessary skills to be deemed information literate. On reviewing the South Africa's White Paper on Education (published March 1995), Behrens (1995: 254) states that in order to function in the current and future information society, students need to be taught how to become lifelong learners by utilizing information effectively in their personal and working lives. When one talks about lifelong learning, one is usually looking at preparing for what will be required beyond the formal system of education.

The literature indicates that there are many librarians who regard library user education as one of the basic functions of an academic library. It can be argued, however, that although user education has come of age there are still many issues that need to be resolved, for example, the fact that it is not integrated with other aspects of library services (International Encyclopaedia of Information and Library Science 1997: 455).

Prior to the twentieth century, the major concerns of academic libraries were the acquisition and preservation of materials. The twentieth century, especially the latter part, has seen a paradigm shift in this function. In addition to acquiring and preserving materials, not only are information sources being made more useful and accessible, but users are also being trained in the most effective methods of accessing information. After all, there is little point in stocking an extensive range of information sources if users are unable to access them. Librarians are thus seen as change agents, as they have moved from their role of custodians and conservators to teachers and educators (Roberts and Blandy 1989: 4).

According to Kaufman (1992) and Ruth (1997), the library user education programmes that are offered at some institutions are insufficient to provide users with the necessary skills to make them information literate. Most of the programmes focus on the skills that are required to facilitate the use of libraries, to the near exclusion of skills that will enable them to get, use and manage information throughout their lives (Kaufman 1992: 37). Research by Behrens (1991 and 1993), Rader (1995 and 1997), Breivik (1992), and Sayed (1998), has shown that most students enter tertiary institutions with only the barest knowledge of libraries and information sources.

Many new students have never seen a library before they arrive at a university or a technikon and their broad information skills are so limited that this seriously compromises their ability to study effectively (Ruth 1997: 171). Poor knowledge of libraries and how to use them is likely to be one of the reasons for the under-use of library facilities by undergraduates (Downward 1992: 29). Both Ruth (1997) and Popoola (1992: 162) criticise the methods of instruction in higher education in developing countries and claim that they are still very traditional, in that the 'spoon-feeding' approach is still in existence. Education is therefore not resource-based and there is a heavy reliance on lectures and textbooks.



Ruth's (1997: 171) investigation into student experience of the library at a higher institution of learning revealed that many higher institutions reinforce the school approach to learning. When students use the library, they do not look for information, but for a specific book, photocopy or notes. Lecturers perpetuate, through reserved or prescribed texts and articles, the belief that only those sources contain the required set of facts needed to pass the course. Academic staff still function as 'talking heads', and the learning experience is not an active one - students are rewarded for good memorization skills rather than independent learning (Farmer 1992: 105 ; Dolence and Norris 1995: 24).

In South Africa, the situation has been compounded, in that large sectors of society functioned without libraries or wholly inadequate libraries during the apartheid era and, to a great extent, still do today. Stadler (1993) chronicled the school library situation in South Africa during the previous regime. Most of the schools for blacks seriously lacked educational support services that were not regarded as essential. Essentials were, and in most cases still are, to have a roof on the school to keep out the elements, to have desks and chairs and, in a number of instances, electricity. A study undertaken in 1990 revealed that 76% of schools in what was then KwaZulu were without books or libraries (Stadler 1993: 9).

Not much has changed since Stadler's study, as indicated by Glover and Thomas (1999: 117). In their recent paper they state that some of the problems faced by the majority of South African schools are still "...impossibly large classes...space problems...and the paucity of equipment and physical resources" (Glover and Thomas 1999: 117).

The years of barely equipped and under-resourced schools, with poorly trained teachers, together with years of disrupted school education, also means that many of the students at tertiary institutions today are not able to manage without considerable

academic support.

### **1.3 LIBRARY USER EDUCATION AT M.L. SULTAN TECHNIKON**

#### **1.3.1 HISTORICAL BACKGROUND OF M.L. SULTAN TECHNIKON**

The M.L. Sultan Technikon is a tertiary institution providing career-oriented education. It is one of the several technikons in the country which were first established in the 1980s to provide post-school education for students seeking career training in the technologies, commerce and arts. Technikons are dedicated to a partnership role with commerce and industry in the provision of career education by offering in-service training that alternates with periods of technikon instruction (M.L.Sultan Technikon Prospectus 1999: 2-4) .

M.L. Sultan Technikon had its beginnings in 1927, when the Honourable Srinivasa Sastri approached the Minister of Education regarding the provision of facilities for technical education for Indians of Natal. After protracted negotiations and meetings between benefactors and government officials, the first part-time classes in commerce and technical subjects were started at Sastri College in 1930. In 1942 the original benefactor, Hajee Malukmohammed Lappa Sultan, made a donation of approximately twelve thousand five hundred pounds (£12 500), which was later increased to thirty-three thousand pounds (£33 000), towards the erection of a technical college which was named after him (M.L. Sultan 50<sup>th</sup> Anniversary Brochure). In 1946, the Minister of Education declared the M.L. Sultan Technical College an approved institution for higher education in terms of the Higher Education Act (Act no. 30 of 1923). The college opened branches in several outlying areas in Natal such as Pietermaritzburg and Stanger. In 1953 the City Council of Durban donated six acres of land at Currie's Fountain Centenary Road and the foundation stones for the first buildings were laid in 1954. The institution underwent a name change and change of status in 1979 when it

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became M.L. Sultan Technikon, a tertiary technical institution. It is still situated at Currie's Fountain, Centenary Road, in Durban, close to the Greyville Racecourse (M.L.Sultan Technikon Prospectus 1999: 2-4 ; M.L. Sultan 50<sup>th</sup> Anniversary Brochure).


### **1.3.2 THE M.L. SULTAN TECHNIKON TODAY**

M.L. Sultan Technikon has a total population of approximately ten thousand students. The Technikon offers a wide variety of programmes in the twenty-eight academic departments which make up the four faculties of Arts, Commerce, Engineering and Science. Besides a broad range of courses up to diploma level, the Technikon has been granted permission to offer programmes leading to the awarding of the Bachelor of Technology (BTech), Master of Technology (MTech) and Doctor of Technology (DTech) degrees.

The racial and gender disparities in science and technology in South Africa has raised serious concerns at all levels of society, especially at tertiary institutions, and is also highlighted in the White Paper on Science and Technology of 1996 (Department of Arts, Culture, Science and Technology 1996). At M. L. Sultan Technikon the throughput rates of engineering students compared to other faculties are very low. The possible inclusion of user education in the Faculty could prove to be a positive intervention at the Technikon and, if successful, could be implemented across all faculties.

The Engineering Faculty consists of the following eight departments :

- Department of Architecture
- Department of Building Management and Quantity Surveying
- Department of Chemical Engineering and Quality Assurance
- Department of Civil Engineering and Surveying
- Department of Electronic Engineering

- 
- Department of Mechanical and Industrial Engineering
  - Department of Power Engineering
  - Department of Town and Regional Planning

All the departments offer the post diploma qualification BTech and many also now qualify to offer the MTech and DTech degrees. At the time of the present study the teaching staff consisted of 80 lecturers, who were all surveyed for the study.

The Department of Library and Information Studies was established in 1987, It offered a National Diploma in Library and Information Science. Since 1999 students are able to qualify for the BTech, MTech and the DTech degrees in Library and Information Science. At the time of this study the teaching staff consisted of five lecturers, who were all surveyed for the study.

The B.M. Patel Library was built in 1984 and originally consisted of four floors, which housed more than 10 000 books and other non-book resources. It provided a comprehensive range of printed and electronic resources to support the academic programme and research in all disciplines. The current collection is in excess of 50 000 volumes and 900 journal titles. In addition to these traditional formats, the library has a collection of 1 700 audio-visual records, with viewing facilities. Librarians and academic staff are able to access a wide variety of electronic databases, both nationally and internationally. The library catalogue is fully automated and can be accessed via the library workstations or remotely from the departments (M.L. Sultan Technikon Prospectus 1999: 59).

The library staff consists of 24 professional and para-professional staff members. Of this group only librarians with a four-year qualification were surveyed for the study. This meant that only six librarians from the library were surveyed, of whom three were subject-librarians with several years experience, and five librarians from the

### **1.3.3 LIBRARY USER EDUCATION**

At the M.L. Sultan Technikon Library, the terms 'library orientation' and 'advanced library orientation' are used instead of the term 'user education'. The basic purpose of the orientation programme is to make the user self-reliant to search for and locate information.

#### **1.3.3.1 LIBRARY ORIENTATION**

Library orientation occurs both formally and informally at the institution. Informal user education takes place when the student approaches the information desk or the subject-librarian for help. Hands-on training, time permitting, is also often provided if requested by the student. Formal library user education consists of the basic library orientation and advanced library orientation programmes. Both of these programmes usually consist of one-off fifty-minute lectures which take place during the first semester. The library orientation programmes are publicized by notices that are sent well in advance to academic staff, urging them to make bookings for these programmes. Personal contact between the subject-librarians and the academic staff is also used as an aid to further publicize the programme.

#### **1.3.3.2 BASIC LIBRARY ORIENTATION**

The basic library orientation for the first-year students serves as an introduction to the physical location of the various sections and services of the library. This usually takes place at the beginning of the students' courses during the first semester. In most cases, one period is allocated for this programme, but lecturers who appreciate the value of the programme for students sometimes allow for a double period. The aim of

the basic library orientation course is to make the student aware of what is available in the library and how they should go about making use of the various services and facilities of the library. During the programme students view a ten-minute video of the library which, in a step-by-step manner, introduces them to library personnel and various essential service points. The online public access catalogue (OPAC) is demonstrated on a wide screen because there are not enough facilities for hands-on training for an entire class. Librarians demonstrate to students how to do an author, title and subject search. Further information is provided in the form of library leaflets and handouts.(Appendix D) Towards the end of the programme students are taken on a tour of the library, accompanied by senior Library and Information Science students. The decision to make use of students, as opposed to library staff, during the orientation tour was taken in the light of the benefits of peer teaching. The basic library orientation programme serves merely as an introduction to the library for the student and provides the necessary skills to be able to use the library immediately.

One of the main problems in scheduling the orientation programme is the fact that it is not time-tabled. Arranging with lecturers for a suitable time for library orientation can be problematic, as some of the lecturers are of the opinion that the library orientation programme is of little benefit to the students. Many are reluctant to relinquish "their period", as they feel that they do not have enough periods as it is and that knowledge of the library is something that the student will gradually master. Students themselves do not regard the programme as part of the academic curriculum because, whether or not they attend orientation, it has no effect whatsoever on their course-mark.

#### **1.3.3.3      ADVANCED ORIENTATION**

The advanced library orientation generally occurs during the second term of the first semester. This is directed at second- and third-year students and, as is the case in basic library orientation, depends on the willingness of the lecturer to forego a lecture.

The advanced orientation course is more subject specific, in the sense that students are introduced to a range of sources available to them in a particular subject. They will receive training in the use of bibliographies, serials and reference works and both online and CD-ROM networked resources which the library offers. In this regard, librarians work very closely with lecturers who sometimes provide guidance concerning the type of material that the students are likely to encounter. For instance, although all students in the programme will be introduced to the different formats of information sources and methods to access them, some departments may request that librarians emphasize or possibly spend more time on certain sources such as government publications, SABS standards or searching the Internet. The constraint of having to try and fit in everything that the student could possibly need to know results in a rather rushed presentation which is not conducive to learning. Not only does it place unnecessary strain on the librarian but the student is faced with much new information which he or she has to process and apply.

#### **1.3.3.4. CORE CURRICULUM**

The Core Curriculum programme was implemented at the M.L. Sultan Technikon in March 1999 as a pilot to address problems associated with learning and to enhance basic life skills. It is aimed at first-year students across all faculties. The Core Curriculum programme consisted of the following modules: Effective learning, Effective note-making and summarising, Effective thinking, Effective communication, Academic writing and Information retrieval, Word processing, Using spreadsheets, Prejudice and discrimination, Cultural diversity and Gender awareness. The Core Curriculum programme involved team-teaching. In the Information Retrieval module, for example, the librarians from the Library and Information Studies Department, and from the Library, team-teach with the lecturer of a particular course. A double period was allocated for the modules and during the Information Retrieval module the librarians demonstrated the various methods that could be used to search for

information. The brief was for the lectures to be simple and easy to understand. The lecture consisted of a demonstration on how to use the contents pages and index of a book to find information, how to use dictionaries and encyclopaedias, how to use a journal index, how to do a search on the OPAC, how to read the bibliographic description on the screen and how the Dewey system works. Additional information was provided in the form of pamphlets. The demonstrations described above were all exercises involving active participation, in that samples of materials were taken to the classes and students, working in small groups, were encouraged to find information within them.

One of the main problems experienced with the Core Curriculum was the poor attendance. Although compulsory, the modules were not credit bearing. In the information retrieval module, students were asked after each session to fill in an evaluation sheet for librarians to evaluate how effective the module was, as well as to determine the opinion of the students of it.(Appendix E). Overall the Information Retrieval module received favourable comments. Many of the students indicated that they felt more at ease using the library after the course. The librarians, however, felt that the time allocated for the Information Retrieval module was not sufficient and that the students still did not have sufficient hands-on training, especially on the OPAC.

Given the above problems, it is clear that user education, in its present form of the basic and advanced orientation and the Information Retrieval module of the Core Curriculum, is not effective, for the following reasons:

- **Lack of support**

There is a lack of support from management and academic staff for user education. Some of the academic staff see user education as unnecessary because they do not require the student to read beyond the prescribed textbooks and notes. It is the content



matter of the subject that they regard as important rather than the process of finding information. Because many of the academic staff did not receive user education while they were at tertiary institutions, they do not see the necessity for their students to receive it.

Academic staff are allocated a certain number of lectures per course and they jealously guard them. Because user education is not time-tabled, the lecture period is given to the librarians as a 'favour', which makes it all the more difficult to ask for more time.

### ● **Time frame**

As stated above, one or even two lecture periods are not enough for user education in which to teach students the various methods of accessing information. User education is a process and not a '50-minute instructional cloudburst' where librarians try to pour everything that the student needs to know about accessing information into them (Sager 1995: 55). User education must be taught over time and skills learned incrementally (Sager 1995: 55).

### ● **Students' attitudes**

Students tend to regard the orientation programmes and the Information Retrieval module of the Core Curriculum courses as a 'nuisance' which has no relevance to their engineering courses. Although librarians request lecturers to attend with their students, many of the lecturers consider this to be a 'free' period and do not turn up.

Including the user education course would possibly be a solution to the problems outlined above. If user education was written into the engineering curriculum and became compulsory and/or credit-bearing, students would not view it as "outside" their required courses.

## **1.4 PROBLEM STATEMENT**

Given the above, the problem which the present study seeks to address is the failure of user education at the M. L Sultan Technikon to adequately address the inability of students in the Engineering Faculty to search for and find information. A solution to this problem would possibly be to include user education in the engineering curriculum.

## **1.5 AIM AND OBJECTIVES OF THE STUDY**

The aim of this study is to determine the possibility of including library user education in the curriculum of the Engineering Faculty of the M.L. Sultan Technikon. There are several factors that need to be taken into consideration when investigating the possibility of including user education.

These lead to the following objectives:

- to establish the views of the academic staff and librarians regarding the inclusion of user education
- to establish what types of skills they think should be taught
- to establish who should be teaching the course

## **1.6 RESEARCH QUESTIONS**

Arising from the objectives, the research questions are the following:

- What are the views of the academics and librarians regarding the mainstreaming of user education?
- What type of skills do academics and librarians think should be taught?

- Whom do the academics and librarians think should be involved in teaching the course?

## **1.7 JUSTIFICATION FOR THE STUDY**

The justification for the study is evident in 1.3 above. A further justification can be found in the racial and gender disparities in science and technology in South Africa as raised in the White Paper of Science and Technology of 1995 (see page 8).

## **1.8 DEFINITIONS OF TERMS**

In this section the terms ‘user education’, ‘bibliographic instruction’, ‘information literacy’ and ‘mainstreaming’ are defined.

### **1.8.1 LIBRARY USER EDUCATION**

The terms used in the professional literature to describe library user education vary widely and can be confusing at times. There is a history of controversy over the definition of user education, but traditionally user education refers to introductory library tours, in-class lectures which focus on the various library resources, computer-assisted instruction, audiovisual or audio instruction, signage and library publications (Herrington 1998: 381). User education therefore can be defined as the process whereby users become competent and independent library users.

According to Behrens (1993: 124) current definitions of user education accentuate the effective use of the library and not necessarily the effective utilization of the information to which the library provides access. The literature however does not see the term user education relating simply to the effective use of a library. For instance many authorities see library orientation and bibliographic instruction as components of

the broader category of library user education (Fjallbrant and Malley 1984: 13 ; Behrens 1993: 125; Sager 1995: 50-51) and others see the term 'information literacy' or 'literacy skills' as the ultimate outcome of library user education (Rader 1995; Lennox and Walker 1992; Bruce 1998).

It would appear that further work is needed to distinguish user education from the development of information literacy in particular with regard "...to the attitudes and actual practices of librarians..." (Julien 1998: 312). There appears to be little consensus amongst librarians about what constitutes information literacy despite the official definition of the American Library Association (see 1.8.1.4).

#### **1.8.1.2 LIBRARY ORIENTATION**

Library orientation is the process of familiarizing the student with the physical layout, the services and the policies of a particular library (Fjallbrant and Malley 1984: 13). Library orientation is directed towards the first year student and usually takes place within the first few weeks of the student having registered. There are several variations of the orientation tour such as self-guided tours using printed directives and/or audio and audiovisual aids. Whilst the library orientation programme is normally seen as the first stage of the library user education programme, bibliographic instruction is the more advanced or follow-up course.

#### **1.8.1.3. BIBLIOGRAPHIC INSTRUCTION**

Bibliographic instruction can be defined as instruction in the effective use of the bibliographic apparatus and structures which are to be found in the library. These include bibliographies, indexes and abstracts (printed and online) and other tools that may be deemed necessary for the full utilization of the literature and any other educational materials of any subject (Benson 1979: 6). A bibliographic instruction

course is often directed at students in their second and subsequent years rather than first year students (Fjallbrant and Malley 1984: 13). Julien (1998: 304) who did a comparative study on user education in New Zealand and Canadian tertiary institutions, notes that the terms 'user education' and 'bibliographic instruction' are essentially regarded as synonymous in New Zealand institutions.

#### **1.8.1.4. INFORMATION LITERACY**

Recent literature has concentrated heavily on the phenomenon of 'information literacy'. According to the American Library Association Presidential Committee on Information Literacy, people who are information literate recognise when they need information and understand how information is organised. They are able to find, evaluate, use and manage information for effective problem solving and decision making (ALA 1989: 1).

On perusing literature on the concept, it is clear that not everyone is in agreement that information literacy and library user education are synonymous. Behrens (1991) subscribes to this school of thought and emphasises that the traditional library user education programme concentrates mostly on familiarising the user with the information sources of a particular library and that the ultimate aim of the programme is to make the user library literate rather than information literate (Behrens 1991: 125). There is a concern that many librarians simply regard information literacy as a new or alternate terminology for user education. In South Africa the concepts of user education, information education, information skills and information literacy are all used in connection with the teaching of library related skills (Behrens 1992: 83; 1993: 125).

The parameters embraced by library user education are far narrower than those required for information literacy. Whereas user education concentrates mainly on the

search and location of information sources, information literacy goes beyond simply identifying and locating materials. Once the information is sourced, an individual should critically reflect on the information obtained and then effectively use the information to generate new ideas or knowledge. Information literacy also contributes towards lifelong learning by educating individuals to effectively utilize and evaluate information. The following definition of information literacy by Sayed and de Jager (1997: 6) is not only succinct, but also appropriate: "Information literacy refers to the ability of learners to access, use and evaluate information from different sources, to enhance learning, solve problems and generate new knowledge" In short, one may be regarded as information literate once one knows how to negotiate the distance between the known and the unknown by being able ask the right questions in order to find the right information.

For the purposes of this study, library user education will refer to any and all educational activities planned, designed, and employed to enhance the independent information gathering and synthesizing skills of information seekers (Sager 1995: 50). Library user education thus encompasses library orientation, bibliographic instruction (as defined above) and any other programme, whether credit-bearing or non-credit-bearing, which endeavours to teach the user where and how to locate information.

### **1.8.2. MAINSTREAMING**

A mainstreamed course is a formal course which has been approved through an institution's regular review procedure. In other words, it is time-tabled and can be credit-bearing or non-credit-bearing, elective or compulsory (Behrens 1993: 126). A mainstreamed user education programme is thus the integration of user education into the academic curriculum. A distinction is made between course-related and course-integrated user instruction.

### **1.8.2.1 COURSE-RELATED INSTRUCTION**

A course-related programme is described as a programme which focuses on the particular skills and tools necessary to complete the library and /or research assignments of a specific course (Benson 1979: 6; Behrens 1993: 127). Most course-related programmes are single-session lectures where the content of the library lecture is related to the subject matter of the course. Thus, in a course-related library user education programme, the library aspect is not fundamental to the subject, but is an adjunct to the subject (Benson 1979).

### **1.8.2.2 COURSE-INTEGRATED INSTRUCTION**

The literature defines course-integrated instruction as a programme in which the library education aspect is fundamental to the subject. Because course-integrated instruction is interwoven throughout the subject, it increases the student's level of library and information competency. Course-integrated instruction is learnt at the time of need, and is therefore more likely to be perceived as relevant by the students than if it was taught in isolation from a mainstream course (Behrens 1993: 127). Very often the student's first encounter with library user education occurs *before* the student has an assignment to work on and the library experience is then perceived as 'outside' the course.

Roberts and Blandy (1989: 70) regard course-integrated instruction as superior to any other form of library user education for the following reasons:

...course-integrated instruction is graduated and demonstrated over...years for students. The variables and factors making this form of library instruction effective includes the flexibility and variety in the assignments; the collaboration of faculty and librarians;

✓

the use of examples presented by librarians... the personalized reference service provided by the librarians; and the use of librarians as instructors in the teaching-learning process.

In terms of the present study, the type of programme that is envisaged is encapsulated by the above definition.

## **1.9 LIMITATIONS OF THE STUDY**

A significant limitation of the study is the fact that it is limited to the staff of the Engineering Faculty only. The findings relating to this faculty cannot be assumed to apply to the other faculties of the Technikon. A further limitation is that it does not canvass the opinions of the students currently enrolled in the engineering course. However, although their opinions could prove useful as to what impact the current programme of user education has on their studies, it could be argued that the extent of user education provided is insufficient for students to offer meaningful opinions.

## **1.10 SUMMARY**

The basic purpose of this study was to determine the possibility of including library user education in the curriculum of the Engineering Faculty of the M.L. Sultan Technikon. To this end the researcher introduced the study and briefly sketched recent developments in education, in particular the introduction of outcomes-based education in South Africa. A description was provided of the M.L. Sultan Technikon and the user education programme currently in place. This was followed by the aim and objectives of the study and the resultant research questions and thereafter by a justification for the study, definitions of terms and, in conclusion, the limitations of the study.



## CHAPTER 2

### LITERATURE REVIEW

The purpose of the literature review is to clarify the problem and place it in context so as to provide justification for the study. A history of user education will be provided. This will be followed by examples of the mainstreaming of user education in tertiary institutions and an examination of the pivotal role that libraries play in tertiary education and learning. The attitude of lecturers towards user education will also be discussed. Finally, a brief overview of the information-seeking behaviour of engineering students and engineers will be given.

#### 2.1 INTRODUCTION

Much has been written on the subject of library user education in academic libraries over the years, but the 1980s and 1990s have seen an unprecedented increase in the number of articles written. The annual review on user education by Radar, which is published each year in the *Reference Services Review*, attests to this. Behrens (1993: 125) reports a steady increase in the number of articles on user education in tertiary institutions published on the subject over a period of five years (1987 - 1991) and notes that there is an annual increase in the number of references. This trend has continued: a perusal of the 1993 *Reference Services Review* lists 131 articles and the 1995 publication lists 195 articles on user education in tertiary institutions, an increase of 67% in just two years. This is an indication of how topical the subject has become.

## **2.2 ROLE OF THE LIBRARY IN TERTIARY EDUCATION**

The role that the library can play in the pursuit of academic excellence is often ignored by academics, management of tertiary institutions and library managers. According to Breivik (1988: 1), the library is often referred to as the heart of the institution and, like the physical heart, is largely ignored until something goes wrong with it. Research has indicated that the library's role in higher education, at least on the undergraduate level, has not been as crucial as educators often have assumed it to be (Benson 1979: 1). Undergraduate students do not make extensive use of library resources because of their heavy reliance on lecturers' notes or prescribed textbooks. The study conducted by Boyer (1988: 7) similarly revealed that the majority of students do not make use of the materials in the library but rather use the library as a quiet place to study their notes. It could thus be argued that librarians and lecturers alike pay lip service to the role of the library as a partner in the teaching and learning process because the library is often not closely integrated with curricula and instructional programmes (Simmons 1992: 22).

Much of the learning that currently takes place in the majority of tertiary institutions is 'passive', in the sense that students merely regurgitate lecturers' notes that are placed in the Reserve section of the library for them or they memorize entire sections of prescribed books. 'Active' learning, on the other hand, occurs when the lecturer becomes the facilitator in bringing about the students' acquisition of knowledge rather than being the only, often biased, source of it. Active learning changes the focus from faculty teaching to student learning and requires students to assume more responsibility for the quality of their education (Breivik 1987: 45).

In partnership with academic administrators and faculty, librarians can enhance instruction, research and service, while supporting the eventual transformation of higher education (Breivik and Gee 1989: 3). Thus, ideally, learning in tertiary

institutions should be structured around information resources that will continue to be available after graduation so that students can learn how to evaluate and judge the information they find. Graduates who are then faced with real-life problems at work will be able to access and assess the information needed to make good decisions and solve problems (Breivik 1987: 45).

Librarians also need to reassess their role in the education process. Many still believe that their function is to serve as custodians of books and other formats of information rather than participating actively in the education process (Simmons 1992: 22).

### **2.3 HISTORY OF USER EDUCATION**

A rudimentary form of library user education in academic libraries can be traced back to the early nineteenth century in the United States of America and to Harvard University in particular. The early academic librarians were professors with part-time library assignments and they taught the students to use the library as part of an academic course. However, at least until the 1920s, it was not an integrated part of the library service (Saloney 1995: 32).

Although there were individual attempts by librarians and academics to teach basic library skills to students prior to the nineteen twenties, these attempts were rather sporadic and never really developed into established programmes. More structured forms of user education only came into being a decade later and the two factors that contributed significantly to this were the information explosion and the emerging technology. Both of these factors still continue to be agents for the changing attitudes about user education even today (Sager 1995 : 51). An appropriate example of the influence of emerging technology on user education is the migration from the catalogue card to the electronic format of the OPAC, or searching through electronic databases as opposed to indexes and abstracts in printed format.

Because of the proliferation of information, it became obvious that students had to receive some sort of training in obtaining the right information timeously. Thus, by the 1930s the need for what was then referred to as 'library instruction' was repeatedly highlighted in the literature and librarians in academic libraries were reporting new approaches to user education (Herrington 1998: 382) .

User education in academic libraries in South Africa can be traced back to the 1940s and was rather tardy and intermittent during this time (Van Brakel 1975: 100). Thus, compared to the international scene, it is a fairly recent practice in South African tertiary institutions, although most local academic libraries now have some form of library user education (Behrens 1993 : 125 ; Henning and Oosthuizen 1998: 67). Various symposia and workshops have recently been held on library user education in South African academic libraries, but not many have been published formally. Examples are the SAILIS Annual Conference of 1997 at the University of Durban-Westville (21 - 25 September), during which a workshop was held on user education in tertiary institutions. Librarians were invited to discuss current user education programmes in place at their institutions. The Information Literacy Workshop, which was hosted by the DOE/EU Higher Education Libraries Programme (1 - 2 September 1998, Pretoria), discussed information literacy but also user education in tertiary institutions. The main issues that came out of the SAILIS and DOE/EU workshops were the following:

- For user education to be successful there needed to be closer co-operation between the librarians and the lecturers.
- User education was not supported by all academics
- Because user education was not time-tabled it was difficult for librarians to obtain lecture periods from lecturers
- Students themselves did not see user education as being part of the curriculum and were reluctant to attend the sessions

### **2.3.1 FORERUNNERS OF THE INCLUSION OF USER EDUCATION**

The call for the inclusion of user education into the curriculum goes back more than half a century. Research has shown that several tertiary institutions in the United States of America offered both credit and non-credit bearing courses in user education from as early as the 1920s (Roberts and Blandy 1989: 2 ; Saloney 1995: 33). User education was seen as a key element in library services to make the library an important part of the academic environment.

The library-college movement can be seen to have been the catalyst for the call for the integration of user education into the general curriculum. The library-college movement is based on library-learning as the fundamental method of instruction. This movement envisioned the library as the centre of the college, with both academic and library staff working as an integrated unit (Fjallbrant and Malley 1984: 182).

Although the movement was seen as too idealistic at the time, it did influence library user education in the direction of a closer library-teaching involvement.

One of the earliest library-teaching programmes was at Stephens College, a college for women in Columbia, Missouri, in the 1930s. B. Lamar Johnson, the librarian at Stephens College, is credited with being one of the forerunners of the mainstreaming of user education. His objective was to make the library the centre of the instructional programme in an effort to eliminate the barrier between the library and the classroom. He also advocated the concept of team-teaching between the librarian and the academic staff member (Benson 1979: 16 ; Roberts and Blandy 1989: 2). Several of the components of library instruction as we know it today were already well established at Stephens College, for example the orientation tours, instruction in basic reference tools, point of use and individualized instruction. (Roberts and Blandy 1989: 6). Thus the user education at Stephens College was course-integrated, in other words, the objectives of the non-library course included user education as an essential part of

the course.


Another forerunner of the mainstreaming of user education was Harvie Branscomb, who was the director of libraries at Duke University, during the years 1937 to 1938 (Benson 1979: 9). He expressed great concern that librarians were seen to be placing more and more emphasis on the acquisition and preservation of materials rather than on the use of these materials (Boyer 1988: 8). He advocated the integration of library user education more closely with the curriculum and teaching methodology, after his study during the years 1937 - 1938 revealed that the majority of students made negligible use of library resources (Roberts and Blandy 1989: 2).

Like Johnson, Branscomb envisioned a closer relationship between the teaching departments and the library. In his study, Branscomb investigated some tertiary institutions where the library usage statistics were significantly higher than the average. He came to the conclusion that the reason for the above-average statistics was that the particular teaching method being used was more library-centred. According to Branscomb, it would thus seem that the traditional teaching method, which rested essentially on the textbook and lecture method, not only failed to introduce students to other literature on the subject but also gave the student a one-sided view of the subject. Such instruction invariably compartmentalizes knowledge, whereas students ought to learn to integrate and relate knowledge. Although Branscomb's observations were published in the 1940s, the scenario portrayed by him is still very much in existence in academic institutions today. His comment that the library is a stage removed from the vital centre of teaching of the institution is still very relevant in some institutions (Benson 1979 : 10).

Patricia Knapp has been credited with giving much-needed direction to the movement for the mainstreaming of user education. During the years 1960 to 1962 she conducted the now famous Monteith College Library Project at Wayne State

University. The stated objective of the project was to stimulate and guide students to develop both a sophisticated understanding of the library and increased competency in its use (Roberts and Blandy 1989: 2-3). In order to achieve this objective, the Project undertook to set up a programme in which librarians would work with teaching staff in developing a curriculum in which students use of the library was an integral part of the curriculum, in other words, course-integrated user education. Knapp envisaged that lecturers would serve as facilitators of learning by making more aggressive use of resource materials instead of relying solely on textbooks and reserve materials. The exercises that were used in the experiment were related to and co-ordinated with the basic subject content courses and designed to enable students to learn how to develop search strategies (Fjallbrant and Malley 1984: 182).

The programme extended through all four undergraduate years and formed a sequence in which students were led from a simple library experience to a more complex understanding of the information searching process. Despite Knapps's efforts, the project ultimately failed because of the unwillingness of academic staff to transcend traditional teaching methods (Roberts and Blandy 1989: 2-3). The Monteith Project, however, not only gave direction to user education but also served as an inspiration for the development of a successful mainstreamed course-integrated library user education (Breivik and Gee 1989 : 8).

 An outstanding example of a successful mainstreamed user education programme at a tertiary institution is the so-called Earlham experience. Earlham College, a small liberal arts college situated in Richmond, Indiana (USA), has successfully integrated user education into the curriculum since 1965, under the then library Director Evan Farber (Roberts and Blandy 1989: 69). Although this is not the only tertiary institution where user education has been mainstreamed it is certainly one of the oldest. The reason for the success of a mainstreamed user education programme, as opposed to one which is not, is the fact that the student will learn information skills as

a fundamental component of the curriculum.

The literature indicates that user education is still very much an add-on programme at tertiary institutions, both in South Africa and internationally. Because it is not part of the curriculum, the programme is discounted as an irrelevant part of the coursework by students because it has no impact on the grade that they will ultimately receive.

This situation can be turned around if academic staff required that students use a variety of information resources as part of class assignments or projects. Students and lecturers must realize that the ability to search for and locate information is critical to learning.

Many lecturers do not build a course around the existing information but rather on some files that are put on Reserve, or from a prescribed textbook. This is highlighted by Erdman (1990 : 458), whose study revealed that undergraduate engineering or engineering technology students rarely receive assignments that will require them to read beyond the set-books or lecture notes. Several other authors, such as Leckie and Fullerton (1999: 11), Ackerson and Young (1991: 133), Popoola (1992: 162), Ruth (1997:171) and Rader (1995), corroborate Erdman's statement.

## **2.4 CURRENT TRENDS IN SOUTH AFRICA**

According to the literature some tertiary institutions in South Africa offer course-integrated or mainstreamed user education. However, it would seem that most of the programmes are restricted to particular faculties or departments, as opposed to the whole institution (Prozesky 1999 ; Meyers 1991 ; Leach 1999 ; Sayed 1999 ; de Jager and Nassimbeni 1996). For instance, at the University of Cape Town (UCT) School of Librarianship, a single semester credit-bearing course with the specific aim of providing undergraduate students with transferable learning and information skills is being offered since 1996. The course is known as "*Information society: tools and*



*skills*” and is restricted to undergraduate students in the Faculty of Social Sciences and Humanities (de Jager and Nassimbeni 1996: 2). Issues addressed in the course include the organization and compilation of information, its presentation in both printed and electronic databases, networks, searching and the evaluation of information (de Jager and Nassimbeni 1996: 1). According to the authors the course is part of an experiment in team teaching by the School of Librarianship, the University Libraries and the Writing Center, which is part of the UCT Academic Development Program (de Jager and Nassimbeni 1996).

At the University of Natal, Pietermaritzburg, the credit-bearing course “Introduction to Information Retrieval” (IIR) has been offered since 1996 to undergraduate students in the Faculty of Social Sciences. The course covers amongst others the information explosion, bibliographic control, publishing, information sources and agencies and information retrieval skills (Leach 1999: 58). The course is taught by staff from both the University Library and the Information Studies Department.

The INFOLIT (Information Literacy) Project which was launched in the Western Cape in South Africa in 1995, promotes the development of an information literacy framework which ensures that learners have the skills, capacity, fluency and confidence to operate productively in the information age (Karelse and Liebenberg 1996:2). INFOLIT is a project which was established by the Adamaster Trust and CALICO, the Cape Library Co-Operative. It is a collaboration between the five institutions of Higher Education in the Western Cape which are the Peninsula and Cape Technikons and the Universities of Cape Town, Stellenbosch and the Western Cape. The main thrust of the INFOLIT project is to encourage academics to integrate information literacy education into their courses so that their students acquire not only subject knowledge but are also able to navigate the vast amount of information with which they are frequently confronted (Karelse and Liebenberg 1996).

Several studies (Bell 1990 ; Zondi 1992 ; Ntsala 1994) that report on the existing user education programmes at tertiary institutions in South Africa suggest that the current programmes in place have been amended, or should be amended, to accommodate the new needs of the users. For example, some of the students that attend tertiary institutions have never used a computer to access information and will require more than a cursory introduction to computers and the Internet.

Many librarians have voiced their frustration with the current programmes that are in place and have advocated that user education be mainstreamed (Behrens 1993 :126 ; Zondi 1992: 208). Zondi's study on the library use skills and information seeking patterns of first-year students at the University of Zululand in South Africa found that the majority of students rarely engaged in independent activities that required the use of the library. Although the students received user education they did not bother to put into practice what they had learned because they relied heavily on recommended reading lists, the contents of which were placed in the Reserve section of the library, lecture notes and prescribed books. According to Zondi, the teaching strategies employed by the lecturers inhibited the students' use of information tools to retrieve sources relevant to their assignments (Zondi 1992: 145).

It is advocated that the user education programmes be integrated into the general curriculum and taught in a subject-related manner and be credit-bearing. This is supported by the study of Henning and Oosthuizen (1998: 76) from Technikon South Africa, who recommend that the "...ideal is a fully integrated information user education that is compulsory and creditworthy". Concern is also voiced by van Zijl (1997) from the Vaal Triangle Technikon that the current programme in place is no longer effective, as user needs have changed over recent years. During the latter half of 1996 the Vaal Triangle Technikon Library conducted a survey to evaluate the library orientation programme that is offered to first-year students. The survey revealed that of the total intake of students, only 39 % attended the library orientation

programme. It is probable that making the programme credit-bearing and compulsory would increase the percentage.

Ruth's (1997) investigation into the student experience at the library of the University of Western Cape concludes that for the user education programme to be successful, it needs to extend beyond the library itself and that the 'current' curriculum design is the principal factor that militates against the effective use of the library in active student learning. In terms of the literature available, the current user education programmes that are in place in most tertiary institutions are not part of a continuous process, in that the majority of programmes are single-session ones where librarians try to cover all aspects of user education. It is simply not possible for sufficient learning to take place in one fifty-minute session. This approach, where user education is provided in concentrated doses, interspersed with long periods of little or no library activity, is certainly not the ideal situation (Fjallbrant and Malley 1984: 12).

## **2.5 THE ATTITUDES OF ACADEMIC STAFF REGARDING USER EDUCATION**

Do academic staff in general support the teaching of user education? Research by librarians has revealed that academics often fail to acknowledge that students need help in attaining skills associated with user education. According to Fjallbrant (1984: 130), academic staff probably present the greatest obstacle to the advancement and development of user education.

A survey conducted amongst academic staff in 1982 at California State University revealed that a large number of academics felt that students should learn library and information skills unaided. They also felt that the curriculum was already too full to accommodate a programme of that nature (Thomas and Ensor 1984). The survey was replicated in 1990 on the same campus to see if there were any significant changes in

the attitudes of academic staff after several years. The study concluded that although there was a slight drop in the percentage, most academic staff still believed that students should learn information skills on their own, in spite of the advent of new technologies (Thomas 1994). The study conducted by Cannon (1994) in the Humanities and Social Sciences departments at York University had more positive results. The academic staff demonstrated a keen appreciation of the importance of user education across the curriculum and 86% rated user education as “extremely valuable”.

Porter (1992 : 45) reports on a project at the Philadelphia College of Pharmacy and Science (USA) to form a partnership between the Biology Faculty and the Library with a course-integrated user education programme. The project was to support resource-based learning by developing assignments that would not only teach the tools necessary to access information but also be meaningful within the context of the respective courses. When the project was first introduced into the curriculum the initial reaction of some of the academic staff was resistance, but with time, and as the benefits of a mainstreamed programme became clear, they embraced it (Porter 1992 : 50).

Schloman and Feldman (1993) from Kent State University (USA) attribute the success of the course-integrated user education programme for undergraduate and graduate geology students to the collaborative effort of the academic staff and the library staff (the authors are librarian and Professor of Geology, respectively). Their recommendation is that librarians work closely with academic staff in an effort to build instructional modules for information skills development (Schloman and Feldman 1992: 46).

Leckie and Fullerton (1999) who recently conducted a study in the Science and Engineering Faculties at the University of Waterloo (Waterloo, Ontario) and the

University of Western Ontario (London, Ontario), emphasize that support from the teaching faculty for a user education programme is critical in order for it to succeed. This collaboration between the academic staff and the library is also emphasized by Radar (1995) and Breivik and Gee (1989).

Several studies offer various reasons for the inconsistency of academic staff's attitude towards user education. According to Engeldinger (1992: 22), the reason why academic staff resist the integration of user education into the curriculum is that many of them had no user education themselves. Whatever skills they do have they have obtained through trial and error and over a period of time. Some academic staff still believe that students can be likened to empty vessels into which one can pour the required information and knowledge. They seem to be unaware of the gap between their assumptions about students' preparedness to do even basic research and the reality of these students' experience and abilities (Sager 1995: 52).

Leckie and Fullerton (1999: 10) refer to the study by Larry Hardesty as further proof of the inconsistency of academic staff's attitude to the incorporation of user education into the curriculum. The latter states that science and engineering academic staff are more likely to offer resistance to user education than their colleagues in the social sciences and the humanities because they (science and engineering) generally use the library less frequently for their research. Hardesty's study found that the science and engineering academic staff were more indifferent to the role of the library in undergraduate education than their colleagues in the other two faculties.

Daragan and Stevens (1996: 69) report on a course-integrated user education programme at an engineering-focused institution and state that, for the most part, librarians are viewed as 'outsiders' who advocate the inclusion of user education into the curriculum and conclude that academic staff's "... ambivalence continues to impede...and may contribute to the lack of an acceptable model for teaching library

skills”.

The academic staff's rather negative attitude towards user education can also be attributed to the fact that they do not recognize or accept librarians as full partners in the educational process. Requests by librarians to conduct class presentations on library resources and research strategies are often seen by academics as superfluous and as intrusions of debatable value that could take up valuable class time. Efforts on the part of librarians to work collaboratively with academic staff to integrate the library into the course goals, and to improve the effectiveness of library-related research assignments, is sometimes met with suspicion (Sager 1995: 52).

In her study, Meyers (1991) described how collaboration between academic staff and the library led to a user education programme that had the support of the teaching staff. The user education programme she referred to was run jointly by the Department of Chemistry at the University of the Witwatersrand (South Africa) and the university Library. All students in this Department, ranging from undergraduate to postgraduate, received formal user education, with the emphasis on accessing chemical literature in its various formats. According to the author this enhanced the relationship between the academic staff and the library and resulted in a more proactive service emanating from the library.

The Faculty of Agriculture at the University of Natal, Pietermaritzburg, and the Life Sciences Library jointly offer a mainstreamed user education, as described by Prozesky (1999). The course is compulsory, but non-credit bearing, and run over the first three weeks of the first term. Students are required to pass a practical exercise and are awarded a certificate of proficiency if successful.

It does appear that if there is closer collaboration between academic staff and library staff, the latter will not only be in touch more closely with curriculum development

and faculty planning, but will also be able to better anticipate instructional and research needs. Lack of support of the user education programme on the part of the academic staff can be avoided by integrating the user education programme with the academic teaching programme. This leads to closer co-operation between the library and the academic staff in the development of a programme in order that *all* the resources of the library, not just the prescribed book and some titles on the Reserve shelf, can be brought in to improve the quality of the education given to students.

## **2.6 INFORMATION-SEEKING BEHAVIOUR OF ENGINEERING STUDENTS AND ENGINEERS**

Engineers require a substantial amount of information to successfully perform their work, which involves identifying, sourcing and finally producing a product or solving a problem. The work of an engineer can be described as a process of mobilizing, transforming and producing information (Ackerson and Young 1991: 133). Information required during the course of their work covers a wide variety of topics such as management, regulatory requirements, economic forecasts and research methodologies (Leckie and Fullerton 1999: 9).

According to the literature, engineers regard the informal network of colleagues as the most important source of information. Leckie and Fullerton (1999: 10) state that engineers “...rely on personal contacts as the primary means of identifying information, thus overlooking other important sources...” and Ackerson and Young (1991: 133) state that not only do engineers value accessibility over quality in selecting information sources, but they are also more likely to rely on their own personal store of information, colleagues and supervisors and only as a last resort on formal written literature. In a similar vein, Poland (1994: 175) states that engineers listed informal contact with co-workers, their personal collection and manufacturers’ literature as the most frequently used sources of information to keep them up to date

on current projects.

A longitudinal survey on the information-seeking habits of engineers by Holland and Powell (1995) investigated the impact of user education on engineers after they had entered the job market. Questionnaires were sent to two groups of engineers, those who had undergone user education whilst still at the tertiary institution and those who had not. Whilst both groups demonstrated a preference for their own personal stores of information and information by word of mouth (colleagues), the group who had participated in the user education programme rated formal information sources such as college and public libraries much more highly than those who had not participated in the user education programme. The group who had participated also demonstrated a knowledge of a broader range of electronically available sources and services and they read a wider range of relevant engineering literature than their counterparts who had not undergone a user education programme (Holland and Powell 1995: 13).

Thus the training that students receive at tertiary level may ultimately determine how they will source information when in a working situation. According to Erdman (1990: 458), few assignments require the typical undergraduate engineering student to use the wealth of information stored in the library. Engineering students also seldom initiate independent information-gathering and rely to a great extent on textbooks and notes from lectures or other material that has been placed in the Reserve section of the library by the lecturer.

Ackerson and Young (1991: 133) rate engineering students as the least likely to know and use the literature in their field. Once students have bought the required prescribed book it is quite possible for them to avoid the library, if not completely then at least until relatively late in their educational experience (Leckie and Fullerton 1999: 11). A further contributing factor is the fact that in the traditional education system in operation at most schools in South Africa, scholars have spent 12 years passively



accepting information which they have been spoon-fed. All that students had to do was to reproduce notes that were given to them. Now that they are in tertiary institutions, they expect to be able to continue to do so.

The engineers who were surveyed in the study by Holland and Powell (1995 : 14) gave a strong mandate for some form of user and information education to be integrated into existing engineering courses. At a time when information is increasing so rapidly, it is clearly preferable to teach people how to learn than to simply teach them the facts. Therefore learning in tertiary institutions should be structured around information resources that will continue to be available after graduation and students should learn how to evaluate and judge the information that they find (Breivik and Gee 1989: 32).

## **2.7 SUMMARY**

In this chapter a brief outline of the history of user education in tertiary institutions was provided. The role that the library can play in tertiary education was discussed followed by a review of current trends in user education in South Africa. The impact that the attitude of academic staff may have on the successful implementation of user education was examined. Finally, the information seeking-behaviour of engineers and student engineers was discussed.

## **CHAPTER 3**

### **METHODOLOGY**

#### **3.1 INTRODUCTION**

The aim of this chapter is to explain the research method that was used during the present study to canvass the views and opinions of the academic staff in the Engineering Faculty and those of the professional librarians regarding the mainstreaming of user education at the M.L. Sultan Technikon. Two population-specific questionnaires were designed. The method and data collection technique used in this study were the survey and the self-administered questionnaire.

#### **3.2 SURVEYS**

Surveys are probably one of the most common and popular methods used for collecting descriptive information about people. A survey can be defined as a series of self-report measures, administered either through an interview or a written questionnaire. Through the medium of a survey one is able to produce a 'snapshot' of the opinions, attitudes, values, needs and other forms of behaviours of a group of people at a given time (Stangor 1998: 97). Survey research in education may be done to determine views or attitudes for the purpose of planning or decision-making.

Surveys may be further differentiated in terms of their scope. The range of a survey may vary, in that it may be a large-scale survey such as a national census co-ordinated by several people or it may be a small-scale survey such as the present study conducted by a single researcher.

Whether the survey is large-scale or small-scale, the collection of information will typically involve one or more of the following data gathering techniques:

- Structured, semi-structured or unstructured interviews,
- Self-administered questionnaires.

Both the interview and the questionnaire are used to measure people's less observable characteristics such as values, goals, opinions, and attitudes (Mason and Bramble 1997: 314).

### **3.3 DATA-GATHERING TECHNIQUE**

For the present study the choice was between using an interview and a questionnaire. The self-administered questionnaire was chosen above the interview because of the inherent disadvantages that are attached to the interview.

With the interview one has to contend with the biases, perceptions and opinions of the interviewer that may influence the questions that are asked, the way they are asked, the responses given and the way those responses are recorded and interpreted (Mason and Bramble 1997: 315). The presence of the interviewer noting down responses can have an inhibiting effect, as the anonymity of the respondent is compromised (Bless and Higson-Smith 1995: 112). The quality of personal contact between the interviewer and the interviewee may have an effect on the eventual results. One also has to consider that differences of sex, age, class, religion and colour can make rapport between the interviewer and the respondent difficult, and in certain contexts are potent sources of bias (Line 1982: 71). Finally, the interview can be time-consuming and costly (Mason and Bramble 1997: 315).

### **3.3.1 SELF-ADMINISTERED QUESTIONNAIRES**

The questionnaire can be defined as a set of fixed-format questions that is completed by the respondent at their own pace, often without any supervision (Stangor 1998: 98). The questions used in a questionnaire should be such that they serve to extract data needed to test the hypothesis or answer the questions of the research study.

There are two types of questionnaires, the closed or structured questionnaire and the open or unstructured questionnaire.

The closed or structured form of the questionnaire consists of a prepared list of questions and an option of possible answers. To indicate their replies, respondents have the option to either mark 'yes' or 'no'; check or circle or tick one or more items from a list of items; mark points or units on a scale; or rank a series of statements in order of their importance (van Dalen 1979: 154). Provision is also made for an 'other' category, which permits the respondents to indicate another reason not anticipated by the researcher. Sometimes the respondents are required to substantiate in one or two lines why the 'yes' or 'no' option was chosen.

In the open or unstructured form of a questionnaire there are no suggested answers. In this type of questionnaire the respondent is allowed to answer freely and fully in their own words. Because no clues are provided it is possible that the respondents could very easily omit relevant data to the survey or include data that has no relevance to the study at all. Compared to the closed and structured questionnaire, the task of tabulating, analysing and summarizing the open questionnaire can be very time-consuming and difficult and is therefore not a popular instrument (Stangor 1998: 98). Some sources strongly recommend that open-ended questions be avoided in self-administered questionnaires. Because self-administered questionnaires cannot probe respondents to find out what they mean by particular responses, open-ended questionnaires are a less satisfactory way of eliciting information. Open-ended

questions also demand too much of the respondent's time (Cohen and Manion 1994: 94).

### **3.3.2 ADVANTAGES AND DISADVANTAGES OF THE QUESTIONNAIRE**

The advantage of the questionnaire is that it can cover a vast number of respondents in less time and at a substantial reduction in costs, compared to the interview method. The physical distance between the researcher and the respondents has no impact on the instrument as such. In other words, through the questionnaire one is able to reach people who are otherwise difficult to reach.

With the self-administered questionnaire the individual is assured anonymity and is therefore more likely to respond honestly (Bless and Higson-Smith 1995: 112). This instrument also ensures that the respondents have sufficient time in which to answer as some of the questions may require some reflection on the part of the respondents. Not only can a questionnaire be used at any time that is suitable for the respondent, the respondent may also not be as constrained in answering the questions compared to the interview situation. If the interview method is used, the respondents might feel uncomfortable letting the interviewer wait too long for their answer. With the questionnaire the respondents are less likely to be influenced by the personal characteristics of the researchers, as may be the case in an interview.

One of the main disadvantages of the self-administered questionnaire is the fact that the response rate is generally low. This can be attributed to various reasons, such as that it may go astray in the mail or that the respondent may be unwilling to mail it back.

According to Bless and Higson-Smith (1995: 112) one can avoid a low response-rate by using certain strategies. One strategy is to use a brief covering letter explaining the relevance of the survey to the respondents. The purpose of the covering letter is to explain the aim of the survey, to convey to the respondents its importance, to assure them of confidentiality and to encourage their response. The present study included a one-page covering letter (see Appendix A) which outlined the necessity for the mainstreaming of user education and also briefly listed the possible benefits to the students as well as the teaching staff if the questionnaire was completed.

According to Cohen and Manion (1994: 96), research has shown that a number of myths about self-administered questionnaires are not necessarily borne out by the evidence. Response levels are not invariably less than those obtained by interview procedures. They are far more frequently equal and in some cases surpass those achieved in interviews. Questionnaires do not necessarily have to be short in order to obtain a satisfactory response level. Some sophisticated respondents may get the impression that if the questionnaire is brief, the issue is being trivialised (Cohen and Manion 1994: 96).

A distinct disadvantage of the self-administered questionnaire, compared to the interview, is that the researcher is unable to answer questions concerning the purpose of the survey and correct any misunderstanding experienced by the respondent. Unfortunately, questionnaire responses have to be taken at face value, whilst a response in an interview can be developed and clarified (Bell 1993: 91). The self-administered questionnaire may prove to be difficult to complete for those who lack adequate reading skills, but in this study it did not pose a problem. All the respondents had at least a matriculation certificate and a further three-year qualification.

### 3.3.3 QUESTIONNAIRE USED IN THE PRESENT STUDY

To collect the data for this study, two questionnaires were drawn up, one for the academic staff of the Engineering Faculty (Appendix C) and one for the librarians in the Department of Library and Information Studies and in the Library (Appendix B). A fourteen-item questionnaire was sent to a population total of ninety-one respondents. The questionnaire for the Engineering Faculty staff elicited information regarding the specific information needs of students as engineering students, as well as regarding problems students may be experiencing in their library use. The questionnaire for the librarians concentrated on the type of information skills that librarians regard as important to successfully access and evaluate information.

The first section of the questionnaire for the Engineering Faculty, Section 'A', was of a biographical nature. It was deemed necessary because the years of experience of the lecturer, and the academic level of study of the student that the lecturer teaches, could have had some impact on the questions in Section 'B'. The questions in Section 'A' and Section 'B' were structured and pre-coded, as opposed to open-ended.

Although open-ended questions allow the respondent to answer questions freely, whether detailed and complex or short, they can present the researcher with problems when analysing the results (Bless and Higson-Smith 1993: 122). Structured questions, on the other hand, allow for an easier comparison and quantification of the results. With pre-coded structured questions there is the danger that the respondent may look no further than the examples provided (Line 1982: 60). This may introduce bias if important categories are left out. In this study provision was made for bias by adding an open-ended option to the questions.

Self-administered questionnaires are generally in a structured pre-coded format. The main reason for this is that much time is saved during analysis. Pre-coded questions

are also easier and quicker to answer. Although open-ended questions may produce more information, respondents generally do not bother filling them in or are not able to think of suitable answers. Pre-coded questions may serve to guide the respondents in the correct direction and, by leaving an open-ended category, the respondents would feel free to add any other information that may not be listed (Line 1982: 60). Several questions in Section B had a 'yes', 'no' or a 'don't know' option. The respondents were invited to elaborate on their reasons for choosing either 'yes' or 'no'.

### **3.3.4 RELIABILITY AND VALIDITY OF THE QUESTIONNAIRE**

The reliability of a questionnaire refers to the fact that the answers to the questionnaire are consistent. Reliability can be defined as the extent to which a test or procedure produces similar results under constant conditions on all occasions (Bell 1993: 64). In the case of a questionnaire, the answers given on two separate occasions can be compared for consistency. To test this instrument for reliability and validity, a pre-test was conducted on three engineering lecturers and two librarians. The fact that the respondents provided consistent answers and that they indicated that they did not experience difficulty in understanding the questions can be regarded as a measure of the reliability and validity of the instrument.

Although reliability indicates the degree to which a questionnaire is free from random error, reliability does not indicate what it actually measures (Stangor 1998: 86). The validity of the questionnaire as a research tool relates to its appropriateness for measuring what the questionnaire is supposed to measure. One cannot assume the validity of the questionnaire; it must be established. In the case of the present questionnaire, the objective of the study was to determine the views of the academic staff and librarians regarding mainstreaming, to establish what types of skills they think should be taught and to establish who should be teaching the programme if it is



to be mainstreamed. Since this is the information that was obtained from the questionnaire, one can assume that the questionnaire was valid.

### **3.4 POPULATION SURVEYED**

In the event of the mainstreaming of user education becoming a reality, the present number of professional library staff would not be able to cope with the workload. With the help of the librarians from the Department of Library and Information Studies, however, it could become possible. To that end it was decided to survey this group as well.

The instrument was sent to the total population, which consisted of ninety-one respondents, of whom eighty were from the Engineering Faculty, five were librarians from the Department of Library and Information Studies and six were professional librarians from the Library, the latter including the Director and Associate Director of the Library. At the M.L. Sultan Technikon only librarians holding a qualification from a university were regarded as 'professional librarians'.

### **3.5 PRE-TESTING OF THE QUESTIONNAIRE**

It is possible that respondents can misunderstand what is being asked and therefore not bother to fill in the section or even return it to the interviewer. It is advisable to run a pre-test on a questionnaire and revise it according to the results. This is strongly recommended in the literature in order to determine how long it takes respondents to complete the questionnaire, to check that all questions and instructions are clear and to enable the researcher to remove any items which do not yield usable data (Bell 1993: 84).

Ideally, the pre-test should be carried out on a group similar to the one that will form the main population of the study. The main purpose of the pre-test is to detect any flaws in the instrument so that the respondents in the main study will experience no difficulties in completing it. The pre-test should also enable the researcher to carry out a preliminary analysis to see whether the wording and format of the questions would present any difficulties when the main data is analysed. Bell (1993 :85) recommends that the following questions be asked of the respondents participating in the pre-test:

- How long did it take to complete the questionnaire?
- Were the instructions clear?
- Were any of the questions unclear or ambiguous? If so, which ones and why?
- Did you object to answering any of the questions?
- In your opinion, has any major topic been omitted?
- Was the layout of the questionnaire clear/ attractive?
- Any comments?

As noted a pre-test was conducted on three Engineering Faculty members, a librarian from the Department of Library and Information Studies and a librarian from the Library, two weeks before the actual questionnaire went out. The respondents were asked to identify any problems that they may have experienced in answering the questions. All the questionnaires were returned and the respondents provided consistent answers and all indicated that they did not experience difficulty in understanding or interpreting the questions.

### **3.6 QUESTIONNAIRE DISTRIBUTION**

In the present study the researcher, where possible, personally delivered

questionnaires to the engineering lecturers. Where lecturers were not available, the questionnaire was handed to the department's secretary and followed up with a phone-call to ensure that every respondent did receive a copy. Each questionnaire was accompanied by a self-addressed envelope, so that upon completion the respondents could simply hand the questionnaires to the departmental secretary for mailing. Respondents were not required to identify themselves in any way, other than to indicate whether they were permanent or part-time staff members. A repeat mailing was sent two weeks later to increase the likelihood of a higher response rate and an e-mail was sent to the Faculty to remind lecturers to put the questionnaire in the internal mail

### **3.7 QUESTIONNAIRE RESPONSE RATE**

Of the eighty questionnaires sent to the Engineering Faculty and the eleven questionnaires sent to the Library and the Library and Information Studies Department, a total of thirty-two were returned from the Engineering Faculty and seven from the Library and the Library and Information Studies Department. This makes it a response rate of 64 % for the librarians and 40 % for the Engineering Faculty (See 5.1 for a discussion of the response rate).

### **3.8 DATA ANALYSIS**

The analysis of the data for this study was done manually by the researcher. On receiving the questionnaires the researchers divided them into two groups, namely those from the engineering lecturers and those from the librarians. The data were presented in the form of descriptive statistics.

### **3.9 SUMMARY**

In this chapter the researcher provided a brief introduction to the population of the study and indicated the data collection technique that was used. This was followed by a definition of surveys and a discussion of the research instrument used for the study in which the advantages and disadvantages of the questionnaire were briefly outlined. A breakdown of the population was provided, with brief explanations of the questions that were asked in the questionnaire. The pre-testing, distribution, response rate and data analysis of the questionnaires were discussed.

## **CHAPTER 4**

### **RESULTS OF THE STUDY**

#### **4.1 QUESTIONNAIRE RESULTS**

The purpose of this chapter is to list in table format, and describe the responses to the questionnaires sent to the two groups of respondents, namely academic staff of the Engineering Faculty and librarians from both the Library and the Department of Library and Information Studies. As noted in the previous chapter, thirty-two questionnaires of the eighty delivered were returned from the Engineering Faculty, resulting in a response rate of 40%. Seven questionnaires of the eleven delivered were returned from the librarians, resulting in a response of 64 %.

Average percentages have been given for each question. However due to rounding errors, percentages do not always equal 100 even though the total number is given as 100%. Totals of 0.5 and over were rounded upwards to the nearest whole number.

The results of the questions posed to the lecturers are listed first, followed by those to the librarians.

## 4.2 RESPONSES FROM LECTURERS

**Table 1**

### **Current employment status**

<b>Status</b>	<b>n = 32</b>	<b>%</b>
Permanent full-time	29	90
Permanent part-time	0	0
Temporary part-time	0	0
Contract full-time	3	10
<b>Total</b>	<b>32</b>	<b>100</b>

Ninety percent of the respondents are permanent full-time employees of the Technikon, whilst 10% are full-time contract lecturers.

**Table 2**

### **Period lecturing at M.L. Sultan Technikon**

<b>Period</b>	<b>n = 32</b>	<b>%</b>
Less than 1 year	4	13
Between 1 & 2 years	3	9
Between 3 & 4 years	8	25
More than 5 years	17	53
<b>Total</b>	<b>32</b>	<b>100</b>

More than half of the respondents (78 %) had been lecturing at the institution for more than three years.

**Table 3****Positions of respondents**

<b>Position held</b>	<b>n = 32</b>	<b>%</b>
Head of department	4	13
Senior lecturer	6	18
Lecturer	21	66
Associate lecturer	0	0
Other	1	3
<b>Total</b>	<b>32</b>	<b>100</b>

The majority of the respondents (66%) are lecturers, 18% are senior lecturers and 13% are heads of department. The one respondent under the heading 'other category' indicated 'Associate director'.

**Table 4****Level of students taught**

<b>Level</b>	<b>n = 32</b>	<b>%</b>
First-year students	15	47
Second-year students	14	44
Third-year students	25	78
Other	10	31
<b>Total*</b>	<b>64</b>	<b>200</b>

\* multiple responses were obtained

The majority of the respondents teach more than one category of student. Forty-seven percent of the respondents teach first-year students, 44 % teach second-year students and 78 % teach third-year students. Under the category 'other' 31% of the

respondents indicated that they also teach BTech students.

**Table 5**

**Contribution of user education to an improved throughput rate for engineering students**

<b>Can contribute</b>	<b>n = 32</b>	<b>%</b>
Yes	27	85
No	3	9
Don't know	2	6
<b>Total</b>	<b>32</b>	<b>100</b>

In answer to the question as to whether user education can improve the throughput rate in the faculty, the vast majority (85%) of the respondents indicated that it could contribute to improving the throughput of engineering students.

**Table 6a**

**Benefit of the current user education programme**

<b>Benefit of user education?</b>	<b>n = 32</b>	<b>%</b>
Yes	21	65
No	3	10
Don't know	8	25
<b>Total</b>	<b>32</b>	<b>100</b>

Asked whether the current user education programme in place is of any benefit to the students, 65% responded 'yes', while 25% responded that they did not know.

The respondents who indicated 'yes' were asked how user education benefits their



students other than what was listed. Table 6 b provides a breakdown of their responses.

**Table 6b**

**Benefits of user education**

<b>Areas where students benefit</b>	<b>n=32</b>	<b>%</b>
There is an improvement in the project work of the students	13	41
There is an increase in student participation during lectures	10	31
The students obtain better grades	2	6
Other	3	9
<b>Total *</b>	<b>28</b>	<b>87</b>

\* multiple responses were obtained

As can be seen, the opinion of 13 (41 %) of the 21 respondents' indicated that there was an improvement in the project work of the students. Ten noted an increase in student participation in class and two noted an increase in grades. Under the category 'other' three respondents noted that students were more familiar with the facilities of the library and used a wider range of material after the user education.

**Table 7****Periods students are required to use the library**

<b>Library use</b>	<b>n = 32</b>	<b>%</b>
Daily	3	10
Weekly	23	71
Rarely	6	19
<b>Total</b>	<b>32</b>	<b>100</b>

Ten percent of the respondents indicated that students are required to use the library on a daily basis, 71% indicated on a weekly basis and 19% indicated rarely.

**Table 8a****Information sources used by students**

<b>Information sources</b>	<b>n = 32</b>	<b>%</b>
Books	29	90
Journals	15	47
Electronic sources	14	43
Reference sources	4	12
Bibliographies	3	9
<b>*Total</b>	<b>65</b>	<b>201</b>

\* multiple responses were received

Books were the most used information source, being mentioned by 29 (90 %) of the respondents. The least used information source was bibliographies, mentioned by 3 (9 %) of the respondents.

**Table 8b****Single most important information source**

<b>Information source</b>	<b>n = 32</b>	<b>%</b>
Books	16	50
Journals	5	15
Electronic sources	4	12
Bibliographies	0	0
Reference	1	3
No response	6	18
<b>Total</b>	<b>32</b>	<b>100</b>

In Table 8b when respondents were asked to indicate one of the above sources as the most important source, 50% of the respondents rated books as the most important source. Eighteen percent of the respondents chose not to respond to the question.

**Table 9a****Problems in accessing information in the library**

<b>Problems in accessing information?</b>	<b>n = 32</b>	<b>%</b>
Yes	14	44
No	5	15
Don't know	13	41
<b>Total</b>	<b>32</b>	<b>100</b>

In the response to whether the students experienced difficulty in accessing information, 44% of the respondents indicated that they did, while 41% indicated that they did not know.

**Table 9b****Areas which cause problems in accessing information**

<b>Areas</b>	<b>n = 32</b>	<b>%</b>
Cannot use the OPAC	7	22
Cannot find material	10	31
Library has no information	10	31
Other	5	16
<b>Total</b>	<b>32</b>	<b>100</b>

The above table indicates that 31 % of respondents attribute the students' inability to successfully access information in the library to the fact that they are not able to find the material/s on the shelf and 31 % attribute it to the fact that the library does not have the required information.

**Table 10a****Rating of library skills***(5- most important 1- least important)*

Skills	n = 32	5	4	3	2	1	Total
Computer literacy	n = 32	29 90%	1 3%	2 6%	0	0	32 100%
Ability to use the OPAC	n = 32	22 68%	5 15%	4 12%	1 3%	0	32 100%
Ability to use information in electronic format	n = 32	18 56%	7 21%	3 9%	2 6%	0	30 93%
Ability to find journals	n = 32	17 53%	10 31%	4 12%	0	0	31 96%
Ability to use Reserve	n = 32	12 37%	11 34%	6 19%	0	0	29 90%
Ability to use indexes	n = 32	8 25%	9 29%	7 22%	3 9%	1 3%	28 87%
Ability to use dictionaries	n = 32	5 15%	7 22%	8 25%	6 19%	3 9%	29 90%
Ability to use government publications	n = 32	4 12%	9 29%	5 15%	5 15%	6 19%	29 90%
Ability to use abstracts	n = 32	2 6%	11 34%	5 15%	6 19%	3 9%	27 84%
Ability to use encyclopaedias	n = 32	2 6%	3 9%	14 44%	5 15%	3 9%	27 84%

Not all the respondents rated all the skills listed

Computer literacy was rated as the most important skill by engineering academic staff followed by the ability to use the OPAC. The ability to use abstracts and encyclopaedias received the lowest rating of 6 %.

**Table 10b****Identification of the most important skill for students**

<b>Skills</b>	<b>n = 32</b>	<b>%</b>
Computer literacy	13	40
Ability to use the OPAC	7	21
Ability to use information in electronic format	4	12
Ability to find journals	2	9
Ability to use Reserve collection	1	3
Ability to use dictionaries	1	3
No response	4	12
<b>Total</b>	<b>32</b>	<b>100</b>

Computer literacy was rated as the most important skill, being mentioned by more than 40 % of the respondents. The ability to use dictionaries and the Reserve collection of the Library was identified by the least number (3 %) of respondents.

**Important skills that may have been omitted**

In question 10(c) staff were asked whether skills that they might consider as important were omitted in question 10(a). Twenty-five percent of the respondents indicated that skills were omitted from the list, 41% responded that the list was complete.

**Table 10c****Additional list of skills**

<b>Listing of skills</b>	<b>n = 8</b>	<b>%</b>
Ability to use all kinds of libraries	2	25%
Referencing and bibliographic skills	1	12
Skill in using English as technological language	1	12
Skill in sourcing information from suitable literature, especially the Internet	1	12
Skill in sourcing information from books by using contents and index pages	1	12
Respect of information sources	1	12
Skill in using interlibrary loans	1	12
<b>TOTAL</b>	<b>8</b>	<b>100%</b>

Staff were asked if there were any other skills they considered important. Table 10c ( provides a list of the skills respondents felt should have been included with only one skill the 'ability to use all kinds of libraries' being mentioned by more than one respondent.

**Table 11a****Importance of certain components in library user education programmes***(5 - most important to 1 - least important)*

<b>Components</b>	<b>n = 32</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>Total</b>
Hands-on training on the OPAC	n =32	24 75%	5 16%	2 6%	1 3%	0	32 100%
Guided tour of library	n =32	18 56%	8 25%	4 12%	1 3%	0	31 96%
Video and slide presentations	n =32	13 41%	8 25%	6 19%	2 6%	3 9%	32 100%
Research lecture by librarian	n =32	12 37%	9 29%	10 31%	0	0	31 96%
Assignments jointly designed by librarian and lecturer	n =32	7 22%	10 31%	3 9%	7 22%	3 9%	30 93%

Not all the respondents rated all the skills listed

Seventy-five percent of the respondents rated hands-on training on the OPAC as the most important component of the user education programme while only 22 % rated assignments jointly designed by the librarian and lecturer as most important.



**Table 11b**

**Components that could be incorporated into the library user education programme**

<b>Components</b>	<b>n =32</b>	<b>%</b>
No response	23	72
More hands-on training modules	2	6
Mainstream user education	2	6
User education becomes part of life skills course	1	3
Students must be taught how to search certain topics	1	3
User education must be taught in workshop format	1	3
Seminars/presentation by experts in their fields	1	3
What about needs of senior students	1	3
<b>TOTAL</b>	<b>32</b>	<b>100</b>

Seventy-two percent of the respondents chose not to answer this question. The responses of those who had alternate suggestions for components that could be incorporated into the user education programmes are listed in the table above. Only two suggestions, namely the need for more hands-on training and to mainstream user education, were mentioned by more than one respondent.

### **The importance of mainstreaming library user education in the Engineering Faculty**

There was an overwhelmingly positive response to question 12 regarding the importance of the mainstreaming of user education into the Engineering Faculty. 94% of the respondents indicated that the mainstreaming of library user education is important for the Engineering Faculty.

**Table 12**  
**Manner in which library user education should become part of the curriculum**

<b>Library user education in the curriculum</b>	<b>n = 32</b>	<b>%</b>
Incorporated in a service subject, e.g. Communication?	15	47
Part of a foundation course	8	25
Non-examinable subject	4	12
A credit-bearing subject	3	9
Other	2	6
<b>Total</b>	<b>32</b>	<b>100</b>

The respondents who replied in the affirmative were asked to indicate how the mainstreamed programme could become part of the curriculum. Forty-seven percent of the respondents recommended that the programme should be incorporated into the curriculum in a service subject such as Communication.

### **Willingness of respondents to participate in the programme if it was mainstreamed**

In response to question 14 as to the willingness of the respondents to participate in the user education programme should it be mainstreamed, 66 % of the respondents indicated that they would participate. 31 % of the respondents indicated that they would not participate and 1 respondent abstained.

### 4.3 RESPONSES OF LIBRARIANS

Below are the results of the survey of the librarians. The total number of librarians who were surveyed were eleven, five were librarians from the Department of Library and Information Studies and six were professional librarians from the Library. Seven (64%) librarians responded to the questionnaire of which three were from the Department of Library and Information Studies and four were from the Library.

**Table 13**

#### **Employment status of librarians**

<b>Employment status</b>	<b>n=7</b>	<b>%</b>
Permanent full-time	5	71
Permanent part-time	0	0
Contract full-time	1	14
Contract part-time	1	14
<b>Total</b>	<b>7</b>	<b>100</b>

More than 70 % of the librarians are full-time permanent employees. Of the librarians from the Department of Library and Information Studies, two are full-time employees and one is on a full-time contract. Three of the librarians from the Library are full-time employees and 1 is employed on a contract basis.

#### **Effectiveness of mainstreamed user education programme compared to the effectiveness of the current user education programme**

Respondents were asked in question 3 whether a mainstreamed user education programme would be more effective than the current programme. All the respondents (100%) indicated that it would be a more effective programme.

### **Effectiveness of the current user education programme**

In response to question 4, whether respondents regarded the current user education programme as effective, four (57%) of the seven respondents indicated that the current programme is of some benefit to the students, while three (43%) indicated that it was not. To break this down further, 3 practising librarians responded that the current programme was effective and 1 that it was not, whilst 2 librarians from the Department indicated that it was not effective and only 1 felt that it was.

**Table 14****Ranking of LIS skills**

<b>Skills</b>	<b>n = 7</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>Total</b>
Ability to use the OPAC	<b>n = 7</b>	6 86%	0	0	1 14%	0	7 100%
Ability to use indexes	<b>n = 7</b>	5 71%	0	0	1 14%	1 14%	7 100%
Ability to use abstracts	<b>n = 7</b>	5 71%	0	0	1 14%	1 14%	7 100%
Ability of use information in electronic format	<b>n = 7</b>	5 71%	0	1 14%	1 14%	0	7 100%
Computer literacy	<b>n = 7</b>	5 71%	1 14%	0	1 14%	0	7 100%
Ability to find journals	<b>n = 7</b>	5 71%	0	1 14%	1 14%	0	7 100%
Ability to use dictionaries	<b>n = 7</b>	4 57%	2 29%	1 14%	0	0	7 100%
Ability to use encyclopaedias	<b>n = 7</b>	4 57%	2 29%	0	0	1 14%	7 100%
Ability to use government publications	<b>n = 7</b>	4 57%	0	1 14%	1 14%	1 14%	7 100%
Ability to use Reserve	<b>n = 7</b>	3 43%	3 43%	0	1 14%	0	7 100%

### **Identification of the most important skill for students**

In question 5 the respondents were asked to specify one skill that they consider most important. Four (57 %) of the respondents identified using the OPAC as the most important skill. Computer literacy was rated as an important skill by two (29 %) of the respondents.

### **Identification of skills that were excluded**

In question 6 the respondents were asked whether any skills were excluded from the list. Three (43 %) of the respondents indicated that there were skills that were excluded and the same number (43%) felt that the list was complete and no skills were excluded. One (14%) of the respondents did not respond. The three respondents who had responded in the affirmative were asked to elaborate and the following indicates their responses.

**Table 15**

#### **Skills that should have been included**

<b>Skills</b>	<b>n=3</b>	<b>%</b>
To be able to locate material they found on the OPAC	1	33
Internet skills	1	33
Access to on-line databases, Internet	1	33

**Table16****Rating of components in a user education programme**

<b>Components</b>	<b>n = 7</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>Total</b>
Guided tour	n = 7	7 100%	0	0	0	0	7 100%
Hands-on training on OPAC	n = 7	6 86%	1 14%	0	0	0	7 100%
Video and slide presentations	n = 7	5 71%	2 29%	0	0	0	7 100%
Research lecture by librarian	n = 7	4 57%	2 29%	0	0	0	7 100%
Assignment jointly designed by librarian and lecturer	n = 7	4 57%	1 10%	1 14%	1 14%	0	7 100%

In question 8 the respondents were asked to rate the components in the user education programme. All of the respondents (100 %) gave the guided tour the highest rating followed by hands-on training on the OPAC. Assignments jointly designed by the librarian and the lecturer were rated by four (57 %) of the respondents, only.

**Listing of any other important components**

In question 9 the respondents were asked to list any other components that could be incorporated into the programme. Only 29 % responded to the question. Their responses are listed below:

- Surf the Internet and search bibliographic databases
- Basic book/library education as an introduction for the library-illiterate

### **The importance of the mainstreaming of library user education in the Engineering Faculty**

In question 10 the respondents were asked whether the mainstreaming of user education is important to the Engineering Faculty. Four (57 %) of the respondents indicated that it was, one (14 %) felt that it was not important, while two (28 %) of the respondents chose not to answer the question.

**Table 17**

#### **How should library user education become part of the curriculum?**

Library user education as part of the curriculum	n = 7	%
As a credit-bearing subject	3	43
As a non-examinable subject	0	
As a part of a foundation course	3	43
Incorporated in a service subject, e.g. Communication	1	14
Other	0	

In question 11 the respondents were asked to indicate how library user education could become part of the curriculum. The categories 'a credit-bearing subject' and 'part of a foundation course' were both chosen by 43 % of the respondents. One (14%) of the respondents recommended that the course be incorporated into a service subject such as Communication.

#### **Willingness to participate in the programme should it become mainstreamed**

In question 12 the respondents were asked whether they would be willing to participate in the programme should it become mainstreamed. Eighty-six percent of the respondents indicated that they would be willing to participate in the programme if it was mainstreamed. One (14 %) of the respondents chose not to answer the question.



## **CHAPTER 5**

### **DISCUSSION**

This chapter will discuss the results described in Chapter 4. The findings will be considered in the light of the research problem and the literature reviewed. Although there were no studies that specifically dealt with an investigation into the mainstreaming of user education into an Engineering Faculty, similar studies that dealt with the mainstreaming of user education in tertiary institutions will be referred to, where appropriate. The order of the discussion will be as follows: the response rate of the study will be discussed in 5.1, followed by a discussion of the personal demographics of the respondents and their eligibility to comment on the information needs and skills of students in 5.2. In 5.3 the value of user education to the general education of the engineering students will be discussed, followed by the information needs of the students in 5.4, and in 5.5 the library and information skills. Methods by which user education can be provided will be covered in 5.6, followed by the mainstreaming of user education in 5.7.

#### **5.1 RESPONSE RATE**

Seven out of the eleven librarians responded to the questionnaire making it a response rate of 64 %. From the Engineering Faculty thirty-two out of the eighty lecturers surveyed responded to the questionnaire which resulted in a response rate of 40%, which was much lower than had been anticipated. However, a similar study done by Leckie and Fullerton to investigate the attitudes academic staff had towards the teaching of user education in the sciences, health sciences and engineering had a response rate of only 23 % (Leckie and Fullerton 1999:12). The study by Thomas to investigate academic staff attitudes and habits regarding user education achieved a response rate of 17 % in 1982 and, when the same study was replicated in 1990, the

response rate was 28 % (Thomas 1994: 210). Cannon's faculty survey on library user education had a response rate of 41 % (Cannon 1994: 526). According to Cannon, a response rate of more than 40 % is regarded as unusual, as similar studies do not frequently exceed a response rate 20 to 30 %. In the light of the above, one could say that the response rate obtained in the present study was reasonable.

## **5.2 PERSONAL DEMOGRAPHICS**

As indicated in Chapter 4 (Tables 1 and 2), the majority of the respondents of the Engineering Faculty academic staff are permanent full-time staff members. In the case of the librarians from the Library and the LIS Department, Table 15 shows that the majority of the respondents are permanent full-time staff members.

Table 2 provides a breakdown of the teaching experience of the lecturers. More than half of the respondents have been teaching at the institution for more than five years.

Table 3 illustrates the positions held by the respondents. It shows that the majority of the respondents are lecturers and senior lecturers. The fact that they are in contact with the students almost on a daily basis and that the majority has been teaching at the institution for five years or longer suggests that they are more than qualified to venture an opinion on the information needs of their students. Their suitability is further amplified in Table 4, which provides a breakdown of the various levels of students that are taught by the respondents. The majority of the respondents lecture two or more levels of students, ranging from first-year to BTech level and are thus arguably able to comment on their information needs at each level.

### 5.3 VALUE OF USER EDUCATION

Tables 5 and 6 illustrate the high regard that is placed by the respondents on the contribution of user education to the general education of the engineering students. In Table (5) 84 % of the respondents indicate that user education can improve the throughput rate for the Engineering Faculty. More than half of the respondents (Table 6) feel that the current user education programme that is in place provides some benefits and that this is especially evident in the project work executed by students after a user education programme. These results correspond very closely with those achieved by Leckie and Fullerton. In their study, 77 % of the academic staff indicated that the user education course was useful and that they noted a marked improvement in the students' assignments and a greater use of library resources after a user education programme (Leckie and Fullerton 1999).

In the questionnaire for the librarians, just over half of the respondents felt that the current user education was of some benefit to the students. There is a marked discrepancy between the responses from the librarians and those from the engineering lecturers as to the effectiveness of the user education programme. Whereas more than 80 percent of the engineering lecturers felt that the user education programme provided some benefit to the students, only 57 percent of the librarians felt likewise. This rather lukewarm response on the part of the librarians can most probably be attributed to the fact that the librarians are faced with several difficulties when doing user education such as large classes, insufficient time to impart theoretical knowledge or do hands-on demonstrations of the various tools available. The fact that the current user education programme is not compulsory or credit-bearing makes it even more difficult to convince students that this programme can contribute to their education. The current programme certainly does not reach the full complement of students, as intended, and this is clearly evident to librarians who interact with these students on a daily basis. Students tend to perceive user education as an add-on rather than a

mainstreamed subject, as extrinsic and unrelated to their main courses. Because it has no credit value, they tend to miss the classes if possible. This perhaps also explains the rather overwhelming positive response from the librarians regarding the question (question 2) as to whether mainstreamed user education would be more effective than the current user education.

#### **5.4 INFORMATION NEEDS OF STUDENTS**

In question 8 (a) the respondents (engineering lecturers) were given several choices of information sources and were asked to choose those sources used or required by the students. The results in Table 8 clearly demonstrate that books as an information source received the highest rating of (90 %), followed by journal articles and then electronic sources of information. Question 8 (b) required that the respondents use the same list as provided in 8 (a) and rate a single source as the most important source of information for the students. Books were again rated as the most important source by more than 50 % of the respondents, followed by journals and then electronic sources of information. Although the sciences and engineering students rely predominantly on standard texts which describe the basic principles of engineering, such as the laws of physics or mechanics, it could be said that in most cases there is an over-reliance on textbooks, to the exclusion of all other formats of information sources. This is echoed by Leckie and Fullerton (1999: 11), who state that it is possible for science and engineering students to avoid using the library altogether until relatively late in their educational experience. Students can progress to a relatively senior level without having read beyond their textbooks and notes from the lecturer. According to Amstutz and Whitson (1997: 23), academic staff generally continue to use traditional sources of information. Textbooks, in particular, still remain the primary resource required in classes. They further suggest that academic staff are capable of passing their biases towards certain sources of information on to their students who, in turn, can continue the cycle. In most cases students are unlikely to look for material beyond

what was suggested by the lecturer. They see the lecturer as the primary source of reference.

This ties in with Erdman's statement that the typical undergraduate engineering education encourages students to rely to a great extent on the textbook and notes that are placed on Reserve and that the engineering students, on the whole, seldom initiate independent information-gathering (Erdman 1990:458). There seems to be an over-reliance on material placed on Reserve. This ultimately acts as a barrier to information-seeking (Zondi 1992: 63). Although the aim of the Reserve collection should be to provide the student with the primary source material that should be consulted by all the students, the situation in most tertiary institutions is that these are often the only sources that students will consult. Thus the Reserve collection actually deprives the student of discovering which other sources are also available (Zondi 1992: 63).

Research by Leckie and Fullerton (1999), Holland and Powell (1995) and Ackerson and Young (1994) indicates that the inability to find and use appropriate information timeously is often identified as one of the main obstacles encountered by practising scientists and engineers. Ruth's study on problems experienced by students in the library at the University of the Western Cape in South Africa showed that many of the courses there are too textbook-dependent and suggests the possible designing of a curriculum that does not require a prescribed textbook or a reader for a course (1997: 174). The problems outlined by Ruth (1997: 174) are also in existence at the M.L.Sultan Technikon. The majority of the students in the Engineering Faculty do not read beyond their prescribed books, notes and reading lists and this does not prepare students for 'real life' after graduation. At M.L. Sultan librarians have observed that students are extremely reluctant to use any book that is not on their 'reading list' even though it may be very appropriate for the assignment of project. This is aptly demonstrated in the study by Holland and Powell (1995) on the information-seeking

habits of engineers. Because of the rapid increase in information becoming available in certain disciplines, one must face the fact that certain texts can become redundant almost as soon as they are printed. It would therefore be more effective and practical that students are taught information-gathering skills rather than just being taught from existing information sources (Ackerson and Young 1994: 133). The skills that can be gained from user education are not exclusively limited to the academic setting but ultimately become a lifelong skill which can be used in any setting, be it work, leisure or study.

## **5.5 LIBRARY AND INFORMATION SKILLS**

In questions 10(a) and 5, the academic staff and librarians, respectively, were asked to rate a list of skills on a continuum of one to five, five being rated as the most important and one as the least important. Table 10(a), which reflects the statistics from the engineering academic staff and Table 14 (those from the librarians) provide a breakdown of the responses from both groups. It is interesting to note that, whilst certain skills received more or less the same rating from librarians and academic staff, the two groups differed widely on others. For instance, computer literacy was rated as most important by 90 % of engineers and 71 % of librarians and the skill of using the OPAC was rated as most important by 68 % of the academic staff and 86 % of librarians. This in itself is an indication that the engineering faculty realize that in order to exploit information to its fullest one must be computer literate since more and more sources are now digitized. At the other extreme, although more than 50 % of the librarians felt that the skill in using dictionaries, indexes and encyclopaedias should be rated as most important, only between 6 % and 25 % of academics felt that these skills were most important. It would seem that librarians believe that students should be able to use encyclopaedias, dictionaries, indexes and abstracts with competence and therefore they should be included in the user education programmes. Engineering academic staff in this study, on the other hand, do not regard this ability to access

these sources with competence as an important skill. The article by Engeldinger (1992: 23) highlights this anomaly which, according to Engeldinger, is all too common at academic institutions. He stresses the importance of librarians and academics forging a partnership and exchanging information in order to identify the information needs of students, and if need be, for librarians to "...convince faculty of their erroneous opinions" regarding certain information tools (Engeldinger 1992: 23).

Questions 6 and 10(b) asked the respondents to rate one skill that they considered as most important. Table 10(b) reflects the statistics from the engineering academic staff. They identified computer literacy as the most important skill, followed by the ability to use the OPAC. The librarians, on the other hand, rated the ability to use the OPAC as more important followed by computer literacy.

## **5.6 METHODS BY WHICH USER EDUCATION IS PROVIDED**

More than 50 % of both groups of respondents rated hands-on training on the OPAC and the guided tour of the library as very important components of the user education programme. None of the other components listed in table 11(a) for the engineering academic staff received a rating by more than 50 % of the respondents. Both the librarians and the engineering academic staff indicated a relatively low response to collaboratively designed assignments. Certainly, with a response of only 22 % from the engineering academic staff, the message was quite clear that collaboration in assignments as a component does not have their full support.

Although the library tour and the demonstration by the librarian on using the OPAC seem to be popular with both groups of respondents, these methods on their own are not adequate for user education. One of the disadvantages attached to the library tour is that the groups are often too large and there are not enough staff to allow available for smaller groups. With large classes, students are unlikely to see everything that is

pointed out and unable to hear the librarian.

Breivik and Gee (1988) advise against a user education that is 'passive' and state that user education is more effective when it is tied to a graded assignment or project. A so-called 'passive' exercise is when students are taken on a tour, or the OPAC demonstrated, when the students cannot see a need for it. When user education is linked to an assignment it enhances the learning of the information skill being taught. Information-seeking can then be taught as a process, with less emphasis on the tools that are used and more on the process (Burrows et al. 1989). However, should user education become mainstreamed and, by implication, time- tabled, it will then not be seen as something that is added on, as is currently the case, but rather as thoroughly integrated into the curriculum. A collaborative approach to user education by both librarians and engineering academic staff would further enhance the programme by linking it to assignments and projects.

## **5.7 MAINSTREAMING OF USER EDUCATION**

The response from the engineering academic staff regarding the mainstreaming of user education is a clear mandate from them that the current programme is no longer appropriate. In Table 12 more than 90 % of the respondents regard the mainstreaming of user education in the Engineering Faculty as important and more than 60 % of them are willing to participate in the programme, should it be included. This demonstrates a growing acceptance on the part of the academic staff that user education will be more effective if it is completely integrated into the existing curriculum, as opposed to it standing alone as a programme divorced from the general curriculum.

Regarding the method of how user education should become part of the curriculum, not a single option listed received a rating of more than 50 % from the respondents. User education as a credit-bearing subject received the lowest rating (9 %), while the



possibility of incorporating user education into an existing course received the highest rating from the respondents (47 %). It would thus seem that, although the respondents overwhelmingly support the principle of the mainstreaming of user education and pledge their support to participate in the programme should it be required, they are still hesitant about incorporating it into the very heart of the engineering courses. According to Karelse and Liebenberg (1996) academics are often reluctant to embrace the emerging role of librarians (she uses the term 'information personnel') because they would then have to reassess their own historic approaches to teaching. Should the user education programme become part of the curriculum by incorporating it into an existing subject such as Communication, as 47 % of the respondents indicated, it will be taught by 'outsiders'. Communication is taught by Faculty of Arts lecturers and one wonders whether students will regard it as a 'legitimate' engineering subject or perhaps see it as 'outside' their engineering courses or as a 'non-engineering course.'

The response rate of the librarians regarding the possible mainstreaming of user education was not as high as those of the engineering lecturers. Four of the seven librarians (57 %) supported mainstreaming. Of the possible options listed as to how it was to become part of the curriculum, 3 practising librarians supported the option of a credit-bearing subject and 3 librarians from the Department saw it as part of a foundation course. One librarian from the library felt that it should be included in a service subject. The discrepancy between the responses from librarians and engineering academic staff is not unique to this institution. In Julien's survey of tertiary libraries in New Zealand, the librarians expressed reservations about playing a more active role in the incorporation of user education into the general curriculum. Many of the librarians saw a more proactive or prominent role on their part in the general curriculum as 'role overload' for librarians, referring to the difficulties that librarians face as they endeavour to fulfil all the roles expected of them (Julien 1998: 308). The most commonly expressed concern was a perceived lack of resources to

support user education activities, such as suitable classrooms, insufficient time and necessary equipment for hands-on training (Julien 1998: 308). According to Karelse and Liebenberg (1996) "...librarians are generally unconfident and underprepared to assert their role as facilitators...". One cannot say whether these reservations are applicable to the librarians in this study. However, more than 80 percent of the librarians did indicate that they would be willing to participate in the programme, should user education become mainstreamed.

## **CHAPTER 6**

### **CONCLUSION**

In this chapter a brief summary of the study will be provided. Conclusions and recommendations based on the discussion in Chapter 5 will also be made. Finally, recommendations for further research will be offered.

#### **6.1 SUMMARY OF THE STUDY**

The aim of this study was to determine whether it was possible to mainstream library user education in the Engineering Faculty of M.L. Sultan Technikon. The objectives of the study were:

- To establish the view of the academic staff in the Engineering Faculty, academic staff of the Library and Information Studies Department, and librarians from the Library, regarding the mainstreaming of user education in the engineering curriculum;
- To establish what type of skills they thought should be taught in the programme, and, lastly,
- To determine who should be teaching the course.

To achieve this, the academic staff from the Engineering Faculty and the librarians from the Library and librarians lecturing in the Library and Information Studies Department were surveyed.

The catalyst for the study was the observed inability of students in the Engineering Faculty to search for and find information, their reluctance to make use of sources of information that are not prescribed for the course, and their heavy reliance on materials placed on Reserve for them by their lecturers.

Although user education is undertaken in the majority of libraries in tertiary institutions, it is very rarely integrated into the general curriculum in tertiary institutions. As mentioned in Chapter 1, none of the Technikons in the province of KwaZulu-Natal is currently offering a mainstreamed user education programme. Many of the academic staff at tertiary institutions appreciate the interventions that user education can bring about in the academic life of a student, but because the user education programmes are not mainstreamed and therefore not time-tabled, user education is seen by both lecturers and students as outside the main curriculum and therefore of less importance.

In Chapter 1 the aim and objectives of the study were outlined and the justification for the study was provided. This was followed by a short description and history of the M.L. Sultan Technikon. Terms used in the study were defined and put in context for the purpose of the study. Finally, the limitations of the study were discussed.

In Chapter 2 the researcher reviewed the literature related to this study. It was established that a study of this nature had not been conducted in tertiary institutions in South Africa. Internationally, while there were studies that had been conducted, they were not limited exclusively to engineering faculties. In this chapter a history of user education in tertiary institutions was provided. This was followed by examples of the mainstreaming of user education in tertiary institutions and an examination of the pivotal role that libraries play in tertiary education and learning. An attempt was made to align user education with the principles that underpin the new educational

system in South Africa, namely Outcomes-Based Education (OBE). The attitude of lecturers towards user education and the possible mainstreaming of user education were discussed. This was followed by a brief outline of the information needs of engineers and engineering students.

In Chapter 3 the methodology and the rationale for using that particular methodology in the study were described. The method and data collection technique used in this study were the survey and the self-administered questionnaire. A brief description of a survey was provided, with an outline of the types of questionnaires that can be used in a survey. The advantages and disadvantages of the questionnaire were described, followed by a discussion on the reliability and validity of the questionnaire. In conclusion, a breakdown of the population was provided, with brief explanations of the questions that were asked in the questionnaire.

Chapter 4 consisted of the findings of the survey. These were presented in the form of tables and text, the latter being used to highlight significant aspects of the findings.

The results of the study were discussed in Chapter 5. The results were discussed in broad categories rather than question by question and, where applicable, related to previous research in the area.

## **6.2 SIGNIFICANT FINDINGS**

- According to the current study, more than 80 % of the engineering lecturers feel that user education can improve the throughput rate of engineering students at the Technikon.

- The possible mainstreaming of user education in the Engineering Faculty is, to a large extent, supported by both groups of respondents. More than 90 % of engineering lecturers and close to 60 % of the librarians agree that the mainstreaming of user education into the Engineering Faculty is important.
- In response to the question concerning the effectiveness of a mainstreamed user education programme, compared to the current user education programme, all the librarians (100 %) felt that a mainstreamed user education programme would be a more effective course.
- Books as an information source for students were rated the most important source of information by the engineering lecturers. Although most courses have some form of prescribed book or recommended reader, there seems to be an over-reliance by lecturers on these sources of information, to the near exclusion of all other formats. As mentioned in Chapter 5, students tend to take their cue from lecturers and are unlikely to look beyond what is recommended by the lecturer.
- The following skills were rated by the engineering lecturers as important skills for students to have:
  - computer literacy,
  - the ability to use the OPAC, and
  - the ability to use information in electronic format.

Librarians rated the following skills as important:

- the ability to use the OPAC,
- the ability to use indexes, and
- the ability to find journals.

- The least important skills identified by engineering lecturers were:
  - the ability to use encyclopaedias,
  - the ability to use abstracts, and
  - the ability to use government publications.
  
- The least important skills identified by the librarians were:
  - the ability to use the Reserve Department,
  - the ability to use government publications, and
  - the ability to use encyclopaedias.
  
- Hands-on training on the OPAC, the guided tour of the library and video and slide presentations were rated as the most important components of the user education programme as it presently stands, by both the engineering lecturers and the librarians.
  
- The majority of the engineering lecturers indicated that if user education was mainstreamed it should be incorporated into the curriculum as part of a service subject such as Communication.
  
- Less than half (43 %) of the librarians see library user education being mainstreamed as a credit-bearing subject and the same percentage see it as part of a foundation course.
  
- If user education is to become mainstreamed, more than half (66 %) of the engineering lecturers and 86 % of the librarians are willing to participate in the programme.
  
- Both the librarians and the lecturers indicated a relatively low positive response to collaboratively designed assignments. Twenty-two percent of the lecturers

rated this component as important, while 57 % of librarians rated it as important. Collaboration between the librarian and the lecturer has been thwarted on many campuses (even though both groups want to ensure that students receive the best education and have the necessary skills for lifelong learning), simply because there is confusion as to each other's role (Leckie and Fullerton 1999: 10). The reluctance on the part of some librarians to collaborate with lecturers can be ascribed to various factors. Some librarians feel that they have not had formal training in teaching or learning methods and are therefore not skilled in educational techniques, while others see it as outside the duties of a librarian. At some tertiary institutions librarians do not enjoy academic status and are regarded as administrative staff who do not teach.

### 6.3 CONCLUSIONS AND RECOMMENDATIONS

At the M.L. Sultan Technikon, as in most of the technikons in South Africa, user education takes place within the library setting, more often than not in isolation from the institution's broader education goals and philosophies. It has become well integrated into the library profession and virtually all tertiary institutions offer some form of user education to their users, yet it is still generally a programme not integrated into the curriculum. However, there is a trend for user education no longer to be considered just the domain of librarians, but rather to be part of a holistic approach to education in which librarians, academics, and others collaborate in generating cross-curricular studies (Sayed 1998: 6).

Although the mainstreaming of user education into the Engineering Faculty is supported by both the engineering lecturers and the librarians, this does not mean that it will become a *fait accompli*. Time-tabling, and the lack of IT resources and human resources could be some of the constraints that could hamper the introduction of a mainstreamed programme. For instance, if the subject-librarians participate in a



mainstreamed programme, who would carry out their functions as subject librarians? Are the engineering lecturers prepared to team-teach with the librarians? There was also no consensus amongst the two groups of respondents on how user education would be introduced into the curriculum.

Research and papers presented by Behrens (1993), Rader (1995), Breivik (1988) and several others identified in Chapter 2 indicate that when user education takes place without a strong link to the academic coursework, it can impart very little knowledge of lasting significance to the students. For user education to benefit the user it must be presented incrementally and at the time of need, rather than in short intense bursts during which information sources and tools are demonstrated for their own sake rather than being linked to a subject. By supporting the mainstreaming of user education, librarians and engineering lecturers imply that they subscribe to this school of thought.

The role of the librarian is not merely to be the custodian of books, but to actively participate in the teaching, learning and research programmes of the institution. Librarians and lecturers alike need to move away from the view of the library as a 'quiet place to study' and really make it the 'heart' of the tertiary institution. The current information society provides an opportunity for librarians to forge partnerships with academic staff to bring about curriculum restructuring and a new, active resource-based learning environment for students. A strong recommendation would be for the establishment of a forum, where librarians and lecturers could meet to negotiate on how to link user education to the curriculum.

It is important that students not be limited to sources that are available in their own libraries, but that they learn how to access different information sources, both inside and outside the library, especially the type of sources that will be available after they graduate. In Table 10c (ii), 25 % of the engineering lecturers felt that the skill to use libraries other than the technikon library is a very important skill. Technology-based

societies necessitate that individuals take responsibility for their own learning, and are able to access information in a variety of sources and formats and thereby become active learners.

In the present study, both groups of respondents that were surveyed demonstrated their support for the mainstreaming of user education into general curriculum. The Engineering Faculty recognized the importance of user education and the possible benefits that a mainstreamed programme can bring to the Engineering Faculty. Although the rating of the skills highlighted the fact that librarians and lecturers had different views concerning library and information skills, it emphasized the fact that it is necessary for these two groups to recognize that they are partners and not rivals in education. It is evident from this study that without co-operation and communication between librarians and engineering lecturers, user education is doomed to remain on the periphery of the curriculum.

#### **6.4 SUGGESTIONS FOR FURTHER RESEARCH**

Although this study was limited to the Engineering Faculty only, the findings could have some significance for the other faculties. A suggestion for further research would be to investigate the views of the lecturers in all the other faculties regarding the mainstreaming of user education.

This study canvassed the views and opinions of librarians and the lecturers of the Engineering Faculty only. A follow-up study could investigate the opinions and views of the students of the Engineering Faculty about the possible mainstreaming of user education. Further research could investigate whether there have been significant changes in the students' grades once the course has been mainstreamed.

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## **Appendix A**

### **SURVEY ON THE MAINSTREAMING OF LIBRARY USER EDUCATION IN THE ENGINEERING FACULTY, ML SULTAN TECHNIKON.**

#### **AIM OF SURVEY**

As part of my Masters degree I am conducting a survey to determine the views of lecturers in the Engineering Faculty and the Department of Information Studies and of the professional staff in the library, regarding the mainstreaming of library user education for first year students in the Engineering Faculty.

#### **REASONS FOR THE SURVEY**

Most academic libraries carry out some form of user education whereby students are taught how and where to find information in the library. The content of this user education varies from a short tour of the library to a detailed programme of bibliographic instruction lasting several hours. At ML Sultan Technikon, this is not a credit-bearing course nor is it time-tabled. Librarians usually make informal arrangements with the lecturers in order to obtain one or two periods in which to teach the students library skills. A problem frequently encountered with this arrangement is that students do not perceive the user education to be relevant to their courses. It is often taught in total isolation from what the student is studying because it is not sufficiently course-integrated. One way to address this problem is to ensure that the user education is related to or integrated into the courses.

The majority of our students have little or no experience in using libraries for accessing and retrieving information and many of them appear intimidated at the prospect. We are living in what is termed the information society. Our societies and economies are driven by information, and our students have to adapt themselves to the rapid changes in society by being able to work with information. Students going through the education process must be equipped with the skills to become information literate. The trend at higher tertiary institutions of learning is to incorporate information literacy programmes into the curricula. Not only will learning then be interactive, but it will also be a lifelong process and, critically, fit into the framework of outcomes-based education.

Hence this survey to determine your views on various aspects related to the mainstreaming of user education. Your participation in this survey is therefore much appreciated.

If you have any queries, I can be contacted on extension 5456, via e-mail at **websterl** or in the library, where my office is on the ground floor near the exit.

Many thanks.

.....

**L.E. Webster**

## Appendix B

### Questionnaire to the librarians

- (1) What is your current employment status at ML Sultan Technikon?
- Permanent full-time ☐
- Permanent part-time ☐
- Contract full-time ☐
- Contract part-time ☐
- (2) Are you a ...
- Lecturer in the LIS department? ☐
- Librarian in the library ☐
- (3) Do you think a mainstreamed user education programme would be more effective than the current user education programme in place?
- Yes ☐
- No ☐
- Don't know ☐
- Please elaborate
- .....
- .....
- .....
- (4) Do you think the current library user education programme (library orientation) is of any benefit to the students in terms of their ability to access information relevant to their courses?
- Yes ☐
- No ☐
- Don't know ☐
- (5) How important do you rate the following skills for students?  
(Please circle the number that most closely indicates your rating.)  
1 (not important) → 5 (very important)
- |   |   |   |   |   |   |
|---|---|---|---|---|---|
| To be able to use the OPAC(computerized catalogue)    | 1 | 2 | 3 | 4 | 5 |
| To be able to use the shortloan/reserve department    | 1 | 2 | 3 | 4 | 5 |
| To be able to use dictionaries                        | 1 | 2 | 3 | 4 | 5 |
| To be able to use encyclopaedias                      | 1 | 2 | 3 | 4 | 5 |
| To be able to use journals                            | 1 | 2 | 3 | 4 | 5 |
| To be able to use indexes                             | 1 | 2 | 3 | 4 | 5 |
| To be able to use abstracts                           | 1 | 2 | 3 | 4 | 5 |
| To be able to use government publications.            | 1 | 2 | 3 | 4 | 5 |
| To be able to use all of the above in electronic form | 1 | 2 | 3 | 4 | 5 |
| To be computer literate                               | 1 | 2 | 3 | 4 | 5 |

(6) Of the above, specify one skill you consider the most important?

.....

.....

(7) Are there any other skills not included here that you think should be incorporated?

Yes ☐

No ☐

Don't know ☐

If yes, please elaborate

.....

.....

.....

(8) How important would you rate the following components as used in a library user education programme?

*(Please circle the number that most closely indicates your rating)*

*1 (not important) → 5 (very important)*

Hands-on training on the OPAC (computerized catalogue)	1	2	3	4	5
---	---	---	---	---	---

Guided tour of the library and relevant service points	1	2	3	4	5
---	---	---	---	---	---

In-class subject-specific library research lecture by a librarian.	1	2	3	4	5
---	---	---	---	---	---

Assignments jointly designed by you and a librarian	1	2	3	4	5
--	---	---	---	---	---

Video and slide presentations	1	2	3	4	5
-------------------------------	---	---	---	---	---

(9) Please list any other components that you consider important

.....

.....

.....

.....

.....

(10) Do you consider the mainstreaming of library user education to be important in the Engineering Faculty?

Yes ☐

No ☐

If 'yes' please go to question 13. If 'no' please elaborate.

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

(11) Should library user education become part of the curriculum as...

a credit-bearing subject? ☐

non-examinable subject? ☐

part of a foundation course? ☐

incorporated in a service subject e.g. communication? ☐

Other, please elaborate ☐

.....  
.....

(12) Would you be willing to co-operate in the programme if it was mainstreamed.

Yes ☐

No ☐

**Appendix C**  
**Questionnaire to the Engineering Lecturing Staff**

**SECTION A**

**(1)** What is your current employment status at ML Sultan Teknikon?

- Permanent full-time ☐
- Permanent part-time ☐
- Temporary part-time ☐
- Contract ☐

**(2)** How long have you been lecturing at ML Sultan Teknikon?

- Less than one year ☐
- Between 1 and 2 years ☐
- Between 3 and 4 years ☐
- More than 5 years ☐
- Other ☐
- Please elaborate

.....  
.....

**(3)** What is your position at ML Sultan Teknikon?

- Head of department ☐
- Senior lecturer ☐
- Lecturer ☐
- Associate lecturer ☐
- Other ☐
- Please elaborate

.....  
.....

**(4)** What level of student are you teaching?

- 1<sup>st</sup> year students ☐
- 2<sup>nd</sup> year students ☐
- 3<sup>rd</sup> year students ☐
- Other ☐
- Please elaborate

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



## **SECTION B**

- (5) Do you think that user education can contribute to improving the throughput rate for your faculty?

Yes ☐

No ☐

Don't know ☐

If yes or no, please elaborate.

.....

.....

.....

- (6a) Do you think the current library user education programme (library orientation) is of any benefit to the students in terms of their ability to access information relevant to their courses?

Yes ☐

No ☐

Don't know ☐

- (6b) If yes , please tick the boxes that are applicable.

There is an improvement in the project work of students ☐

There is an increase in student participation during lectures ☐

The students obtain better grades ☐

Other, please elaborate

.....

.....

.....

- (7) To what extent are students required to use the library in the subject that you teach?

On a daily basis ☐

On a weekly basis ☐

Rarely ☐

Not at all ☐

**(8a)** Which of the following specific information needs do your students have? (*Please circle the number that most closely indicate your rating*)

Information from books (including textbooks).....1

Information from journal articles.....2

Information from reference sources e.g encyclopedias, dictionaries, etc..... 3

Information from bibliographies, indexes and abstracts.....4

Information from electronic sources e.g. cd roms, Internet, etc..... 5

Other, please elaborate

**8b)** Of the above, specify one need you consider the most important?

**(9a)** Do your students experience difficulty in accessing information related to your subject in the library?

Yes ☐

No ☐

Don't know ☐

**(9b)** If “yes”, please tick any of the boxes applicable.

Cannot use the OPAC ☐

Cannot find the material on the shelf ☐

The library does not have a copy ☐

Other, please elaborate.

- (10a) How important do you rate the following skills for students?  
*(Please circle the number that most closely indicates your rating)*  
 1 not important → 5 very important

To be able to ...

→use the OPAC(computerized catalogue)	1	2	3	4	5
→use the shortloan/reserve department	1	2	3	4	5
→use dictionaries	1	2	3	4	5
→use an encyclopaedia	1	2	3	4	5
→find journals	1	2	3	4	5
→use indexes	1	2	3	4	5
→use abstracts	1	2	3	4	5
→use government publications.	1	2	3	4	5
→use all of the above in electronic form	1	2	3	4	5
→To be computer literate	1	2	3	4	5

- (10b) Of the above, specify one skill you consider the most important?

.....  
 .....

- (10c) Are there any other skills not included here that you consider important?

Yes ☐

No ☐

Don't know ☐

If yes, please elaborate

.....  
 .....

- (11a) How important would you rate the following components as used in a library user education programme?

*(Please circle the number that most closely indicates your rating)*

1 not important → 5 very important

→Hands-on training on the OPAC (computerized catalogue)	1	2	3	4	5
→Guided tour of the library and relevant service points	1	2	3	4	5
→In-class subject-specific library research lecture by a librarian.	1	2	3	4	5
→Assignments jointly designed by you and a librarian	1	2	3	4	5
→Video and slide presentations	1	2	3	4	5

(11b) Please list any other components that you consider important

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

(12) Do you consider the mainstreaming of library user education as important in the engineering faculty?

Yes ☐

No ☐

If 'yes' please go to question 13. If 'no' please elaborate.

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

(5) Should library user education become part of the curriculum as...

a credit-bearing subject? ☐

non-examinable subject? ☐

part of a foundation course? ☐

incorporated in a service subject e.g. communication? ☐

other, please elaborate ☐

.....  
.....

(14) Would you be willing to participate in the programme if it was mainstreamed?

Yes ☐

No ☐

## **Appendix D - library orientation pamphlets**

**LIBRARY  
HOURS**

Mon - Thurs:  
8H30 to 16H30

Saturdays:  
8H30 to 17H00

**M L SULTAN  
TECHNIKON**

**LIBRARY 1999**  
*Libraries for lifelong learning*



**Books on the shelves are arranged in Subject order**

**Subject codes appear on the spine of the book**

**000 Generalities**

- 001.6 Computers
- 020 Library & information sciences
- 030 General encyclopedic works
- 070 Journalism, publishing, newspapers

**100 Philosophy**

- 110 Metaphysics
- 120 Epistemology
- 140 Specific philosophical viewpoints
- 150 Psychology
- 160 Logic
- 170 Ethics
- 190 Modern Western philosophy

**200 Religion**

- 210 Natural religion
- 220 Bible
- 230 Christian theology
- 270 History & geography of church
- 290 Other & comparative religions

**300 Social sciences**

- 301 Sociology
- 320 Political science
- 330 Economics
- 340 Law
- 350 Public Administration
- 360 Social problems & services
- 370 Education
- 380 Commerce (Trade)
- 390 Customs, etiquette, folklore

**400 Language**

- 410 Linguistics
- 420 English, languages
- 430 German
- 440 French
- 450 Italian
- 460 Spanish & Portuguese
- 470 Latin
- 490 Other languages

**500 Pure sciences**

- 510 Mathematics
- 512 Algebra
- 515 Statistics
- 516 Geometry
- 520 Astronomy & allied sciences
- 530 Physics
- 540 Chemistry & allied sciences
- 550 Sciences of earth and other worlds
- 560 Paleontology
- 570 Life sciences
- 580 Botanical sciences
- 590 Zoological sciences

**600 Technology (Applied science)**

- 610 Nursing
- 611 Anatomy
- 612 Physiology
- 614 Public health
- 615 Pharmacology
- 616 Diseases
- 620 Engineering & allied operations
- 624 Civil engineering
- 630 Agriculture & related technologies
- 640 Cookery
- 642 Meal & table service
- 647 Hotel & catering
- 651 Office service
- 657 Accounting
- 658 Management
- 659 Advertising/PR
- 660 Chemical & related technologies
- 670 Manufactures
- 677 Textiles
- 680 Manufactures
- 690 Buildings

**700 The arts**

- 710 Civic & landscape art
- 720 Architecture
- 730 Sculpture
- 740 Drawing, decorative & minor arts
- 750 Paintings & paintings
- 760 Graphic arts/Prints
- 770 Photography
- 780 Music
- 790 Sports/Games

**800 Literature (Belles-Lettres)**

- 810 American literature
- 820 English literature

**900 General geography & history**

- 910 Tourism
- 920 General biography & genealogy
- 930 General history of ancient world

## GEOGRAPHICAL SOURCES

The best known forms are the **Atlases**, which not only show given countries but may illustrate themes such as historical development, social development and scientific centres. Geographical sources also include gazetteers, dictionaries of place names, and guidebooks.

### Example:

The Times Atlas of the World

R912TIM

## INDEXES

Indexes help you to identify and trace materials by giving you references to information sources. Indexes to the contents of magazines and newspapers are the most frequently used.

### Example:

The Reader's Guide to Periodical Literature

R050.011REA

## BIOGRAPHIES

These reference sources give you information on people distinguished in some particular field of interest.

### Examples:

Who's Who  
Current Biography

R920.02WHO  
R920.02CUR

## BIBLIOGRAPHIES

**Bibliographies** themselves normally do not give answers, but direct users to the sources of answers. The items listed are found either at that library or available from another library.

### Example:

Books-in-Print

R011B00

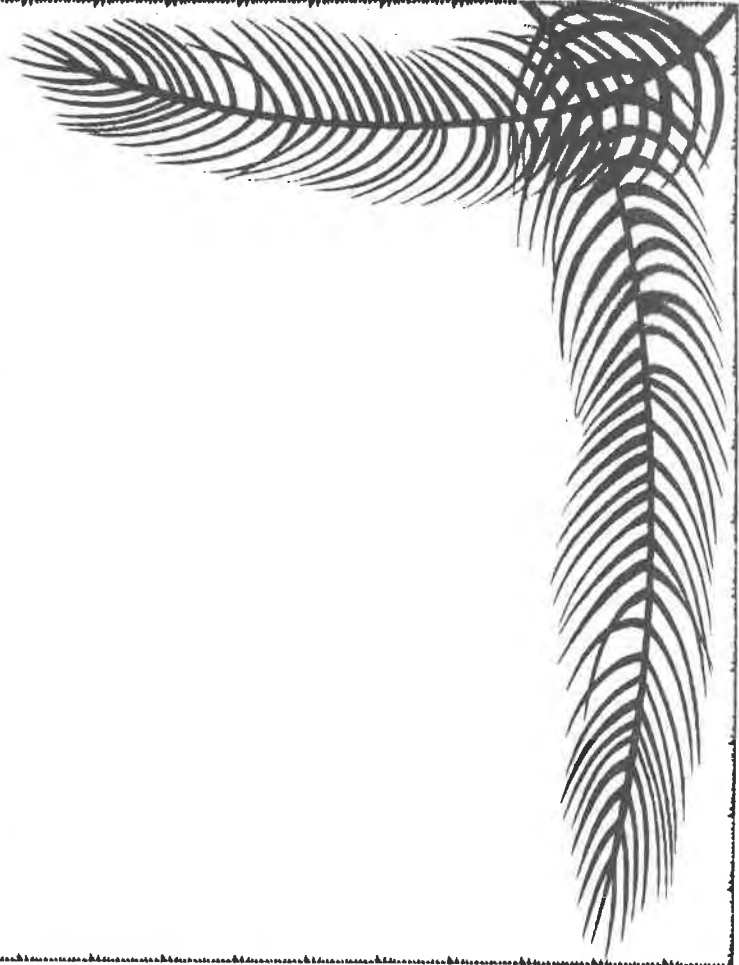
*Should you need any assistance, please feel free to visit your Subject Librarian*



ML SULTAN  
TECHNIKON

**B M Patel Library**

**Reference Books in  
Engineering**





## NEXUS

\* DATABASE ON CURRENT AND COMPLETED HUMAN AND SOCIAL SCIENCES RESEARCH PROJECTS IN SOUTH AFRICA, CONTAINING OVER 65 000 RECORDS WITH ABSTRACTS

## SABINET

\* THE SOUTH AFRICAN BIBLIOGRAPHIC AND INFORMATION NETWORK (SABINET) IS A NETWORK THAT PROVIDES ACCESS TO SEVERAL NATIONAL AND INTERNATIONAL DATABASES.

\* *SOME OF THE MOST COMMONLY ACCESSED DATABASES ARE:*

- **SACD** (SOUTH AFRICAN CO-OPERATIVE DATABASE) : LISTS ALL BOOKS HELD BY SOUTH AFRICAN LIBRARIES THAT SUBSCRIBE TO THE NETWORK, COVERING THE PERIOD +-1900+
- **UCTD** (UNION CATALOGUE OF THESES AND DISSERTATIONS) : LISTS COMPLETED RESEARCH AT MASTERS AND DOCTORATE LEVEL AT SOUTH AFRICAN UNIVERSITIES, COVERING THE PERIOD 1918+
- **NAVTECH**: LISTS PROJECTS UNDERTAKEN AT SOUTH AFRICAN TECHNIKONS
- **ISAP** (INDEX TO SOUTH AFRICAN PERIODICALS) : LISTS ARTICLES PUBLISHED IN SOUTH AFRICAN PERIODICALS, SINCE 1987 ONLINE AND EARLIER THAN 1987, ON MICROFICHE
- **BLII** (BRITISH LIBRARY INSIDE INFORMATION) : LISTS INFORMATION FROM OVER 10 000 MOST USED JOURNALS HELD BY THE BRITISH LIBRARY DOCUMENT SUPPLY CENTRE
- **ERIC** SAMPLE (SEE ABOVE)

\* A LITERATURE SEARCH ON ANY OF THESE DATABASES WILL PRODUCE A LIST OF BIBLIOGRAPHIC DETAILS (REFERENCES) OF BOOKS AND PERIODICALS. IN THE CASE OF PERIODICAL ARTICLES, AN ABSTRACT MAY BE PROVIDED WHICH WILL SUMMARISE THE ARTICLE

- REQUESTS FOR LITERATURE SEARCHES MAY BE DIRECTED TO THE RESPECTIVE SUBJECT LIBRARIAN

\* THE NEXT STEP WOULD BE FOR THE RESEARCHER TO PRIORITISE ITEMS FROM THIS LIST OF REFERENCES AND THEN SUBMIT IT TO THE INTER-LIBRARY LOANS OFFICE (GROUND FLOOR)

## OCLC (ONLINE COMPUTER LIBRARY CENTRE, OHIO)

OCLC (FIRST SEARCH) UTILISES OVER 56 DATABASES AND COVERS THE FIELDS OF ARTS & HUMANITIES, BUSINESS & ECONOMICS, SOCIAL SCIENCES, GENERAL SCIENCE, LIFE SCIENCES, MEDICINE & HEALTH SCIENCES, ENGINEERING & TECHNOLOGY, EDUCATION, NEWS AND CURRENT EVENTS, GENERAL & REFERENCE, ETC

THE FOLLOWING ARE SOME OF THE DATABASES THAT CAN BE ACCESSED :

WORLDcat (BOOKS AND OTHER MATERIALS IN LIBRARIES WORLDWIDE)

ARTICLE 1st (INDEX OF ARTICLES FROM OVER 12 500 JOURNALS)

APPLIED SCIENCE INDEX, ART INDEX, BUSINESS PERIODICALS INDEX, MEDLINE, PSYCHFIRST, ECONLIT, ERIC, INDXLEGALPER, ETC.

## INTER-LIBRARY LOANS

\* BOOKS, JOURNAL ARTICLES, THESES NOT AVAILABLE AT THIS LIBRARY, COULD BE REQUESTED FROM OTHER INSTITUTIONS THROUGH A CO-OPERATIVE SCHEME OF INTER-LIBRARY LOANS

### \*\*KEY:

SUBJECT LIBRARIAN :  
SUBJECT LIBRARIAN :  
SUBJECT LIBRARIAN :  
SUBJECT LIBRARIAN :  
SERIALS LIBRARIAN :  
AUDIO-VISUAL LIBRARIAN :

ARTS:  
COMMERCE:  
ENGINEERING:  
SCIENCE:

(MS HOPE MASHILO, x5243)  
(MS VEENA JAYARAM, x5244)  
(MS LUCILLE WEBSTER, x5456)  
(MS SEGARANI NAIDOO, x5242)  
(MS SHIRLENE NEERPUTH, x5239)  
(MS RAMIKA PILLAY, x5245)



**Appendix E - Library orientation evaluation sheet**  
**LIBRARY ORIENTATION 1999**

Please take time to think about the library **orientation programme** presented today.  
We need **your** suggestions to improve our **programme**

**After the orientation I feel more confident to use the library.**

Yes ☐                      No ☐

Please explain-----

**The OPAC (library computer) demonstration was helpful.**

Yes ☐                      No ☐

Please explain-----

**The orientation guides were helpful.**

Yes ☐                      No ☐

Please explain-----

**The orientation video was informative.**

Yes ☐                      No ☐

Please explain-----

**Did you find the tour helpful.**

Yes ☐                      No ☐

Please explain-----

**The presentation by the Subject Librarian was helpful.**

Yes ☐                      No ☐

Please explain-----

