

**UNDERGRADUATE LIBRARY AND INFORMATION SKILLS
IN A DISTANCE LEARNING ENVIRONMENT**

by

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SUMMARY

Undergraduate library and information skills in a distance learning environment

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This twofold study is concerned with the status of library skills within the realm of undergraduate students' information handling skills. The main problem under investigation is whether students require library skills in order to be information literate.

In the first phase of the study, a conceptual analysis is done of information literacy and information skills, and a typology of information skills is drawn up. The skills in the typology range from lower level locating skills to higher level cognitive skills such as synthesizing and evaluating. Library skills (as taught in user education programmes) are identified and placed within the information skills typology, resulting in a model of library and information skills. This model indicates that library skills can be subsumed under generic information skills but that they fall only within the lower level of information handling skills. It therefore cannot be concluded that library skills are integral to information literacy. However, it is proposed that library skills represent a prototype of information gathering strategies, and if taught as such they would be more relevant to the lifelong learning aspect of information literacy.

The second phase of the project consists of three empirical studies, where the role of library skills at first year level in a distance learning institution is investigated, using the University of South Africa (Unisa) as an illustrative example. The grounded theory style of qualitative research is used to explore the attitudes of lecturers towards the need for library skills in students. Based on the findings, two grounded theories of library skills requirements are proposed: a theory of library skills requirements at Unisa, and a generalized theory of library skills requirements at a distance learning institution.

It is suggested that if librarians intend to be involved in information literacy teaching, they need to convince lecturers of the importance of independent information seeking for students, should promote the prototype of information gathering strategies, and form a partnership between themselves and lecturers with the intention of teaching information gathering strategies across the subject curriculum.

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LIST OF ABBREVIATIONS AND ACRONYMS

ACEIT	Advisory Committee for Education and Information Technology
ACRL	Association of College and Research Libraries
ALA	American Library Association
BI	Bibliographic instruction
BLR&DD	British Library Research and Development Department
CAI	Computer-aided/assisted instruction
CD-ROM	Compact disk - read only memory
CPVE	Certificate of Pre-Vocational Education
GCSE	General Certificate of Secondary Education
ICL	Information literacy and computer literacy
IIA	Information Industry Association
IT	Information technology
LIS	Library and Information Science
NCET	National Council for Educational Technology
NCLIS	National Commission on Libraries and Information Science
n.d.	No date
NEPI	National Education Policy Investigation
n.p.	No pagination
SABC	South African Broadcasting Corporation
SAILIS	South African Institute for Librarianship and Information Science
SILS	School of Information and Library Studies
SSB	Student Services Bureau
TVEI	Technical and Vocational Education Initiative
UELO	User Education and Library Orientation
Unisa	University of South Africa
USA	United States of America
WHCLIS	White House Conference on Libraries and Information Services

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CHAPTER 1

THE PROBLEM AND ITS CONTEXT

1.1 INTRODUCTION

This study is concerned with the place of library skills in the learning process. The central issue is the status of library skills within the realm of the general information handling skills which are required of students in tertiary institutions, and the joint roles of librarians and lecturing staff in this regard. Under particular investigation are, the library skills expected of first year undergraduate students at a distance learning university, using the University of South Africa (Unisa) as an illustrative example.

In this chapter, the need for information handling skills in today's society is outlined; at the same time concepts which are central to this aspect of the thesis are introduced. The problem under investigation is formulated against the background of several issues which contextualize it. The methodological approach to the research project is outlined, justification of the study is provided, and definitions are given of several terms and concepts which feature throughout the thesis. Finally, synopses of ensuing chapters are included.

1.1.1 Requirements of an information society

The era in which we live today is regarded as the post-industrial society (Bell 1973), information civilization (Masuda 1982), information age (Horton 1983), information-conscious society (Kawatra 1983), information millennium (Fitzsimmons 1987) or, most commonly, the information society (Naisbitt 1984). The primary characteristic of the

present epoch is the emphasis placed on the intensive use of, and dependence on, information.

In order to function effectively within today's society, a person needs to be information literate - that is, he requires a range of instrumental and cognitive skills which enable him to locate and utilize information. Such skills are termed information handling skills or, more simply, information skills. It would appear that information skills could incorporate library skills: those abilities which enable a person to make effective and efficient use of sources, services and facilities provided by libraries.

Information literacy is correlated with lifelong learning:

Ultimately, information literate people are those who have learned how to learn. They know how to learn because they know how knowledge is organized, how to find information, and how to use information in such a way that others can learn from them. They are people prepared for lifelong learning, because they can always find the information needed for any task or decision at hand (*ALA Presidential Committee ... 1989: 1*).

1.1.2 Role of universities

Universities need to prepare students for lifelong learning if graduates are to function successfully in an information society and be able to adapt to the continual changes which occur, especially in the workplace. In other words, universities need to ensure that their graduates have competent information handling skills and are thus information literate.

There are seventeen universities in South Africa. Of these, Unisa (with a student enrolment of 119 985 in 1992), today provides the most graduates for the marketplace. In 1991, 7 479 students graduated from Unisa with diplomas, Bachelor degrees, Honours degrees, Master's degrees or Doctorates; during the period 1967 to 1991, there were 94 063 graduates.

1.1.2.1 University of South Africa (Unisa)

The University of South Africa is an institution for tertiary education which, on the principle of equal opportunities for all, aims at providing society with academically and professionally educated men and women who can assist in meeting the needs and aspirations of the people of Southern Africa (Unisa [1990]: (n.p.)).

Unisa affords adult students (who qualify for university admission but for a variety of reasons cannot study at a residential university) the opportunity of acquiring an internationally recognized education by independent, off-campus study. As a distance learning institution, Unisa utilizes methods and modes of teaching which differ from those of residential universities. However, general educational objectives which are traditionally associated with the Western concept of a university are embodied by Unisa, which performs the three main functions of universities: formal teaching, that is, the transmission of factual information and the developing of intellectual skills in students; general education for public service, that is, developing the student into a competent, informed, balanced, reasoning, responsible citizen who is capable of independent judgement and service to the community; and research (Unisa 1984: 1-2).

In order to fulfil its mission statement as quoted above, Unisa has formulated several aims. Of relevance to the information literacy issue is its aim in guiding students in their intellectual development. This aim is pursued by:

- * Fostering students' critical disposition.
- * Expanding students' knowledge.
- * Improving students' proficiencies by developing the following abilities:

Conceptual ability: a comprehensive and thorough grasp of the theoretical foundations of a given discipline.

Professional ability: The ability to carry out the tasks associated with academic schooling with competence and insight.

Integrative ability: The ability to apply theory to practical situations.

Contextual ability: The ability to comprehend all the relevant contexts in which academically schooled people act and seek to resolve problems.

Ability to adapt: The ability to identify, evaluate, accommodate and initiate change in a given discipline.

The ability to communicate: The ability to convey ideas to fellow academics and non-specialists alike (Unisa [1990]: (n.p.)).

The intellectual skills and abilities outlined above are comparable to information skills, and are dependent on the successful utilization of information. Whether the necessary information handling skills are mastered by Unisa students depends on the curriculum of the University. The lecturers of Unisa are supported in their curriculum development and teaching activities by the University's library, which also provides services to students.

As a service organization, the Department of Library Services (referred to hereafter as the Unisa library, or merely the Library) also furthers the mission of Unisa, *inter alia* by promoting the effective use of library services and information resources. The aims of the Library include familiarizing students with its use and its resources. The Unisa library includes in its long-term objectives the development of students' abilities to use the Library independently for maximum utilization of its resources (Willemse 1991: 521-522).

Thus, Unisa aims to educate students by developing their information skills alongside their knowledge of particular subjects. The Library assists lecturers in this task, and also acknowledges its role in developing the students' library skills.

1.1.3 Information illiterate graduates?

The constantly changing and developing information society requires from graduates to be information conscious and to utilize information

resources. It becomes increasingly more important to be able to know where and how to find needed information than it is to know or even try to remember what the content is (Malan 1989: 81).

Malan believes that South African university graduates, especially first-time graduates, are not being prepared for lifelong learning because their curriculum does not afford a prominent place to the utilization of scientific information and information sources. He questions whether South African universities are producing graduates who are capable of managing the changes which an information society augurs, and claims that students are not being taught how to be academically autonomous:

Inligtingsbenutting is hulpbronbenutting, maar hoeveel studente word deesdae aktief geleer en gemotiveer om hierdie hulpbron selfstandig en sistematies te ontgin? (Malan 1989: 79).

A student who has mastered library skills has the ability to independently seek or gather information. If students are not taught library skills as part of their formal curriculum, it could be argued that they are being denied the opportunity to learn information gathering skills which could help them to become independent learners.

1.2 PROBLEM STATEMENT

The main assumption is that library skills are an integral part of information skills. By extension, if a university graduate is to be regarded as information literate and thus prepared for lifelong learning, he should possess library skills. Although some students might possess these skills on arrival at university, it cannot be assumed that all new students have the necessary library skills. Unless students are taught and assessed on library skills at university level, the inherent problem is that they could eventually graduate without these skills. Furthermore, if library skills are to be taught at universities, it could be argued that the process should begin in the first undergraduate

year since it is here that the foundation is laid for the high level of information skills which are necessary in the later years of tertiary study.

The central problem under investigation relates to the importance of library skills within the reference framework of information skills. The problem will be investigated through a conceptual analysis which constitutes the major component of the research project. In an auxiliary element of the project, the central problem will be placed in the context of a distance learning environment, using Unisa as an illustrative example in order to refine and develop the conceptual analysis.

1.2.1 Background to the problem

A discussion of six particular aspects is necessary for the contextualization of the problem under investigation: in the first place, the general underpreparedness of first year university students; secondly, the lack of a library ethos in many students; thirdly, the changing education dispensation in South Africa; fourthly, a consideration of whether university courses have library skills requirements; fifthly, new developments in librarianship in South Africa; and finally, the constraints existent in distance learning. These aspects will be considered from an international perspective. They will then be related to the South African situation and placed within the Unisa setting.

1.2.1.1 Underprepared first year university students

It is a universal phenomenon that many students entering colleges and universities are underprepared with regard to the information skills required for study at tertiary level. Shortcomings in the primary and secondary schooling systems are seen as the main cause.

In the United Kingdom, for example, a working group sponsored by the British Library and the Schools Council to investigate study skills and information skills of secondary school pupils, reported that the emphasis lay not on the process of learning, but on the product of learning: "from learning to learn to a short-circuited learning of the answers" (Marland 1981: 9). Craig (1982: 187) noted that, in the United Kingdom, pupils were able to achieve reasonable results without having to apply information skills.

The South African education system manifests a similar problem: the rote learning which appears to be accepted in primary and secondary schools does not encourage scholars to question, or to develop independent information seeking habits (Starfield 1990).

That many South African school leavers have a low level of information skills and are thus underprepared for tertiary studies, is evidenced by the necessity for remedial programmes (generally referred to as academic support programmes or bridging courses) at universities in this country (see, for example, Stanton 1987; Mehl 1988; Sass 1988; Hartman 1989; Hofmeyr & Spence 1989; Hunter 1989; De Villiers 1990; Starfield 1990; Hunter 1991; Moulder 1991; Scholtz 1991; Moletsane 1992).

The average age of Unisa undergraduate students is 30 (Unisa. Buro vir Bestuursinligting [1992]: 1); students are therefore generally more experienced and mature than at residential universities. However, in spite of this there is a gap between what the lecturers expect from students with regard to information skills, and the real situation. The problem in information skills competency is most noticeable at first year level where the majority of students have enrolled at Unisa with a disadvantaged educational background. In order that its teaching policy remains effective, the University undertakes

to help students with study and related problems by means of academic support programmes ... and

in this way making them readier for and receptive to teaching;

to offer where necessary transitional programmes to underprepared students, thereby increasing their university readiness and helping them to progress within the mainstream of the qualification structure of a university system (Unisa 1984: 3).

Examples of assistance given to underprepared students at Unisa include bridging courses, various services provided by the Student Services Bureau, and adaptations made within some first year courses.

(a) Bridging courses

Three bridging courses were introduced for the first time in 1981, namely Practical English: syllabus B (PEB100), Practical Afrikaans: syllabus B (PAB100) and Accounting 1A: syllabus B (ACB100). Each of these courses consisted of a remedial component and a component covering the same subject matter as the normal syllabus for that course.

Underprepared students were channelled into one of these courses. For example, in 1981 students who had received no credits during the preceding year of enrolment, were allowed to register for only one of the three bridging courses. If they passed the final examination in that course, they received credit for the course and were able to continue with normal mainstream courses (Crouse 1980). The academic success of these transitional students was assessed over the years (Engelbrecht 1982; Gous 1984; Van As 1985; Harley 1990). The bridging courses were not thought to be successful in overcoming the problems of the underprepared students. Recommendations were made in 1990 to phase out the three courses with effect from the beginning of 1992, and to investigate other methods of academic support for underprepared students (Harley 1990). At the end of 1992, the problem of underprepared students was still receiving attention by a committee which had been appointed to investigate

the matter. A new method of dealing with the problem is expected to be introduced during 1993/1994.

(b) The Student Services Bureau (SSB)

The SSB provides a variety of information and support activities for Unisa students. The main reason a student contacts the SSB is for guidance on choosing a career or subjects, or for advice on study techniques and basic planning for distance learning (Gous 1987: 31-32). In addition to providing counselling by telephone and letter, the SSB publishes advice on study skills in the student newspaper *Unisa news* (for example: Van der Merwe 1990; Barnard 1991), runs residential courses on reading skills, writing skills, study methods and memory techniques on the main Unisa campus in Pretoria (Barnard 1990; Mill 1992; Van der Merwe 1992), transmits radio programmes on various skills nationwide on "Radio Unisa" using South African Broadcasting Corporation (SABC) channels (Gous 1988 and 1990; Mill 1992), offers orientation courses at various centres throughout the country (Gous 1990), and provides counselling to three regional offices via the conference telephone (Adey & Barnard 1992). A booklet providing students with guidelines on effective study methods is also made available via the SSB (Van Schoor [1989]).

(c) Adaptations within specific courses

Some academic departments have taken their own initiative in order to assist underprepared students, and made adjustments within their first year courses, for example History (Harris & Southey 1989), Theory of Literature (Jackson 1990), Library and Information Science (Machet & Lor 1989; Behrens & Olën 1991), and Sociology (Christie 1991). There is cooperation between the SSB and some academic departments with regard to the upgrading of underprepared students' skills by means of adapting existing subject courses (Mill

1992: 35-36).

1.2.1.2 Lack of a library ethos

A large sector of South African society is unfamiliar with libraries and the role they play in education and recreation. This has resulted in the lack of a library ethos (and accompanying lack of library skills) in many communities. The lack of library skills in particular is most noticeable in university students coming from black schools which fell under the Department of Education and Training, and is most likely due to the absence or ineffectiveness of school media centres in these schools. Although the majority of the secondary schools in South Africa have accommodation for a media centre, this seldom exists as such and the most that pupils might have access to would be a "classroom library" or "box library" which consists of a minimum number of books which might or might not be relevant for the subjects taught. The problems related to school media centres in South Africa are discussed by Zaaiman, Roux and Rykheer (1988: 197-204) and Le Roux (1992).

The problematic library situation in the majority of South African schools is compounded by the lack of public libraries in most black communities. These two shortcomings combined result in students arriving at university without a perception of what a library is, and how they could make use of it. Suttie (1990: 101-102) identifies a number of problems specific to black students in university libraries in South Africa, noting that these handicaps are concentrated in the average Unisa student:

* Inadequate state funding for black education, which ultimately resulted in deficient library resources and lack of modern technology in many schools.

* The technocratic elitism of academic libraries, whose computerized information systems alienate and intimidate

those students who are unfamiliar with technological developments.

* The alien ambience of the Western-model university libraries and their librarians, both of which appear forbidding and baffling to many students. As a result these students remain unaware of the central role the library should have in the curriculum.

* The legacy of poor schooling which results in the university student having a limited general knowledge framework and an uncritical approach to learning. The deficient wider understanding hinders the student's ability to effectively utilize information which is potentially available in the course tutorial material and from the library.

* The use of English or Afrikaans as the medium of instruction in the university, and as the access language of the library collection, disadvantages black students whose mother tongue is neither of these languages.

It is common practice amongst many black scholars and students to use any nearby library which is available to them as a place to study. However, the desk, light, and quiet could be all that they expect from these libraries and they could remain ignorant of the information services the library is able to provide for them.

On the other hand, many students who have had the advantage of well-stocked and properly-staffed media centres in their schools and public libraries in their communities, do not always have the necessary library skills. Some schools in South Africa teach library use (often called "book education" or "media user guidance") to their pupils. It can be questioned whether the library skills are taught in such a way that the pupils are aware that these skills can be transferred to new learning situations, including other subjects, for everyday living requirements, or for post-matriculation studies.

Over the years, South African university libraries have increasingly started to present user education programmes (that is, programmes which teach library skills) for students, two examples being the University of Cape Town (Laburn 1984: 94) and the University of Natal in Pietermaritzburg (Bell 1990 and 1991; Vietzen 1990). As is the case with academic support programmes, the programmes teaching library skills follow a similar trend evident in many other countries (Mellon 1988: 137).

Shortcomings in library skills have needed to be addressed at Unisa as well, where students' poor schooling and lack of exposure to library services

has left gaps in their preparation for library use, such as a limited experience in alphabetisation, and a lack of familiarity with the concept of catalogues (Shillinglaw 1987: 190).

Thus, even the most basic library skills are lacking in the majority of first year students. Examples of how Unisa has approached this problem include:

(a) User education programmes

These programmes are offered to students by the Unisa library. The programmes utilize various methods and modes such as lectures, audio-visual materials, workbooks and radio broadcasts. (The user education programmes of the Library will be elucidated in chapter 6.)

(b) Practical English course

The Practical English course (PEN100) is a course at first year level which, in a section on referential reading in the study guide for the years 1991 to 1993, teaches first year students how to make use of the Library, and how to use a

dictionary and other reference works (Unisa. Department of English 1990: 145-160).

Neither the user education programmes nor the Practical English course are compulsory for Unisa students.

1.2.1.3 Changing education dispensation in South Africa

During the time the research for this project was undertaken (1989 to 1992), South Africa was undergoing a major political upheaval, with educational issues subject to change. Investigations into present and future educational policies were underway, with the library profession also taking part. Of relevance here is the National Education Policy Investigation (NEPI) which was commissioned by the National Education Co-ordinating Committee (a non-governmental umbrella body for several democratic organizations such as the South African Democratic Teachers' Union and the Congress of South African Students) (Maurice 1992). NEPI formed several research groups, including the Library and Information Services Research Group which is investigating policy options for a new library and information system for South Africa. Several librarianship organizations in South Africa are contributing to this research (Stadler 1992). Twelve research papers containing NEPI's suggestions for policy options are due to be published in book form at the end of 1992.

It is obvious that redistribution of education budgets will be aimed at redressing the imbalance which previously held between funding for white and black education (and, by extension, education library services). At this stage it is impossible to correctly forecast how a new educational dispensation will affect the academic quality and library use abilities of first year university students. However, certain conjectures will be made with regard to issues which have relevance to this study:

* The economic restraints which affect the South African economy will initially have an adverse affect on educational issues, in the sense that there will be insufficient funding available for primary and secondary schools. Funding is most likely to be allocated largely to teachers' salaries and essential teaching equipment: it is unlikely that the development of school media centres will enjoy priority in budgeting. A further conjecture in this regard is that school media centre specialists, who previously had either no direct teaching responsibilities or who combined media centre duties with teaching duties, will be retrenched or employed solely as teachers.

* With little or no growth in the role played by media centres in the teaching function in the majority of schools, the likelihood is that for the foreseeable future a large number of students will arrive at university with a lack of library skills.

It is therefore not foreseen that there will be an improvement in the library skills of new undergraduate students at South African universities, and at Unisa in particular, in the ensuing years.

1.2.1.4 Course requirements with regard to library skills

In referring to universities in general, Craig (1989: 168) reports that

lecturers complain that poor students do not do independent study, expecting all relevant facts to come from the lectures. It is not an unfamiliar experience to encounter students who have never used the library during under-graduate years, for example.

The question which needs to be asked here is: Are university students expected to use the library for independent study; that is, are they required to practise library skills for

the courses they take? Although university lecturers might expect students to have library skills and, although many university libraries have introduced measures to overcome the lack of library skills in students, it is paradoxical that university courses might not specifically require library skills of students. If a student is able to obtain examination admission - and then pass the examination - without demonstrating a mastery of library skills (for example, presenting for assessment an assignment or project dependent on library research), the student does not need library skills for the purposes of passing that course.

At some universities overseas, library skills are assessed: this is done in either non credit bearing or credit bearing courses, which can be elective or compulsory. Research has shown that for successful teaching of library skills there must be a partnership between librarians and lecturing staff. (These issues will be discussed in chapter 5.) At Unisa specifically, although the Library promotes user education programmes, there are no guidelines or policy statements with regard to the library skills requirements of students. Many courses do, however, direct students to use sources other than their prescribed material and this implies that students will be required to make use of library services.

The Study Collection and Branch Libraries Division of the Unisa library caters for undergraduate courses which require students to read recommended or additional sources to supplement the study guides (the Unisa equivalent of residential lectures) and prescribed books. The main Study Collection is located in the Library on the Unisa campus in Pretoria, with branch libraries at the Unisa regional offices in Cape Town, Durban and Pietersburg. In addition there are branches of the Study Collection at the University of Namibia Library in Windhoek and at the Municipal Library in East London. In Johannesburg there is a Study Centre, where a core collection of recommended books is available, and at the Funda Centre in Soweto a small collection of

books is also made available (Unisa. Department of Library Services 1992: 4). Multiple copies of books required in undergraduate courses are held by the Unisa libraries.

Students are able to request books by mail, which requires no library skills since all that is necessary is for a request card to be filled in and forwarded to the Library. Some students request books via the Beltel videotex system (Genot 1987), or record book requests onto a telephone answering machine connected to the main Study Collection. Neither of these methods requires any type of library skills.

Alternatively, students can visit one of the Unisa libraries to use the required books or have these issued to them. It is questionable whether this involves any library skills on the part of the student: since the books are arranged alphabetically by author on the shelves of the Study Collections, it is not necessary for the student to even consult a catalogue.

Not all undergraduate courses have recommended and/or additional reading requirements (Behrens 1990b). The possibility therefore exists that students are able to pass a course without locating, analyzing, evaluating, applying, and including in a bibliography, any information beyond that which is provided for them in their prescribed material.

A number of possibilities arise from the above. Some Unisa undergraduate courses may require library use, but this does not imply that library skills are a course requirement. The possibility exists that, although lecturers might expect library skills from their students, they do not incorporate the use of these skills in the course requirements. Lecturers might also assume that any library skills which they expect from their students, are (or should be) taught by the Unisa library. Finally, there is the possibility that many undergraduate courses require no library use whatsoever from the first undergraduate year through to the final year.

Taken to the extreme, this implies that students could obtain a degree where none of the full complement of courses for that degree called for the application of library skills.

1.2.1.5 New developments in librarianship in South Africa

Apart from the NEPI Library and Information Services Research Group mentioned under section 1.2.1.3, a second recent development in the field of librarianship in South Africa is also of significance here: the opening (to a wider range of students) of courses which were previously essentially librarianship courses.

Departments of Library and Information Science (LIS) at South African universities and technikons offer degrees and diplomas in the LIS field. A Working Committee appointed to investigate curriculum planning for such departments at South African universities recommended in 1988 that a course of study concentrating on the locating and processing ("vind en verwerking") of information be designed and presented for students in all subject disciplines, the course content covering specified information skills:

[W]etenskaplik verantwoordbare keuse van inligtingbronne, formulering van probleem- en doelstellings in wetenskaplike ondersoeke, kriteria vir bepaling van die mate van wetenskaplikheid en ander bewyse van kundigheid in die inhoud van inligtingbronne, ekonomiese gebruik van die bronne (insluitende die aanwending van ekonomiese leesmetodes), kriteria vir aanhaling van tekste en ekserpering, saamstel van bibliografieë (ge raadpleegde literatuur, ensomeer) en wetenskaplik verantwoordbare verslagskrywing (Meijer *et al* 1988: 50).

Departments of LIS at some South African universities have recently opened certain courses to a wider range of students (that is, not only to their "traditional" students who are reading for a degree or diploma in the LIS field). Two cases in point are the University of Pretoria and the

Potchefstroom University for Christian Higher Education, where Information Science can be taken as a three year major by students other than those studying for a Bachelor degree in the LIS field. Some departments at other universities are still intending to do likewise, for example Unisa's Department of Library and Information Science is planning the introduction of a new Information Science curriculum to be presented from 1994 with this intention in mind.

Since information literacy, information skills and library skills are librarianship issues, the provision of these new Information Science courses could have relevance for the future teaching of information handling skills to university students.

1.2.1.6 Distance learning constraints

By its very nature, there are constraints which affect any distance learning institution. The most important of these is that, unlike residential universities, the student body is not localized. In the case of Unisa, students are spread throughout southern Africa, with a small part of the student body resident in other African countries and countries overseas. Eighty eight percent of Unisa undergraduate students are resident in South Africa. A further eleven percent are resident in neighbouring countries (Bophuthatswana, Venda, Ciskei, Transkei, Namibia, Botswana, Lesotho, Swaziland and Zimbabwe) (Unisa. Buro vir Bestuursinligting [1992]: 16).

Any notion of having compulsory residential programmes or courses has to be carefully considered in a distance learning environment. At Unisa, the sheer volume of undergraduate students, and by extension the large numbers of under-prepared first year students, is an additional constraint in this regard. Two aspects are, however, of significance here with regard to library skills. First, as became evident in earlier sections, the Unisa library promotes the teaching of library skills for students. Second, in 1991 it was es-

estimated that 42% of Unisa students were within relatively easy reach (100 kilometres) of the main campus in Pretoria (Gous 1992a: 3), and it is likely that the majority of the remainder of the student body is within easy distance of Unisa libraries in other parts of the country.

1.2.2 Formulation of the problem

That library skills are regarded as an important component of information skills is evidenced in the fact that the two concepts are often used synonymously in the literature, as will be shown in later chapters. Although there appears to be a firm interrelationship between library skills and information skills, the researcher believes there is a strong possibility that university students can graduate without a knowledge of, or practising, library skills.

The intrinsic problem is that, if university students are not taught and evaluated on library skills in the formal curriculum, they could lack independent information gathering skills. There is thus the chance that graduates might not be completely information literate. The implication of this is that university graduates might not be prepared for lifelong learning, which is a requirement for successful functioning in society today.

If Unisa graduates are to meet the requirements in an information society, they need to be information literate, and have a command of the full range of information skills. In section 1.1.2.1 it was noted that Unisa aims to educate students by developing their information skills and that the Library assists lecturers in this task and also acknowledges its role in developing the students' library skills. The Chief Director of the Unisa library notes that Unisa students are lacking in library skills at both undergraduate and postgraduate levels, and for this reason the Library introduced user education programmes for students:

For many years the [Unisa] library has accepted that, given its role in a distance teaching university, its predominant responsibility toward students was the supply of recommended literature. With the increase in the number of students from environments where library services are either very poor or nonexistent, the library has been made increasingly aware of the fact that many of its students do not know how to use libraries or their resources ... Librarians from other libraries where Unisa students tried to obtain their recommended literature have also commented on the students' ignorance in the use of the catalog and other resources. More seriously still, complaints have been received from lecturers at other universities where Unisa graduates enrolled for postgraduate qualifications, that these students did not have the necessary library and information skills. The library has, therefore, started to give serious attention to this ... (Willemse 1991: 528).

If the Unisa library is promoting library skills, certain questions arise with regard to the role of library skills in the learning process at the University. Are the teaching departments in support of this movement? Do lecturers recognize the role of library skills within the reference framework of information skills? Do lecturers expect library skills of their students? If so, at what level of undergraduate study are such skills expected? Is there a partnership between librarians and lecturers when library skills are taught? Finally, if students at a distance learning institution like Unisa are not assessed on the entire range of information skills (including library skills) in their formal curriculum, can they be regarded as information literate upon graduation?

This project will attempt to answer these questions by analyzing the concepts of information literacy, information skills and library skills, and by considering the library skills requirements at first year level at Unisa.

1.2.2.1 Rationale for investigating first year level

The rationale for exploring library skills requirements at first year level specifically is as follows:

It is at first year level where students' lack of library skills first becomes evident. If this problem is not addressed at the entry level (where the subject courses prepare students for the higher level of information skills required at later levels), students pass on to second and final year - and could eventually graduate - with the same shortcomings, if the problem is not attended to within the formal curriculum.

Library skills requirements at first year level at Unisa are indicative of such requirements at later undergraduate levels as well. Unisa's methods and modes of undergraduate tuition, and its policies with regard to the provision of required library resources to undergraduate students, are the same at first, second and final year levels. If the library skills requirements of Unisa first year courses are established, this would provide an indication of how seriously the University takes the whole library skills issue.

1.2.2.2 Statement of the problem and subproblems

The following problem statement provides a guide to the nature of the research project, demarcates the areas to be investigated, and offers a preparatory description of the research topic (Swisher & McClure 1984: 45). This problem statement is then divided into subareas by the identification of a number of subproblems (Leedy 1989: 6; 54-58).

(a) Problem statement

Are library skills an essential component of the information skills that are needed by information literate graduates? If so, is the role of library skills recognized within the first year curriculum of a distance learning university?

(b) *Subproblems*

1. What does information literacy entail, and how do information skills relate to it?
2. What are library skills?
3. What is the relationship between library skills and information skills?
4. What library skills are expected of first year students?
5. What obstacles are there to teaching library skills as part of the formal curriculum of a distance learning institution?

As was emphasized in section 1.2, the conceptual analysis undertaken in this study forms the focal point of the research project. However, as is evident from the preceding sections, the stimulus for this study derived from the researcher's experience of the library skills situation at Unisa. In a subsidiary component of this project, the problem will therefore be investigated with special reference to Unisa, which will serve as an illustrative example for the library skills requirements at a distance learning university.

1.2.3 Justification of the study

In view of the aspects outlined in contextualizing the problem under section 1.2.1, and the problem statement and its accompanying subproblems, the anticipated benefits of the study are:

1. The relationship between information literacy, information skills and library skills will be clarified, and library skills will be placed within a reference framework of information skills.
2. A model of the skills necessary for information

literacy will be generated. This model could be utilized for curriculum development purposes.

3. The creation of a greater awareness of the importance of independent information seeking in the learning process could assist in reassessing the role of library skills in the undergraduate curriculum.

4. Attention will be drawn to the possibility of using library skills as a prototype of skills which can be applied in any information gathering situation.

5. A theory of library skills requirements for distance learning universities will be generated. A generalized theory of this nature could be useful in assisting further research into the library skills phenomenon in distance education.

6. A theory of library skills requirements at Unisa will be generated. This theory will indicate the role of library skills at first year level and, by extension, be indicative of library skills requirements at all undergraduate levels of the University.

7. The present role of library skills within the undergraduate curriculum at Unisa will be explored. Any existing contradictions or paradoxes evident in the University's policies on, or approaches to, library skills requirements will become evident.

8. From the points above, the ultimate benefit to Unisa could be that the importance of information handling skills (including independent information seeking) will be stressed in the formal undergraduate curriculum. Students would thus be given the opportunity to become information literate and lifelong learners.

9. The study should also provide impetus to the formal teaching of information literacy skills in a wider context,

for example at primary and secondary school level.

1.3 METHODOLOGICAL APPROACH TO THE RESEARCH PROJECT

A survey of the literature forms the foundation of the research project, and this is supplemented by a threefold empirical component.

The literature provides the data for a conceptual analysis of information literacy, information skills and library skills. The conceptual analyses form the basis of an investigation into the interrelationship between library skills and information literacy. The outcome of this section of the project is a model of library and information skills which provides a theoretical foundation for the inclusion of library skills in formal curricula.

For the empirical component of the project, Unisa is used as an illustrative example of a distance learning institution. First, the user education programmes of the Unisa library are investigated. Second, an analysis is done of the library skills requirements of Unisa first year courses. Third, interviews are held with Unisa lecturers. The empirical components of the project are referred to as empirical study A, empirical study B and empirical study C.

Empirical study A is a quasi-empirical historical investigation into the user education programmes provided to students by the Unisa library; the investigation is based mainly on internal documents of the Library. For empirical study B, all Unisa first year courses presented in 1990 are analyzed for their library skills requirements. A purposive sample of ten first year papers is then identified for more detailed analysis in the final empirical component. Empirical study C comprises interviews with the lecturers of the ten papers which make up the purposive sample, with a view to exploring their expectations of library skills in first year students, and their attitudes towards the teaching of these skills in

a distance learning environment.

The empirical component of the thesis follows both quantitative and qualitative research methodologies, with a quantitative approach used in the first two studies. The grounded theory style of qualitative research is followed in the analysis of the interviews in empirical study C. The software program *The ethnograph* is utilized to manage the data emanating from the interviews.

1.4 TERMINOLOGY

In order to avoid confusion concerning terms and concepts which are used throughout this thesis, the following definitions are provided here. Most of the terms and concepts are discussed in more detail later when they become relevant in ensuing chapters.

1.4.1 Information (handling) skills

Information skills are those abilities which enable a person to handle information effectively. They include the following: recognizing when a problem could be solved with relevant information and being motivated to solve it; identifying what information is needed for a solution; moulding a strategy to find the information and knowing where to find it; carrying through the search strategy to locate the information; selecting the required information; analyzing, interpreting and synthesizing it; organizing the synthesized information; utilizing it in order to solve the problem; assessing the effectiveness of the strategy in solving the problem; storing the synthesized information for future use; and communicating the solution of the problem to others if necessary.

1.4.2 Information literacy

Information literacy lies at the higher end of the literacy continuum, since it denotes a person's ability to function in an information-permeated society where the basic literacy skills (reading and writing) are insufficient to utilize the information for problem solving. Information literacy entails the application of higher order cognitive skills such as synthesizing and evaluating information which has been gathered through basic location skills. Information literacy thus refers to a person's ability to apply particular information handling skills in order to locate and utilize information from any resource efficiently and effectively.

1.4.3 Library skills

Library skills are the abilities which are required in order to make effective and efficient use of sources, services and facilities provided by libraries. The skills are dependent on a pre-knowledge of the library, for example how the library is organized as a bibliographic system. Library skills entail the ability to access the sources in a library, and include skills in using the catalogue and other bibliographic tools, physically locating the sources on the shelves, selecting the information from these sources, and making a note of the information together with a reference to the source.

1.4.4 User education

User education is a programme of library skills instruction to enable users to effectively and efficiently utilize the sources, services and facilities of a library. A programme could take many forms, such as orientation tours, lectures or workbooks, with instruction being at varying levels of sophistication.

1.4.5 First year course/paper

A first year course is a subject related course (for example Business Economics) taken at first year level. The concept is used with reference to academic subjects taken at Unisa, most of these being subjects which can be taken up to third year level as a major for a degree. A course could consist of one or more papers.

1.4.6 First year student

A first year student is taken as being enrolled for any first year course, the level of any other courses for which he is enrolled notwithstanding.

1.4.7 Undergraduate student

An undergraduate student is one who is studying towards a first degree or diploma (for example a BA degree), notwithstanding whether he already has tertiary qualifications.

1.4.8 Honours student/degree

An Honours student is a postgraduate student. An Honours degree is required in most subjects (for example Library and Information Science, English, History) before a student can register for a Master's degree. The Honours degree is thus an intermediate qualification between a Bachelor degree and Master's degree.

1.4.9 Prescribed, recommended and additional material

Prescribed material refers to those sources (such as study guides and books) which are essential for a Unisa course; a student purchases his own prescribed books. Recommended

material refers to sources which can be consulted by students for further information on the subject of a course; such sources are duplicated in sufficiently large numbers by the Unisa library which loans them to students on request. Additional material also provides further information for students, but the Unisa library does not undertake to ensure provision of such material to students.

1.4.10 Book of readings

A book of readings (also called a "reader") is a monograph composed of several articles, or chapters from books, by different authors on the same subject.

1.5 SYNOPSES OF CHAPTERS 2 TO 9

In chapter 2, the concept of information literacy is examined in the light of its application as an umbrella term for information skills and library skills. The origin in the United States of America of the concept information literacy is investigated, the progress of the concept through two decades is outlined, and its meaning today is explored in the context of an information and learning society. The various information handling skills required for information literacy are identified. The association of information literacy with lifelong learning is also considered.

In chapter 3 the information skills movement which originated in the United Kingdom is outlined. The origin of the concept of information skills is investigated against the background of educational reform initiatives and their subsequent reports, and the results of several major research projects in the field of user education and, later, information skills.

Chapter 4 elucidates taxonomies of information skills, noting their similarity to taxonomies of related skills

(such as problem solving skills). The influence of Bloom's taxonomy of educational objectives on contemporary learning theories, and its influence on the taxonomies of information skills, is also discussed. Five taxonomies of information skills are reviewed, and the relevance of learning theories to information skills taxonomies is noted. The information phenomenon which provides the framework within which information skills are practised is outlined. Finally, a typology of information skills which illustrates the range of information handling skills is drawn up, the intention being to later subsume library skills under generic information skills in this typology.

This is followed by a detailed analysis of library skills in chapter 5. The semantic problem with library skills terminology is highlighted, and a rationale is provided for teaching library skills at universities. Surveys investigating the attitudes of university lecturers to the teaching of library skills are outlined. Types of user education programmes and their methods and modes of teaching library skills are discussed. The distinct library skills themselves are identified from these programmes. Library skills are then placed within the information skills typology drawn up in chapter 4, thereby providing a model of library and information skills.

Chapter 6 introduces the supporting component of the thesis, namely the empirical studies on the place of library skills at Unisa. The first two empirical studies are covered in this chapter: empirical study A which investigates the user education programmes of the Unisa library, and empirical study B which establishes the extent to which first year courses at Unisa require library use. The research methodologies of empirical studies A and B are explained, and the findings of both studies are reported.

Empirical studies A and B are built on in chapter 7, where the methodology for selecting the purposive sample of lecturers for interviews as part of empirical study C is ex-

plained. The preparation for the interviews and of the interview guide, and the holding of the interviews, are elucidated. A rationale is provided for the qualitative approach chosen to analyze the interviews, and the analytic procedures which are followed in the grounded theory style of qualitative research are explained in detail. The methodology for using *The ethnograph* software program to manage the data for empirical study C is outlined. Chapter 7 provides the foundation for chapter 8, which is the full report of empirical study C. This report provides an analysis of the attitudes of Unisa lecturers towards library skills requirements of first year students. The chapter concludes by proposing two theories: a grounded theory of library skills nescience at Unisa, and a generalized theory of library skills teaching at a distance learning university.

The thesis concludes with chapter 9, where the findings of both the conceptual analyses and the three empirical studies are summarized and interpreted. Recommendations and suggestions for further research conclude the final chapter.

CHAPTER 2

THE CONCEPT OF INFORMATION LITERACY

2.1 INTRODUCTION

In this chapter a conceptual analysis is undertaken of "information literacy". This is done by exploring the origin of the concept, tracing its use and meaning through the past two decades, discovering what it means in the information society of today, and finally identifying the skills or abilities that information literacy entails.

2.1.1 Semantic problem

Information literacy has become a buzz-word today. It is used as a slogan and as technical jargon; contemporary history may even prove it to be a temporary catchword. As is often the problem with words which are faddish, their intrinsic meanings usually become obscured or trivialized through overuse. Such trivialization has already become evident in the concept "literacy".

Historically there was little doubt as to what the word meant (the ability to read and write), but since the illiteracy phenomenon became a universal discussion point during the last decade, the meaning of literacy has become less certain. "Literacy" is loosely tagged on to several other words today. The resulting concepts sometimes have little to do with literacy in the traditional sense of the word. For example: the term "AIDS literacy" is used to describe a school education programme on AIDS (R5-m for children's ... 1991); and "computer literacy" is used to refer to a person's ability to work a computer - McCrank (1992: 489) comments that one does not necessarily do so by

means of reading and writing.

Like these other "literacies", information literacy is an ~~abstract~~ concept. As a metaphor, it is a neatly packaged - and imaginative descriptive phrase which is not literally applicable or easily interpretable, implying something more qualitative and diffuse than is evident in the historical meanings of both literacy and information. Symbolically it appears to represent the ability to use information, or possibly the possession of a knowledge of information.

There is also a semantic problem involved when one considers the concepts of information literacy, information skills, and library skills. The three concepts are distinctly related and often used synonymously or interchangeably in the literature, although there are clearly differences in content and connotations of meaning.

Although the concept of information literacy has been used regularly in the literature in the field of Library and Information Science (LIS) for the past fifteen years at least, it has only recently been incorporated as an indexing descriptor in bibliographic control tools for the discipline. One of the two main bibliographies for the discipline - *Library and information science abstracts* - used the concept as an indexing descriptor for the first time in September 1991. *Library literature*, the other main bibliography for the LIS discipline, adopted the concept as an indexing descriptor for the first time in its printed format in June 1992; the CD-ROM format had not yet adopted it by this date. Before including the concept as an indexing term, *Library literature* did not even have a cross-reference to a related, broader or narrower term for information literacy. Bjørner (1991: 160) notes that ERIC used the concept for the first time in the November 1990 *Current index to journals in education*. Thus, in spite of information literacy being a topical issue of the 1980's and 1990's, the main bibliographies in the LIS field have been very slow in recognizing the concept.

Since it appears from the literature reviewed for this project that information literacy is a wider-encompassing concept than information skills or library skills, its conceptual analysis will provide a framework within which to consider the other two concepts. Once the umbrella concept of information literacy has been investigated, this will be followed by investigations of the other two concepts in later chapters.

2.1.1.1 Countries of origin

Apart from the hierarchical significance of the concepts information literacy, information skills, and library skills, it is also possible to separate two of them purely by means of country of origin. The information literacy movement originated in the United States of America (USA), and the literature emanating from this country shows a preference for the concept information literacy. The information skills movement originated in the United Kingdom, where the initial research into the phenomenon was undertaken, and the British literature thus shows preference for the concept information skills. Although the two concepts originated in different countries, their reasons for becoming prominent are similar: their emergence can be traced back to a need for educational reform in their respective countries.

That the two concepts are synonymous is not in doubt. What is interesting, however, is that in spite of the duality of origin and equivalence in connotations of information literacy and information skills the direct link between the two is seldom made obvious in the literature. The American literature on information literacy and the British literature on information skills seldom indicate their connection with each other.

As information literacy is of American origin, most of the literature used in this chapter is published in the USA. The

converse will not be found in chapter three, however, when the origination in Britain of the information skills movement is investigated, since information skills is a concept which has been in international use for the past two decades. The approach taken here in separating the concepts of information literacy and information skills for individual analysis is followed merely to facilitate the literature study of information handling skills.

2.1.2 Information society

The information society was briefly introduced in chapter 1. Since the information society provides part of the framework for this thesis, in the sense that it is the *raison d'être* for the need for information handling skills in students today, a more detailed outline of the characteristics of an information society is necessary before proceeding.

As mentioned in section 1.1.1, today's technologically advanced society is referred to as a post-industrial society, the information civilization, the information age, an information-conscious society, the information millennium, or the information society (the most common description). The characteristics of an information society have been outlined in several works which have become virtual classics during the last two decades, for example *Future shock* (Toffler 1970), *The coming of post-industrial society* (Bell 1973), *The third wave* (Toffler 1980), *Megatrends* (Naisbitt 1984), *Megatrends 2000* (Naisbitt & Aburdene 1988), and *Powershift* (Toffler 1990).

In an information society, scientific problem-solving is used intensively and extensively, and there is thus a strong dependence on reliable and accurate information. Information technology (IT) heavily influences the employment market of such a society. Consequently, an information society has a well-developed infrastructure for the production, distribution, retrieval and use of information. The society is de-

pendent not only on information, but also on IT for handling this information (Zaaiman 1985; Martin 1988; Shillinglaw 1988; Behrens 1991c).

Garfield (1979) suggested that, in an information society, the fast and convenient delivery of information is accepted as the ordinary state of affairs, but that an "information-conscious society" precedes an information society. As people become more information literate, make greater demands for information services, and eventually have fast and easy access to required information, the information-conscious society becomes an information society.

Shillinglaw (1988: 16) believes that, although South Africa possesses many of the features of an information society, the society as a whole cannot yet be regarded as an information society. This is due to the country's dual economy which consists of a highly capitalized and financially sophisticated industrial and agricultural sector and an affluent, literate, largely white, population on the one side, and a less affluent, developing subsistence sector, and less educated and literate groups, on the other.

However, if one considers the society within which university students in South Africa work, it must be assumed that they operate within an information society for the purposes of their studies. Although Unisa students, for example, may live within a developing sector of the economy - which might or might not yet be an information conscious sector - their studies take place within an information society. They are therefore required to be "literate" within this particular society, and need to be able to handle information for their studies. As university students, their studies require of them to be information literate:

Students are expected to be able to understand information, think critically, solve problems, integrate and systematise information, understand and interpret relationships, utilise information in an original and creative way, organise their thoughts and apply their knowledge in a practical

though original way. Lecturers use assignments and examinations to establish whether students have acquired skills in these areas (Van der Merwe 1990: 11).

2.2 EDUCATIONAL REFORM IN THE USA

In order to investigate the origin of the concept of information literacy, the framework within which information literacy came to prominence needs to be outlined. Studies which investigated the problem of the declining level of education in the USA gave birth to the information literacy movement. Many of these investigations emphasized the need for students to learn lifelong skills to enable them to adjust in a constantly changing society, and one dependent on information.

Concerned with the declining level of education, the United States Department of Education undertook a study into the necessity of future reform in the educational system. The resulting report, *A nation at risk* (USA. National Commission ... 1983), stressed that the educational process needed to produce persons who would be able to function effectively in an information society. Such persons would need lifelong skills which would enable them to adjust as society changed. A year later, the Department of Education released a second report (USA. Department of Education 1984b) which listed the activities emanating from the first report.

A nation at risk urged the creation of a "learning society", and became the stimulus for the information literacy movement in the USA. The stimulus was not due to the fact that the report recognized that libraries played an important role in a learning society. In fact, the stimulus was caused by the fact that *A nation at risk* completely ignored the role that libraries play in the learning process. The report failed to mention libraries at all, indicating that the education establishment did not consider libraries as important in educational and social change.

A major debate on the contribution of libraries arose in the librarianship arena in the USA. The American Library Association (ALA) formed a Task Force on Excellence in Education in order to voice concern and redress the harm. This concern was instrumental in the Department of Education forming an advisory board to help the ALA in a project called "Libraries and a learning society" (Martell & Ware 1988: 73). The result of this project was a report which outlined the response of public, school and academic librarians and contained suggestions about the role that libraries could play in creating a learning society (USA. Department of Education 1984a). The full text of the five papers upon which this report was based was published by the ALA in 1984 (ALA 1984). The ALA Task Force produced its own report (ALA. Task ... 1984) which outlined what librarians saw as the four realities behind any educational reform:

1. the learning process begins before schooling starts
2. good schools require good media centres
3. people in a learning society need libraries throughout their lives
4. state support of libraries is an investment in people and in communities.

An enormous body of primary and secondary literature appeared in response to *A nation at risk*. A bibliography compiled five years after the publication of the report lists over 200 items, including research reports, essays, federal and state reform proposals, summaries, reviews of original reform reports, and reports on programmes that had been introduced (Gratch 1989). Smith (1989) examined a number of post-1984 reports on the quality of higher education in the USA. He found that, whereas most expressed concern at the falling level of education, and some did mention that library collections and facilities deserved increased financial support, they seldom saw library services as contributing to academic excellence.

It was not until the *College* report (Boyer 1987) by the prestigious Carnegie Foundation appeared that librarians found substantial support (from outside their profession) for their belief that they had an important role to play in educational reform. In the report, Boyer made a strong call for libraries to become a central learning resource. He reported a disuse and misuse of college and university libraries in the USA; he found that one out of every four undergraduates spent no time in the library during a normal week, and that 65% of the students spent four hours or less in the library each week (Boyer 1987: 160). Boyer believed that the institutions of higher education were aimless and lacked a convincing sense of what they were, or what they should be doing. He noted the gap in existence between the classroom and the library, and questioned whether the library was seen as a place where students could go to learn:

Is the library more than a study hall? Are students encouraged to spend at least as much time with library resources as they spend in classes? Do students, in their use of the library, seek out original sources and contemporary writings? Does the college ensure that a minimum of 5 percent of the total operating budget is provided for library support? And does the library's acquisition policy resist domination by narrow scholarly interests, serving also undergraduate education? Are those who direct the library also considered teachers? (Boyer 1987: 292).

The Carnegie Foundation report held that "the quality of a college is measured by the resources for learning on the campus and the extent to which students become independent, self-directed learners" (Prologue ... 1986), thereby providing academic libraries with the ammunition they needed to prove their worth in educational reform.

A higher education conference - "Libraries and the search for academic excellence" - was held at Columbia University in 1987 (see section 2.3.2). A paper delivered by Boyer linked it with the Carnegie Foundation report. Consensus at the conference that better undergraduate education depended

on better integration of libraries in the learning process set academic libraries on the road to finding their niche in the educational reform process. This niche became the information literacy movement, and libraries started to pay attention to the connection between user education and the lifelong learning requirement suggested in the educational reform reports (see section 2.3.2).

At this juncture, it should be mentioned that libraries had not previously been unaware of their role in the learning process. Earlier investigations had been undertaken into the link between students' academic success and library use. The work during the 1960's and 1970's of Knapp (1961; 1966) and Breivik (1974; 1977), are cases in point. For example, the latter makes reference to the need for "information collection skills" or "information handling skills" in university students, and also to the need for lifelong learning skills and for teaching these skills across the curriculum.

2.2.1 Lifelong learning

The meaning of lifelong learning needs to be outlined, and briefly considered in relation to university students in South Africa in general and at a distance learning institution in particular.

A nation at risk urged the creation of a "learning society". A learning society is one where individuals possess life skills: those which will enable them for lifelong learning, and which enable them to continue on their own with the learning process once they are out of the formal education system. Life skills enable one to adjust as society changes, and to cope with the vast amount of information which is part of day-to-day living. Hounsell and Martin (1983: 74), for example, describe life skills as functional competencies which can be utilized in managing life and in making decisions. And Liesener (1985: 11) recognizes that higher order cognitive skills need to be developed in those preparing for

a learning society:

For this to occur, the concentration cannot be restricted only to basic skills but must focus on higher order intellectual skills, for example: analytical, evaluative, inferential, interpretive and problem solving skills which are necessary to achieve at the levels of sophistication required in the present and future societies.

Liesener proposes that these skills can be developed only if they are taught in an environment which requires that they be repeatedly applied and tested. He believes it is the cumulative effect of the higher level intellectual and problem solving skills which leads to the development of a self-directed learner, one who is capable of, and motivated for, lifelong learning.

Resource based learning is a concept which is usually used in conjunction with lifelong learning and information handling skills. Resource based learning provides a learning environment which enables students to work with a range of resources, allowing them to have greater flexibility in their learning, to practise using information skills, and to become more independent and responsible for their own learning (Dubber 1989: 111). Breivik (1989a: 2) describes the range of resources as being "a wide range of real world resources instead of ... so much dependency on lectures and textbooks". Heeks (1989: 12) notes that resource based learning emphasizes the student's direct confrontation with the sources of information as opposed to receiving these through the mediation of the lecturer.

Malan (1989) expresses doubt that the South African university system is providing graduates who are independent learners. He argues that the traditional lecturer-centred mode of teaching does not result in academically autonomous graduates, but that a change towards a student-centred mode of learning (where students learn to become independent users of information) will ensure that graduates are true scholars, and capable of self-paced continuous education.

In considering libraries in distance education and their role in supporting a self-directed learning process, Howard (1985) comments that the characteristics of distance education combine to constrain the provision of information resources to students. She notes that, since most libraries in distance education institutions are less central than in residential universities, they are restricted in offering opportunities for independent learning, with the result that distance education has not been successful in promoting the development of independent learning skills.

Cleaver (1987) investigated the changes which IT brought about in society. He observes that lifelong learning is a necessity for employment, and proposes that skills which have been identified as necessary for lifelong learning should be reviewed in the light of the latest technology, to ensure that the skills will be adequate for future needs. If we relate this to university graduates, it implies that familiarity with the latest IT should be included in any typologies of lifelong skills.

It becomes apparent that lifelong learning implies that skills are needed which provide the ability to handle information in all forms. Lifelong learning and information literacy appear to be interlinked.

From the foregoing it can be assumed that, although the notion of lifelong learning would seem to originate from the USA, it does have relevance to university studies in South Africa. Furthermore, it seems that the constraints inherent in distance learning institutions like Unisa could be to the detriment of students, in that they are at a disadvantage with respect to developing lifelong learning skills. These aspects consequently merit attention in this thesis.

With the background provided by the discussion on the aspects of an information society, educational reform in the USA and the emphasis placed on lifelong learning, the origin

of the concept of information literacy can be investigated with a view to delineating its scope, discovering how it became a major issue in librarianship, and arriving at a working definition.

2.3 INFORMATION LITERACY: DEFINITIONS AND SCOPE

Since the introduction in 1974 of the concept of information literacy, many definitions of the term have been offered. The leading definitions and delineations will be analyzed in the sections which follow, with the intention of

- * exploring chronological extensions in the definitions
- * highlighting information skills which are incorporated or implied in the definitions
- * producing a working definition of information literacy for the purposes of this investigation.

2.3.1 1970's

The National Commission on Libraries and Information Science (NCLIS), an independent and permanent agency within the executive branch of the USA government, was established by Congress in 1970. NCLIS is entrusted with developing or recommending comprehensive national plans for the provision of library and information services for the citizens of the USA (Stevens 1976: 64-66). In a proposal submitted to NCLIS in 1974, the president of the Information Industry Association (IIA) in the USA suggested that the goal of the programme should be to achieve information literacy in the country within the next decade (Zurkowski 1974).

In the proposal, Zurkowski described the information service environment which was indicative of the framework within which people who were searching for information operated in the USA. He described several information products and services provided by the private sector (non-government, non-

library-based business firms), including information banks, information bank vendors, publishers, information by-products, and information evaluation activities. The traditional relation between these information activities and libraries was then outlined. Zurkowski considered how the traditional roles of libraries and private sector information activities were in a state of transition. He also suggested policy questions which needed to be resolved so that this environment could be maximized in order to strive for an information literate nation.

Zurkowski was the first to use the concept of information literacy, describing it as follows:

People trained in the application of information resources to their work can be called information literates. They have learned techniques and skills for utilizing the wide range of information tools as well as primary sources in molding information-solutions to their problems (Zurkowski 1974: 6).

In this definition Zurkowski suggested that

- * information resources are applied in a work situation
- * techniques and skills are needed for using
 - information tools
 - primary sources
- * information is used in problem solving.

The concept of information literacy appeared again in 1976, in a paper presented at the Texas A & M University library's symposium which considered the future of organizing knowledge:

To be information literate requires a new set of skills. These include how to locate and use information needed for problem-solving and decision-making efficiently and effectively (Burchinal 1976: 11).

Burchinal's definition links information literacy with

- * skills which include locating and using information
- * the use of information for problem solving and decision making
- * efficient and effective information location and utilization.

In the same year as Burchinal's definition appeared, a different meaning of information literacy was offered from outside the librarianship field. Hamelink, a consultant for mass communication research, used information literacy to refer to a need for the public to be liberated from the oppressive effects of institutionalized public media whose structures were characteristically controlled and restrained, and which provided "pre-digested explanations" on events in the world. His point was that people needed to be given the chance to make their own decisions, within their own contexts, of news events. Hamelink made suggestions for alternative news channels or information networks which were independent from political and economic interest. He notes:

The most essential contribution to alternatives which could counteract the dominant channels of public communication would be learning an alternative use of information (Hamelink 1976: 122).

Hamelink saw this alternative use of information as related to information literacy, which he sees as the ability to obtain a wholistic, individual and independent perspective on news events. Although Hamelink's approach, related as it was to interpreting news events, was not to be followed up in the later meanings of information literacy, it does obliquely relate to another definition of information literacy which was also provided in 1976. Owens, in contemplating the future of libraries and librarians, suggested a connection between active citizenship and information literacy:

Beyond information literacy for greater work ef-

fectiveness and efficiency, information literacy is needed to guarantee the survival of democratic institutions. All men are created equal but voters with information resources are in a position to make more intelligent decisions than citizens who are information illiterates. The application of information resources to the process of decision-making to fulfill civic responsibilities is a vital necessity (Owens 1976: 27).

In 1979 the IIA presented a definition of information literacy which did not include the confining specification of information being used in the workplace, as was the case with Zurkowski:

The IIA defines an "information literate" as a person who knows the techniques and skills for using information tools in molding solutions to problems (Garfield 1979: 210).

The same year, in an article on the future of the librarianship profession, Taylor introduced the concept of information literacy, noting that

an approximate definition of [information literacy] would include the following elements:

- that solutions to many (not all) problems can be aided by the acquisition of appropriate facts and information;
- that knowledge of the variety of information resources available (who and where) is a requisite of this literacy;
- that the informing process, which is continual, is as important as the spot information process, which is occasional; and
- that there are strategies (when and how) of information acquisition (Taylor 1979: 1875).

Taylor links the library profession with information literacy, and notes that the concept suggests

- * many (but not all) problems could be solved through the use of information
- * a knowledge of information resources (both people and organizations) is necessary
- * there are strategies for the acquisition of information.

2.3.1.1 Conclusion

In analyzing the definitions proposed during the 1970's, one can infer that information was seen as essential in society, and that information handling was becoming more complicated, owing to the perceived exponential growth in the amount of information available. Burchinal believed that a new set of skills was required, and that the location and utilization of information had to be efficient and effective. Most definitions stress the use or application of the information once it has been located, as well as its use for problem solving. The use not only of information, but also of the information tools which provide access, is mentioned by Zurkowski and the IIA. Many of the definitions arose in situations where the future role of libraries and librarians was under deliberation, indicating a connection between the librarianship profession and information literacy and also possibly a change in direction of attitudes towards information provision.

The definitions of this period highlight a number of requirements for information literacy, but do not reach the point where they identify the actual skills which are required for information handling. The suggestion by Owens that information literacy is relevant for active citizenship in a democracy is an issue which will recur in the following two decades, as will be seen below.

2.3.2 1980's

The concept of information literacy emanated from the USA and remained essentially an American term during the 1970's and the start of the 1980's - the time during which the information skills movement began in the United Kingdom and started gaining ground worldwide, as will be discussed in chapter 3.

This was also the time that new information technologies began to permeate society. In 1982 the IIA produced a four-volume survey of the information infrastructure of the USA (Horton & Willard 1982). The new technologies of the decade had come to be recognised as an important feature of information literacy; the survey referred to information literacy as a

gap which ... divides the information sophisticate who knows how and when to use the technology and does so easily and efficiently from the information naive who cannot use the technologies and hence has limited access to knowledge resources (cited in Demo 1986: 6).

In the same year, *Time* magazine chose the computer as Machine of the Year. Inspired by the feature, Horton considered the potential role that computers had as a resource in an information age. He referred to *Time's* consciousness-raising of the computer's problem solving capabilities as "computer literacy":

Computer literacy has to do with increasing our understanding of what the machine can and cannot do. There are two major components of computer literacy: hardware and software (Horton 1983: 14).

He went on to explain, however, that information literacy extended beyond computer literacy. In spite of Horton's simplistic explanation of computer literacy, his ensuing definition of information literacy is worth noting. The definition signals the transition to the 1980's, bringing us into the realm of computer-aided information manipulation:

Information literacy, then, as opposed to computer literacy, means raising the level of awareness of individuals and enterprises to the knowledge explosion, and how machine-aided handling systems can help to identify, access, and obtain data, documents and literature needed for problem-solving and decision-making (Horton 1983: 16).

The computer-aided tools and resources which Horton lists provide an indication of how the application of computers to

the manipulation of information was gaining ground in the USA by the beginning of the 1980's: online databases, telecommunications services, electronic mail, abstracting and indexing services, custom searches, government and foreign information resources, alerting services, data analysis services, and library networks.

Demo (1986) followed a similar line of thought in 1986 by considering the technological innovations which were available to process, store, retrieve and transmit vast amounts of information. He listed examples of new technologies such as microcomputers, cable TV, electronic publishing, fibre optics, satellite communications, videotext, online database searching, high-density CD-ROM storage and robotics. His point was that, in order to master these, a new intellectual skill was needed. This new skill he regarded as information literacy.

Although Demo does not suggest a working definition of information literacy, he points out that only people who possessed the necessary skills would be able to benefit fully from the information age.

It is apparent that by the middle of the 1980's the advancing IT had begun to affect the requirements for information literacy. Demo believes that, along with traditional literacy skills, information literacy forms the common prerequisite for lifelong learning. He also observes that the meaning of information literacy could be explained from different perspectives, depending on whether it is librarians, educators or communication experts who define the term. He suggests that, of all the existing definitions, the one emanating from the field of library user education represents one of the most detailed endeavours to define information literacy in a functionally relevant way (Demo 1986: 13).

The definition had been proposed the year before, and remains one of the most detailed expositions to date. The

definition can also be seen as an important milestone in the information literacy movement, since it marks the point at which information literacy and library user education appear to meld, and information literacy becomes a dominant issue in librarianship.

The 1985 working definition was drawn up by Martin Tessmer for the purposes of the Auraria Library at the Denver campus of the University of Colorado, which also serves the Community College of Denver and the Metropolitan State College. The library was investigating how its user education programme could evolve to ensure the information literacy of its 30 000 students who ranged from eighteen-year-olds to mature adults (Breivik 1985: 723):

General definition: Information literacy is the ability to effectively access and evaluate information for a given need.

Characteristics of information literacy:

- an integrated set of skills and knowledge
 - skills (research strategy, evaluation)
 - knowledge of tools and resources
- developed through acquisition of attitudes
 - persistence
 - attention to detail
 - caution in accepting printed word and single sources
- time and labor intensive
- need-driven (a problem-solving activity)
- distinct but relevant to literacy and computer literacy.

Information literacy is not:

- (only) knowledge of resources
- library dependent (as sole source)
- information finding (also understanding and evaluating).

A number of important aspects of this definition can be highlighted:

- * An integrated set of skills is included as one of the characteristics of information literacy. These skills are identified as research strategy and evaluation.
- * Information literacy extends beyond mere locating of

information to include understanding and evaluating the information.

- * The library is not the only source of information.
- * Information literacy requires particular attitudes, such as the awareness of a need for information and the accurate application of the information.

Coming as they do from the user education field, where the general accent was traditionally only on locating information in a library, the points indicate the broader perspective that user education would take in the future. The definition suggests the wide parameters of possible information resources, and implies that information seeking is not confined to locating information in libraries.

At about this time, the importance of information literacy was also addressed in South Africa. In 1985 the National Advisory Council on Libraries and Information Science held a conference on the role of information in society, where information literacy ("inligtinggeletterdheid") was defined as:

... die bewuste kennis van 'n individu van sy eie inligtingbehoefte en sy aktiewe optrede om daardie inligtingbehoefte te bevredig. Vandaar dat inligtinggeletterdheid bestaan uit kennis van benodigde inligting, kennis van die plek waarin inligting verkry kan word; vaardighede om dit te bekom (wat insluit o.a. rekenaargeletterdheid); kennis van die wyse waarop dit aangewend kan word om die gesindheid, die gedrag en die vaardighede van 'n individu te verander; en die wil om die inligting te bekom en te gebruik (Garbers 1985: 197).

Garbers' definition is interesting in that it highlights attitudes which accompany information literacy: the individual's awareness of information needs, his willingness to locate and use information, and his awareness that information can be beneficial to him.

The place of information literacy within the literacy spectrum of the information society was touched on by Kuhlthau (1987b: 2) in 1987:

What does it mean to be literate in an information society? Information literacy is closely tied to functional literacy. It involves the ability to read and use information essential for everyday life. It also involves recognizing an information need and seeking information to make informed decisions. Information literacy requires the abilities to manage complex masses of information generated by computers and mass media, and to learn throughout life as technical and social changes demand new skills and knowledge.

Olsen and Coons (1989: 8) also consider information literacy within the wider literacy spectrum:

We define information literacy as understanding the role and power of information, having the ability to locate it, retrieve it, and use it in decision making, and having the ability to generate and manipulate it using electronic processes. In short, information literacy is a necessary expansion of the traditional notion of literacy, a response to the revolution in which we are living.

By the second half of the decade, university librarians were reviewing their user education programmes with a view to the future (Mellon 1987). A paradigm shift had started as they reassessed their goals: "... information literacy instead of library literacy" (Euster 1987: 57). By the end of the decade, instruction in library skills was considered to be "too small a concept for the needs of education in an information society" (Breivik 1989a: 1), and user education programmes were being replaced by those aiming to achieve information literacy (Mensching & Mensching 1989). Courses teaching information literacy were introduced at universities in the USA. For example, the Mann Library at Cornell University began an information literacy programme in 1986, aimed at students in the sophomore through to senior years (Olsen & Coons 1989).

As outlined under section 2.2, at this stage of the 1980's

libraries in the USA were paying particular attention to their role in the learning process, as a result of several reports on the necessity for educational reform in the country. The adoption of the information literacy goal was the library profession's response to having its role essentially ignored or overlooked in the educational reform process. Librarians now began paying attention to the connection between user education, information literacy and lifelong learning.

In 1987, a national symposium on "Libraries and the Search for Academic Excellence" was organized jointly by Columbia University and the University of Colorado, to consider the role of academic libraries in educational reform. Those attending included university lecturers and administrators, library educators, and representatives from government, business and educational associations. In reporting on the symposium, Breivik (1987a) gives an indication of the issues of the time and the direction in which academic libraries were heading. She notes that there was consensus at the symposium that, in order to improve undergraduate education, it would become vital for libraries to integrate fully with the learning process. This was an aspect which the *College* report had highlighted, complementing several of the educational reform reports such as *A nation at risk* which had suggested that students should be prepared for lifelong learning. Breivik (1987a: 46-47) explains:

To accomplish this [lifelong learning], students need to become "information literate", whereby they:

- * Understand processes for acquiring information, including systems for information identification and delivery.

- * Can evaluate the effectiveness of various information channels, including libraries, for different kinds of needs.

- * Master basic skills in acquiring and storing their own information, e.g. database skills, spreadsheet and word processing skills, and book, journal, and report literature.

- * Are articulate, responsible citizens in considering public policy issues relating to information, e.g. copyright, privacy, privatization of government information, and issues yet to emerge.

Further thoughts at this 1987 conference were that, for students to become information literate, information handling skills (incorporating new technology applications) should be mastered at undergraduate level, and taught within existing academic courses rather than in separate user education programmes.

The trend towards teaching students how to think critically about using information in preparation for lifelong learning was not only an issue in academic libraries. School media centres in the USA were also in the process of re-evaluating their role in the learning process. In an issue of *School library media quarterly* devoted to the role of the school media centre in educating students to think, Kuhlthau (1987c: 23) says:

Essential to being literate in an information society is the ability to locate, comprehend, and apply information. These basic abilities involve thinking critically about information and about the ideas encountered in literature. What role does the library media program play in developing these skills? What are we presently doing in library skills instruction and where are we headed in the future?

Similarly, schools in the USA were approaching the problem of teaching information literacy by integrating the library user education programme into the existing school curriculum (Breivik 1987a: 23).

Thus, as the awareness of the importance of information literacy grew in momentum in the late 1980's, alongside it was the conviction that the necessary information skills should be taught by integrating them into existing curricula. (The information skills projects discussed in chapter 3 have relevance here.) Information literacy had become a general educational issue, with librarians as library skills teachers playing a leading role.

By the end of the decade, the role of library skills in

teaching critical thinking was being explored, and user education programmes were expanding to encompass the wider implications of teaching information literacy:

When applied to library use, information literacy involves going well beyond location skills and correct answer responses, into educating users in abilities which build insight and promote the development of strategies which help structure successful approaches to solving information needs (Lukenbill 1989: 168).

Not all approaches to information literacy were library oriented in the 1980's. In the Netherlands, the Advisory Committee for Education and Information Technology (ACEIT), which was formed in 1981, recommended in its first report in 1982 that a new subject ("Learning about information technology") be introduced into general secondary education. The National Institute for Curriculum Development started a national project in 1983, aimed at introducing all students in lower secondary education (age group 12-16 years) to IT, the goal of the project being to integrate this into the general curricula (Hartsuijker 1986: 89-90; Van Weering & Plomp 1991: 17).

In its second report, in 1984, the ACEIT called this proposed new subject "Information literacy and computer literacy (ICL)" defining it as

The knowledge and skills concerning the use of computers for getting information to solve a given problem or to know more about a certain subject, as well as for the control of processes (cited in Van Weering & Plomp 1991: 17).

The concept of ICL differed from information literacy as understood in the USA, as, in the Dutch sense, "information and computer literacy" was

not aimed at computer literacy in the meaning of learning programming skills and how to operate a computer, but an introduction to "information and computer science" conceived of as that part of computer science and information science that every citizen should know (Plomp & Carleer 1987: 53).

The provisional ICL curriculum distinguished four main aspects (Hartsuijker 1986: 90-91):

1. applications of IT
2. information and data processing
3. data-processing systems
4. social significance of IT.

It thus appears that ICL as envisaged in the Netherlands in the 1980's had more to do with IT (essentially computers) than with information handling in general.

The 1980's closed with two important documents, both emphasizing the role of the library in information literacy teaching: a book (Breivik & Gee 1989) that developed from the aforementioned 1987 conference which focused on the role of libraries in attaining improvements in higher education, and a report from the ALA (*ALA Presidential Committee ...* 1989). Both documents placed information literacy firmly at the forefront as a combined library and educational issue. The Breivik and Gee book was published under the auspices of the American Council on Education, thereby indicating that the importance of information literacy was being acknowledged at national level in the educational sector (Breivik 1991a: 227).

Breivik and Gee were, at the time, the Librarian and the President respectively of the University of Colorado. Their common belief is that quality education should help students to become lifelong learners, the requirement being that students need to become "effective information consumers who are able to locate pertinent information for any need in their personal or professional lives" (Breivik & Gee 1989: x) - that is, students need to become information literate.

Breivik and Gee's philosophy is that, in an information society, the ultimate measurement of the quality of undergraduate education is whether students are self-directed,

independent learners. They believe that the library has a pivotal role in education:

Libraries are where the knowledge of all disciplines is related within a meaningful framework. Libraries provide a model for the information environment in which graduates will need to work and live. Libraries are a natural environment for problem-solving within the unlimited universe of information. Libraries provide the framework for synthesizing specialized knowledge into broader societal contexts. And finally, libraries and librarians can help students master critical information-literacy skills (Breivik & Gee 1989: 28).

The University of Colorado's approach to introducing information literacy into the curriculum provided the framework for the issues discussed in the book. In common with many other American universities in the late 1970's, undergraduates at the University of Colorado had been required to take courses in computer literacy. However, this was found to be inadequate preparation for information literacy. Owing to the leading role the University's librarians were taking in the information literacy movement, and the conviction of the University's administrators that the Library had an important role to play in the educational reform which was underway, the partnership which was formed between the library and the university administration paved the way for the introduction of resource based learning across the curriculum at the University of Colorado.

Breivik and Gee emphasize the importance of partnerships in striving for information literate graduates: partnership between the university administration and the library; partnership between the classroom and the library; and partnership between the business community and the library (Breivik & Gee 1989: 153). Information literacy teaching is thus seen as the joint responsibility of the library, the whole university and the community for which it provides manpower.

The second major document which appeared in 1989 was the

report of the ALA Presidential Committee on Information Literacy. The report propounded the importance of achieving information literacy and stressed that it could be achieved only by means of a new model of resource based learning. The report was widely publicized and gained significant attention worldwide. As a result, the ALA's definition of information literacy is the most frequently used today:

To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information ... Ultimately, information literate people are those who have learned how to learn. They know how to learn because they know how knowledge is organized, how to find information, and how to use information in such a way that others can learn from them. They are people prepared for lifelong learning, because they can always find the information needed for any task or decision at hand (*ALA Presidential Committee ... 1989: 1*)

The ALA report discusses the importance of information literacy to individuals, business, and citizenship, stressing the importance of information for problem solving and decision making. Recommendations for improving the standard of information literacy concentrate on reducing the gap between the classroom and the library by introducing a new model of learning:

What is called for is not a new information studies curriculum but, rather, a restructuring of the learning process. Textbooks, workbooks, and lectures must yield to a learning process based on the information resources available for learning and problem solving throughout people's lifetimes - to learning experiences that build a lifelong habit of library use. Such a learning process would actively involve students in the process of

- * knowing when they have a need for information
- * identifying information needed to address a given problem or issue
- * finding needed information
- * evaluating the information
- * organizing the information
- * using the information effectively to address the problem or issue at hand.

Such a restructuring of the learning process will not only enhance the critical thinking skills of

students but will also empower them for lifelong learning and the effective performance of professional and civic responsibilities (*ALA Presidential Committee ... 1989: 7*).

The report incorporates all the foremost issues which appeared in definitions of information literacy throughout the 1980's and, most important, identifies the actual information skills which are required for information literacy. As a result of this report, the National Forum on Information Literacy was established to continue promoting the concept of information literacy in the USA (Breivik 1990 and 1991a: 227).

2.3.2.1 Conclusion

As interest in information literacy increased during the 1980's, the literature shows a considerable augmentation in the meaning of the concept compared with that of the previous decade.

The 1970's definitions had highlighted the fact that information literacy required a new set of skills for the efficient and effective utilization of information and its access tools, and that the use or application of the located information was intended for problem solving. Definitions during the 1980's added the following scope to information literacy:

- * New information technologies have to be taken into consideration with regard to the manner in which they can assist information handling, and the skills which are required for their use.

- * Particular attitudes, such as the awareness of a need for information, a willingness to locate and use information, the appreciation of the value of information, and the accurate application of the information, are required.

- * Higher order critical thinking skills such as understanding and evaluating information are necessary; mere location of information is insufficient.
- * Although libraries are regarded as major repositories of information sources, they should not be seen as the only resources.
- * Library skills are not sufficient for complete information literacy; neither are computer skills.
- * User education programmes require a paradigm shift in order to accommodate the full range of skills required for information literacy.
- * In an information society, information literacy could be seen as an extension of the literacy realm.
- * Information literacy is a prerequisite for active, responsible citizenship.
- * The goal of information literacy is the attainment of lifelong skills which enable the person to be an independent learner in all spheres of life.
- * Information literacy teaching can enhance the attempts at educational reform which aim at producing independent learners.
- * The teaching of information literacy is a combined librarianship and educational issue which requires a partnership between the two disciplines.
- * In order for information literacy teaching to be effective in the educational sphere, the skills should be taught across the curriculum in a resource based learning approach.

* Various information skills are required for information literacy:

- knowing when there is a need for information
- identifying the information needed in order to address a problem
- finding the needed information
- evaluating the located information
- organizing the information
- using the information effectively to address the problem.

By the end of the 1980's, information literacy was no longer an embryonic concept: it had been defined with clarity and its realm comprehensively delineated.

2.3.3 1990's

By the start of the 1990's, the meaning of information literacy as proposed by the ALA was generally accepted. Ridgeway (1990: 645) and Ford (1991b: 313) note that the current meaning and use of the term had developed in response to the USA national educational reform reports which had largely ignored the role of libraries in the information society.

Information literacy had thus become a major issue in librarianship, since the profession saw in it a way that they could make a contribution towards a society of lifelong learners. Although it had become apparent that information literacy was regarded as a combined librarianship and educational issue, the literature remains essentially confined within the LIS discipline.

Four main trends are apparent in the 1990's literature to date: educating for information literacy is enjoying attention; information literacy is being considered as part of the wider literacy continuum; librarians are evaluating their role in the information literacy movement; and the in-

formation handling skills required for information literacy are being authoritatively identified.

2.3.3.1 Educating for information literacy

Although the introduction of information literacy courses or programmes was evident in the second half of the 1980's, the latest literature indicates that the trend is continuing worldwide, spurred on to a large extent by the ALA report of 1989, which was widely distributed. Several information literacy courses or programmes which have been introduced at universities are discussed in the literature, and some models of curricula for information literacy have been proposed. Most models originate from the LIS field, many showing roots in previous user education programmes offered by academic libraries. Representative examples from the literature, which indicate the trend in education for information literacy, are mentioned here.

(a) Universities in the USA

Rader (1990b) reports on how the entire basic curriculum of Cleveland State University underwent a major revision, resulting in the incorporation of an information literacy component from 1992. The information literacy programme, which is an expansion of the previous user education programmes, involves librarians working with academic teaching staff to incorporate information literacy modules in appropriate subject courses.

MacAdam (1990) suggests that two courses developed at the University of Michigan could be used as curriculum models for information literacy programmes. One of these courses (an undergraduate course on information gathering) had been developed for students majoring in Communication Science; the other was a graduate course on bibliographic instruction offered by the School of Information and Library Studies

(SILS). A Joint Task Force from the University's library and SILS has since defined a programme to enhance the information literacy of all students at the university, and expose institutional barriers to information of concern to minority groups. The programme, which teams librarians and library school lecturers, consists of two broadly based information courses (one dealing with general information issues and technologies, the other with societal barriers to information access), and additional service courses which are offered at upper-undergraduate and postgraduate levels for specific disciplines (Dimitroff *et al* 1990).

(b) General models

Naito (1991) outlines a general proposal for a programme which is aimed at ensuring that all university graduates will be information literate. The curriculum suggests that information literacy training would be initiated in the student's first year of study, and thereafter be included in each course offered by the university. The initial course suggested is a credit bearing library research skills course, after which advanced research skills are included as part of the introductory courses in each discipline.

Bjørner proposes a working model for an information literacy curriculum, comprising a broad metacourse which could encompass all disciplines at all levels, from elementary school to university. The model (Bjørner 1991:156), based on earlier research (Bjørner 1989), identifies eight key characteristics of information literacy to be taught across the curriculum:

1. Recognizing and accepting an information gap
2. Responding positively to the need for investigation
3. Constructing alternative strategies to reduce the information gap
4. Evaluating and selecting a strategy

5. Acting on a strategy
6. Assessing the effectiveness of a strategy
7. Using information
8. Storing information for future use.

(c) The Netherlands

In the Netherlands, by the start of the 1990's, the information and computer literacy (ICL) course introduced in 1983 was being taught at nearly all secondary schools. Ongoing curriculum development in the Netherlands has provided more clarity on the Information Science element of ICL:

ICL will involve the knowledge and skills needed for data collection, organizing, processing and retrieving. These specific skills are likely to be addressed implicitly in computer applications in the more traditional subject matter areas. This focus relates to a class of skills for which the computer is an important, versatile aid. The general idea behind emphasizing information-handling skills is that data and information are different concepts (Van Weering & Plomp 1991: 19).

ICL covers both manual and computerized data collection and processing, and emphasis is placed on differentiating between knowledge and information. Particular elements of Information Science, as incorporated in ICL, are identified as

1. general databases which are used "by virtually everybody" (for example encyclopaedias, bus timetables, videotext systems)
2. the need for the organization of databases so that data is accessible and usable (Van Weering & Plomp 1991: 19).

Although ICL in the Netherlands appears to remain slanted towards computer applications, the course now shows a shift towards general information handling knowledge and skills, with an accent on problem solving in the sense of finding relevant information by using appropriate IT (Van Weering &

Plomp 1991: 21).

(d) South Africa

In South Africa, the semantic problem mentioned in section 2.1.1 is very evident, as the concepts of information literacy, information skills, information education, library skills and user education are often used synonymously. In keeping with the approach taken in this thesis (that is, the separate consideration of the concepts), South African research and literature dealing with educating for information literacy specifically will be covered in the present chapter, together with what is known as information education. Local research and literature on education for information skills will also be discussed here. South African research and literature on user education programmes (that is, library skills) will be covered in chapter 4 and in chapter 6, where the user education programmes of the Unisa library are considered separately.

Blom investigates the subject of Information Science and its fields of application, concluding that the subject has a "rightful place as a supporting subject or main subject in a degree course in the same category as for example Sociology, Psychology and Computer Science" (Blom 1990:145). In chapter 1, section 1.2.1.5, reference was made to certain South African universities opening courses in Information Science to students other than those taking a degree or diploma in the LIS field. The availability to university students in general of such a subject, where information handling is pivotal, could provide a stimulus to teaching information literacy in such courses, especially at the first year level.

Boon (1990: 2) introduces the notion of information education ("inligtingsopvoeding") for the process by which information literacy is achieved:

Inligtingsopvoeding kan omskryf word as die opvoedingsproses waardeur mense intellektueel toegerus word om inligting as hulpbron effektief in hulle lewe te kan gebruik, hetsy vir besluitneming en/of opvoeding en/of ontspanning en/of ontwikkeling en/of probleemoplossing, ens. (Boon 1990: 2)

Current research by Marais (1991a; 1991b) concentrates on the realm of information education. He follows the same line of thought as Boon in perceiving information literacy as the outcome or product of information education:

Inligtingsgeletterdheid is bloot 'n geletterdheids "toestand", of "vlak", en moet beskou word as die "produk", of "uitkoms" van 'n proses van inligtingsopvoeding ... inligtingsopvoeding is dus die proses waardeur individue toegerus word met bepaalde inligtingsgesindhede, kennis oor/van inligting en inligtinggebruik, en toepaslike vaardighede in inligting en inligtinggebruik (Marais 1991b: 4).

Marais (1991a: 2-3) provides four aims for information education:

1. Promoting a knowledge and understanding of
 - information as a human phenomenon
 - the impact of information on today's society
 - the importance to the individual and society of the effective use of information.
2. Creating an information attitude, which includes the ability to recognize the need for information in everyday activities and a questioning attitude in life.
3. Equipping the individual with skills for independent and effective information obtaining, handling, management and use, such skills extending beyond book, media or library skills into the wider sphere of the organization, evaluation and communication of information.
4. Promoting an information culture to enable the individual to participate successfully in a free and democratic society.

Marais (1991a: 5) also proposes that information education

is not merely the teaching of information handling skills, and cautions against too much attention being paid to information skills at the expense of other aspects of information education, such as an information attitude and a knowledge of the nature and existence of information. His approach to information education pays particular attention to the importance of information literacy for responsible citizenship in a democratic society (Marais 1991b).

Information literacy training for a particular university subject (as opposed to general information literacy) is discussed by Myers (1991), who outlines chemical information literacy programmes for undergraduate and postgraduate Chemistry students at the University of the Witwatersrand. The programmes were initiated by the academic department but are now presented jointly by the Department of Chemistry and the University library. Central to the programme is the department's Chemistry Resource Room which holds a number of sources such as textbooks, manuals and handbooks, journal reprints, audio-cassettes and Computer-Aided Instruction (CAI) programs. Academic support is provided to disadvantaged students and students in bridging courses. Courses on computing in Chemistry are offered, as well as instruction in manual and online bibliographic searching. The programmes for Chemistry students are indicative of the universal trend towards partnership between teaching staff and librarians in the presentation of information literacy courses.

Van der Walt (1992) undertook an exploratory literature study, with a view to establishing what a course in information skills for university students should include. Using descriptions of similar courses found in the literature, he compiled a list of instructional objectives for a possible course and suggested what the subject content might cover. Although Van der Walt did not draw up an actual curriculum suitable for South African university students, he suggests that appropriate elements could be selected from the proposed objectives and content, according to the needs and circumstances of institutions planning to introduce

programmes to improve information literacy.

At present, it appears that educating South African university students for information literacy is seen as falling within the ambit of LIS departments. At a symposium held in 1992 on the subject of training in Information Science up to the year 2000, Töttemeyer (Information Science training ... 1992: 11) recommended that LIS departments at South African universities and technikons should consider it their duty to offer information skills training courses to all first year undergraduates.

(e) Future scenario

It would appear that the development and introduction of curricula which promote information literacy will remain topical internationally during the 1990's. Whether educating for information literacy will be undertaken by means of separate courses or programmes, or whether it will be accomplished by means of wider-ranging educational approaches or reforms, remains to be seen.

Breivik (1991b: 13) suggests that it is not a new information studies curriculum which is called for, but rather a complete restructuring of the learning process to incorporate resource based learning. Through this approach, she believes the development of critical thinking skills would become integral to the learning process, thus preparing students for lifelong learning.

McCrank (1992: 493) discusses academic programmes for information literacy, and notes that any programme which is hosted by the library must use the library as a gateway to other information services and organizations (such as other libraries, archives, museums, galleries, publishing houses, clearing houses, media centres, databases and telecommunications services), since the academic library does not have the monopoly on information resources. He also suggests that

the concept of information literacy is so wide that it can only be effectively accommodated by means of a "full-scale, formal program across the curriculum, perhaps in imitation of "Writing across the Curriculum" developments" (McCrank 1992: 493).

2.3.3.2 Literacy continuum

The decade of the 1990's began with the spotlight on the universal illiteracy problem. The United Nations General Assembly proclaimed 1990 as "International Literacy Year" to mark the start of a ten-year effort to reduce illiteracy. Locally, the South African Institute for Librarianship and Information Science (SAILIS) designated 1990 as "Year of the Reader". As a result of the focus on illiteracy, the meaning of literacy today was explored: was the ability to read and write - as manifest in the traditional meaning of literacy - sufficient for functioning in present society?

Researchers in the 1980's had already introduced the notion of information literacy being part of the literacy spectrum (see, for example, Kuhlthau 1987b and Olsen & Coons 1989, as discussed in section 2.3.2). Experts on literacy had earlier established that the dichotomous framework of literate or illiterate was no longer feasible. Any contemporary definition of literacy would need to recognize that the concept implied a continuum which represented different degrees of development at which individuals were functional. Hillerich (1976: 53) had illustrated this continuum in his definition of literacy as

that demonstrated competence in communication skills which enables the individual to function, appropriate to his age, independently in his society and with a potential for movement in that society.

Clifford (1984: 479) had concurred that literacy should be regarded as a continuum:

At one end lies some ability to reproduce letter combinations with the voice or hand; successive gradations of skills extend, at the other end, to such language-using behaviors as are called logical thinking, higher order cognitive skills, and reasoning.

Today, literacy is viewed as an evolving concept, its meaning dependent on the social and individual requirements of a specific society. Since literacy has to be considered in its cultural, social, economic and political contexts, its definition should take into consideration the expanding information needs of society (Breivik & Gee 1989: 22-23; Behrens 1991c: 198). Campbell (1990: 149) gives an indication of what would be regarded as literacy for an adult in an information society:

Literacy involves the integration of listening, speaking, reading, writing and critical thinking; it incorporates numeracy. It includes the cultural knowledge which enables a speaker, writer or reader to recognise and use language appropriate to different social situations. For an advanced technological society ... the goal is an active literacy which allows people to use language to enhance their capacity to think create and question, in order to participate effectively in society.

The focus on literacy/illiteracy at the start of the 1990's dovetailed with the established information literacy movement. Information literacy began to be explored in more depth within the context of the literacy spectrum (Reichel 1990).

Behrens (1990a) analyzes the concept of literacy in relation to an information society. She concludes that since the connotation of literacy is dependent upon the society within which it is being considered, information handling skills are inherent in the meaning of literacy within a technologically advanced society.

Kwasnik investigates the concept of literacy in a computer age. She compares the meanings of the terms literacy and computer literacy, concluding that, although they overlap

conceptually in that they share many conceptual frames (that is, as basic academic skills, with regard to cognitive and developmental factors, a social context, and as abstract concepts), both terms refer to "only the most superficial and transitory of the skills and competencies that will eventually define information literacy" (Kwasnik 1990: 127). In a computer age, literacy requires a new dimension. It can be defined primarily as information competence; namely, the ability to use information processing skills (Kwasnik 1990: 138-139). Breivik (1991b) concurs that the realities of the information age attest to the need for the definition of literacy today to include the ability to find and evaluate information. Arp (1990) follows the same line of thought, but reflects that, if the skills of information access and retrieval form part of the literacy continuum in an information society, the concept of information literacy could be redundant.

In giving examples of basic human needs which today require information for their satisfaction, Behrens (1991c: 195-196) observes that the need for information is not felt only by the literate, but that it is present at illiterate levels as well. Information needs are not restricted to a developed society; being illiterate does not preclude the need for information.

It appears that dependence on information in today's society - whether a highly developed information society or a developing community of illiterates or neo-literates - could influence and expand the contemporary meaning of literacy to include information literacy.

2.3.3.3 Role of librarians

The literature from the beginning of the 1990's indicates that librarians throughout the world, both in practice and as educators in LIS departments, are intent on firmly establishing a role for their profession in the information

literacy movement. Current literature indicates that librarians plan to keep information literacy in the headlines, and that attention is being paid to information literacy in public libraries. The problem of the partnership between librarians and educators is enjoying particular attention. However, reservations are also being expressed about several aspects of the whole information literacy issue.

(a) Keeping information literacy at the forefront

In the USA, information literacy remains at the forefront of ALA activities. The National Forum on Information Literacy was formed as a result of a recommendation of the ALA report on information literacy that a coalition be formed to coordinate national organizations promoting information literacy (*ALA Presidential Committee ... 1989: 11*). This Forum plans to target particular groups which can benefit from information literacy issues, and intends keeping information literacy an active issue among academics: higher education is one such targeted group (*Breivik 1991a: 227*). The Forum also intends promoting information literacy as an integral part of the literacy continuum (*Breivik 1991b: 10-11*).

Information literacy was one of the issues focused on at the Second White House Conference on Libraries and Information Services (WHCLIS) in 1991, where national attention was drawn to the contribution made by libraries and information services to a literate, productive and democratic society (*Akeroyd 1991; Berger 1991; Breivik 1991b; Shay 1991*). One of the recommendations of the second WHCLIS calls for the USA government to establish a National Coalition for Information Literacy (including schools, libraries, labour and industry, government, parents and the general public), with the intention of developing a strategic plan for the general development of skills required for information literacy (*Ford 1991c: 559-660*).

(b) Information literacy and public libraries

A suggestion in the ALA report on information literacy was that public libraries are potentially the strongest and most far-reaching community resource for encouraging lifelong learning (ALA Presidential Committee ... 1989: 6). Whereas public libraries had not been involved in user education previously (but had been involved in literacy issues), information literacy's place in the literacy continuum provides these libraries with a new challenge (Reichel 1990: 46). The need to provide user education to clients of public libraries is discussed by Curran (1990), Intner (1990) and Diehl and Weech (1991a; 1991b). Zobec (1990) suggests cooperation between public libraries and schools in the sense that public libraries provide access to community resources necessary for information literacy.

(c) Partnership with teaching staff and policy makers

Advocates of information literacy believe that, unless librarians create partnerships with teaching staff and policy makers, the librarianship profession will not have much success in taking a leading role in information literacy teaching (Ridgeway 1990: 646). Breivik (1991a: 227), however, warns that, by becoming partners with teaching staff, librarians must be careful that they are not doing themselves out of their previous teaching responsibilities, which were concentrated in user education.

Increasing attention is being paid to the issue of this partnership. In a paper written at the request of the WHCLIS staff, Breivik (1991b: 13) notes that teachers, as the pedagogical and subject specialists, require complementary assistance from those whose expertise is in information if the objectives of a course are to be achieved through resource based learning.

Werrell and Wesley (1990) describe a workshop which is designed to provide a forum for collaboration in information literacy teaching between librarians and teaching staff. Devinney (1990) outlines the cooperation between librarians and teaching staff in bibliographic instruction programmes presented at the State University of New York at Buffalo. Lowry (1990) points out how librarians, with their knowledge and skills (together with expertise in new IT) are well equipped to teach users how to exploit computer based information sources. She also outlines a credit bearing course which is taught in the Graduate School of Arts and Sciences at Columbia University. Davies and Murdoch (1991a; 1991b) describe the role of tutor librarians at Norwich City College, where they are included with teaching staff in degree course teams. Rader (1990b) describes the role of librarians at Cleveland State University in curriculum planning, noting that librarians have a special status on campus as the only members of the non teaching staff represented in the Senate. Line (1990) provides a general discussion of the role of libraries in the educational process, noting the importance of librarians working together with teaching staff in curriculum development.

(d) Reservations

Reservations have been expressed about whether librarians are overreaching their goals in their quest for information literacy, and whether information literacy is perhaps not merely souped-up terminology for user education. McCrank (1991) is critical of a number of issues relating to librarians and information literacy, mentioning terminology problems in librarianship, the complexity of libraries which appear bewildering and problematic to users, the fact that libraries are not the exclusive providers of information, and that many people operate at "supralibrary" levels. He also questions whether funding is perhaps the hidden agenda behind the information literacy movement.

McCrank also queries whether librarians are recognized by other experts, and by the public as having the competence and expertise to provide such bold initiatives as are proposed in information literacy programmes. He asks whether librarians have the credentials, training and post degree accomplishments to teach information literacy, commenting that LIS education remains too generalized (with insufficient subject content), and that it is "not known for a balanced attention to the two forms of knowledge identified by Samuel Johnson" (McCrank 1991: 41).

Behrens (1991a; 1991b) also has qualms, notably about librarians' credentials to teach and test higher level cognitive skills. She points out that not all librarians have a thorough knowledge of didactics. She proposes that librarians need to obtain peer acceptance for their plans, and suggests that, instead of starting directly with students, librarians should rather make educators their initial target group for information literacy, in order to introduce the issues and to convince them that librarians have something to offer in the learning process.

2.3.3.4 Information handling skills

The connection between the information literacy movement which had originated in the USA, and the information skills movement which started in the UK in the 1980's (see chapter 3), becomes more obvious in the literature of the 1990's.

That specific information handling skills are required for information literacy, is indicated in definitions of information literacy which appear in the early 1990's. The range of the particular skills, and the high level of cognitive skills which are involved, are also stressed. Curran (1990: 349) points out that information literacy involves several abilities and is not restricted to location skills. His definition of information literacy stresses information handling skills:

Information Literacy consists of an assortment of interconnected abilities having to do with the use of information:

1. The ability to know that information would help;
2. The ability to know where to go to get information;
3. The ability to retrieve information;
4. The ability to interpret, organize, and synthesize information; and
5. The ability to use and communicate information.

Bjørner (1991: 151) also highlights a range of information handling skills. She considers information literacy as the ability to

1. recognize an information need
2. be motivated to satisfy that need
3. develop a strategy to find the needed information
4. carry through the strategy
5. organize, evaluate, and utilize the information in a satisfactory fashion.

Behrens (1991a: 6) views information literacy as the ability to locate information in any system, to mould information solutions to problems, and to practise effectively the following skills in relation to this information:

- * understanding/comprehending
- * interpreting/evaluating
- * organizing/synthesizing
- * applying/using/communicating.

She notes that information literacy relates strongly to what is done with the information after it has been located: it extends beyond simple location skills and involves higher level cognitive skills.

Kwasnik also highlights cognitive skills, and concurs that what happens to the information acquired and transmitted in what is regarded as today's "literate mode" is most significant. She stresses that information skills are required for today's literacy, summarizing the skills as:

* The acquisition (through experience) of a large body of knowledge within which new knowledge is integrated. Such knowledge includes subject-specific knowledge as well as knowledge of processes and methods.

* An ability to organize existing knowledge conceptually, and to recognize and produce relationships by remembering, recognizing and reorganizing the knowledge.

* Conceptual flexibility which allows alternative methods of organization, and different (creative) avenues of formulating and solving problems.

* An ability to analyze a problem into its components, and also to view the problem in a larger context and to consider alternative viewpoints.

* To use these skills to define one's own information needs effectively, to choose appropriate problem-solving aids and know their limitations, and the ability to translate an unshaped information need into the language of any system (for example, library, index, computer) in order to utilize that system effectively (Kwasnik 1990: 141-142).

Marais considers information literacy as the product or outcome of information education (see section 2.3.3.1). He identifies information skills as one of the components of information education, listing information skills as

- * analysis and interpretation
- * evaluation
- * synthesizing
- * communication.

The skills of analysis, interpretation and evaluation of information are seen as high level cognitive skills (Marais 1991b: 8).

The range and level of skills which are identified or implied in definitions of information literacy in the 1990's are recognized as relating to effective information handling. The skills which are required for information literacy are identical to those identified in various taxonomies of information skills which were drawn up during the 1980's, as is argued in chapter 3.

2.3.3.5 Conclusion

This review of the literature from 1990 to 1992 on information literacy indicates that the issue is most likely to remain topical in the LIS field during the rest of the decade. Whether the information literacy movement will spread beyond librarianship - notably into the general education field - will depend on how successful librarians are in promoting both the importance of the issue and the significance of their role in the arenas of a learning society, and lifelong skills.

2.4 SKILLS REQUIRED FOR INFORMATION LITERACY

It is apparent from the above that the meaning of the term, information literacy, relates to the ability of a person to practise certain information handling skills. These have been identified in this chapter as:

- * Recognizing a problem, knowing when information will help to solve the problem, and then being motivated to solve the problem.
- * Identifying what information is required for the problem.
- * Moulding a strategy (or alternative strategies) to find the information, and knowing where to find the information.

- * Carrying through the strategy by locating the information, using any relevant resources and tools.
- * Selecting the required information.
- * Analyzing and interpreting this information, in order to gain an understanding of it.
- * Organizing the synthesized information.
- * Utilizing the information in order to solve the problem.
- * Assessing the effectiveness of the strategy in solving the problem.
- * Storing the information for future use.
- * If necessary, communicating the solution of the problem to others.

The skills mentioned above can be seen as interconnected abilities, some of which are regarded as higher order skills which involve critical thinking. Once mastered, the skills should be transferrable to any situation and thus become lifelong skills, and applicable to information in any form.

The discussion has shown that information literacy requires that the information handling skills should be practised efficiently and effectively, and that they be applied with the intention of solving any problems which arise in day-to-day living.

2.5 WORKING DEFINITION OF INFORMATION LITERACY

Information literacy lies at the higher end of the literacy

continuum, since it denotes a person's ability to function in an information-permeated society where the basic literacy skills (reading and writing) are insufficient to utilize the information for problem solving. Information literacy entails the application of higher order cognitive skills such as synthesizing and evaluating information which has been gathered through basic location skills. Information literacy thus refers to a person's ability to apply particular information handling skills in order to locate and utilize information from any resource efficiently and effectively.

2.6 CONCLUSION

The origin of the concept of information literacy has been investigated, the progress of the concept through two decades has been outlined, and the growth in the meaning of information literacy within an information and learning society has been highlighted. The skills or abilities which were identified as a prerequisite for information literacy have been listed, and it has become apparent that the concept information literacy is sufficiently broad to encompass the concepts of information skills and library skills. A working definition of information literacy has been proposed, with the intention of providing a framework within which information skills and library skills will be investigated.

The following chapter will deal with information handling skills in more detail by investigating the information skills movement which originated in the United Kingdom.

CHAPTER 3

THE INFORMATION SKILLS MOVEMENT

3.1 INTRODUCTION

In chapter 2, the origin of the information literacy movement in the USA was investigated, and the meaning of information literacy today was explored. The chapter concluded with the identification of the information handling skills which are a prerequisite for information literacy, and provided the following working definition of information literacy:

Information literacy lies at the higher end of the literacy continuum, since it denotes a person's ability to function in an information-permeated society where the basic literacy skills (reading and writing) are insufficient to utilize the information for problem solving. Information literacy entails the application of higher order cognitive skills such as synthesizing and evaluating information which has been gathered through basic location skills. Information literacy thus refers to a person's ability to apply particular information handling skills in order to locate and utilize information from any resource efficiently and effectively.

The concept of information literacy is thus regarded as sufficiently broad to be used as an umbrella term for the notion of information handling skills; that is, the concept of information skills. The present chapter investigates information handling skills by moving from a consideration of practice in the USA to an appraisal of that in the United Kingdom, where the information skills movement arose. The background to the information skills movement is sketched, the origin of the concept of information skills is investigated, and major research projects in the field of user education and, later, information skills, are reviewed.

3.1.1 Rationale for separate conceptual analyses

As mentioned in chapter 2, the approach in this thesis is to separate the conceptual analyses of information literacy and information skills, and to investigate their origination discretely. This procedure is adopted for the following reasons which materialized during the literature search:

* Information literacy is the preferred concept in the USA, whereas the British use the concept information skills. The bulk of the literature in the LIS field arises from research in these two countries. It was thus possible to investigate the origin of the concepts geographically, especially since almost all of the literature on information literacy emanates from the USA and most of the early literature on information skills is of British origin.

* During the initial literature search, information literacy appeared to be a wider embracing concept than information skills. This was subsequently confirmed during the analysis undertaken in chapter 2, since it has arguably been shown that information literacy entails the application of information skills.

* The literature indicates similarities in the reasons for the origins of the separate movements in the USA and the United Kingdom. This has implications for the developing information literacy movement in South Africa, since research in the country relies extensively on the literature of the USA and the United Kingdom in both the education and LIS arenas.

3.2 BACKGROUND TO THE INFORMATION SKILLS MOVEMENT

The initial stimulus for the information skills movement arose during the 1970's from two complementary factors in the educational arena in the United Kingdom. The first fac-

tor was educational reform initiatives and their subsequent reports, most notably the Bullock Report. The second factor was attention paid by the British Library to the improvement of user education in schools.

3.2.1 *A language for life* (the Bullock Report)

In 1972 the Secretary of State, Mrs Margaret Thatcher, set up a committee to inquire into the teaching of reading and other English language skills in schools in the United Kingdom. The terms of reference of the committee were to consider, in relation to schools,

- (a) all aspects of teaching the use of English, including reading, writing, and speech;
 - (b) how present practice might be improved and the role that initial and in-service training might play;
 - (c) to what extent arrangements for monitoring the general level of attainment in these skills can be introduced or improved;
- and to make recommendations (Great Britain. Department of Education ... 1975: xxxi).

The committee, under the chairmanship of Sir Alan Bullock, completed its investigations in 1974. The findings were released in a report entitled *A language for life* - usually referred to as the Bullock Report (Great Britain. Department of Education ... 1975). In the section of the report which covers the reading process, the importance of a pupil developing skills for dealing with information was emphasized:

Dealing efficiently with information must now be recognised as one of the major problems in modern society [D]ealing with information in the mass presents a broader set of problems of which the reading process itself is simply one element. It becomes increasingly necessary for a person not only to be able to cope with print efficiently, but to organise his own use of it. This means that he must be able to identify his own information needs, a much less simple matter than it sounds. He must then know the sources which will answer to them, judging the value of these from a wide range of material and selecting the

limited amount which will serve him best. The first implication of this is that children should have extensive experience in defining their own purposes. They need to become skilled in working out exactly what questions they should seek to answer by reading. The second is that they should be given the opportunity to explore many different kinds of printed media, and learn how to obtain what they need. Pupils should be led to confidence in the use of bibliographical tools and in tapping sources of information in the community at large ... (Great Britain. Department of Education ... 1975: 95).

In this manner, the Bullock Report obliquely stressed the value of information handling skills, and noted the importance of having effective user education programmes in schools.

3.2.2 Role of the British Library

The British Library has played a pioneering and continuing role in the information skills movement, by initiating and sponsoring research projects which have been undertaken in this regard, and by subsequently disseminating the results of these projects. This national library's involvement in what eventually became the information skills movement began in the mid-1970's, when its Research and Development Department (BLR&DD) set up a review committee to investigate user education issues. The initial stimulus for the interest arose as a result of the reports of major national curriculum projects which were undertaken in the United Kingdom during the 1960's and early 1970's, the abovementioned Bullock Report being the most recent.

As will be seen under section 3.4.1, in 1977 the BLR&DD's review committee made recommendations with regard to user education in the United Kingdom (*Review Committee ... 1977*). This led to the British Library's initiation of additional research into user education, and, ultimately, to its continuing research in the area of information skills.

3.3 ORIGIN OF THE CONCEPT OF INFORMATION SKILLS

In the British LIS literature, the concept of information skills is generally regarded to be of British origin. Heeks (1989: 8), for example, in noting that "it is notoriously difficult to pinpoint first use of terms", attributes the initial use of the concept of information skills to Marland (1981). However, Marland's report was preceded in the United Kingdom by Winkworth's (1977) project, which made reference to "library and information skills" in a study of user education, and a project by Brake (1980) which introduced the idea of "information and study skills" in the context of community information needs in a London school.

The notion of information skills had also been suggested some years previously in Australia. In 1966, the Commonwealth Advisory Committee on Advanced Education submitted its first report to the Australian government. This report made reference to "bibliographical and information skills":

It is not sufficient for the library of an educational institution merely to provide books to meet expected demands. It should actively encourage the use of its facilities inculcating the bibliographical and information skills valuable to the student in any future career (cited in Grimison 1986: 75).

It is interesting to note that, even during the 1960's, information skills were referred to when educational reform was considered. Of further interest is that, even in its nascency, the idea of information skills was seen as separate from, but related to, library skills (that is, "bibliographical" skills). Although the Australian report used information skills in the context of library use, it did not elaborate on what the information skills were. Since the actual information skills movement in Australia was eventually to arise only after the foundations had been laid in the United Kingdom, the origin of information skills cannot be said to stem from this 1966 introduction of the term.

The notion of information skills had also appeared in earlier American literature, as pointed out in chapter 2, section 2.2. The idea of information handling skills had arisen in the realm of library skills for American university students around the same time that the idea of information literacy was germinating in the USA, but it was the concept "information literacy" which eventually took precedence in that country.

In a BLR&DD report published in 1977, Winkworth (1977) used the idea of information skills in a vein similar to that of the Australian report and the American studies such as those of Breivik (1974; 1977) - by referring to such skills in a manner which coupled them with library skills. However, Winkworth did not identify information skills as a separate concept from library skills:

[E]ducational objectives should determine the library and information skills to be learnt, the method by which they will be taught, by whom and to whom ... (Winkworth 1979: 3).

Winkworth's report concentrated on user education (see section 3.4.1) and did not make the concept of information skills central to the study. However, as will be seen in chapter 4, the taxonomy of "thinking and learning skills" which are identified in this report (Winkworth 1977: 5-6) can be regarded as an early attempt to classify or categorize various information handling skills.

It does appear that the first use of the concept of information skills as an acknowledged, separate area of study, and the first attempts to describe what was meant by information skills, originated in the reports of the aforementioned two projects led by Brake and Marland. Since these two projects represent the point at which information skills started becoming an important issue in the education arena in the United Kingdom, they will be discussed in detail here.

3.3.1 Brake (1980)

Brake's seminal project began in June 1976 when discussions were held with the BLR&DD, which was becoming involved in user education in schools (Brake 1980: 1-2). Brake was involved in "The need to know" project, an exploratory project on community information in schools which was placed in the context of the information needs of pupils of the South Hackney Secondary School in London. The intention of the project was to collect and organize community information resources and to evaluate methods of teaching pupils how to retrieve and use the information in these resources for daily problems. Brake's report emphasized that the roots of the project lay in the "developing area of information/study skills" (Brake 1980: iii). Brake intimated that, at the time, information skills was a rather vague concept:

[I]n a narrow sense it describes the ability to retrieve information from a given information source e.g. person, book, or computer. In a broader sense the term refers to location, retrieval, selection, organization, evaluation and communication of information. In this latter view information skills become intimately bound up with study skills; it is with this broad view that this report is concerned (Brake 1980: 1).

The report elaborated briefly on the activities incorporated in information skills, noting that several inter-related skill areas (which were hitherto diverse in teaching programmes) were involved, notably: study skills, decision making skills, information retrieval skills, communication skills and social skills (Brake 1980: 43).

Brake's report stressed that

"The Need to Know" must not be seen as an isolated phenomenon that can be simply slotted into existing social education programmes; the roots of the project lie not in social education as such but in the developing area of information/study skills. In this context "The Need to Know" would be seen as the culmination of a long educa-

tional process - based upon the principle of learning to learn - and not a fragment to be patched onto the curriculum before the pupils leave school. Schools wishing to teach such programmes should first formulate whole school policies towards the teaching of information/study skills (Brake 1980: iii).

Even at its conception in the United Kingdom, thus, information skills was linked with the principle of learning to learn, and viewed as a subject which should be taught across the curriculum. Likewise, in the USA at the time of the origination of the concept of information literacy, Breivik (1974; 1977) had introduced the notions of lifelong learning and across-curriculum teaching as integral to information handling skills.

3.2.2 Marland (1981)

The second seminal work on information skills was the project reported on by Marland. A working group sponsored by the British Library and the Schools Council to define the library user education needs of school pupils, started employing the concept of information skills in reference to pupils' study skills and library competence. In their recommendations, the working group described information skills as

the ability to formulate and focus a question, find possible sources, judge their appropriateness, extract the relevant information, reorganize it, and prepare it for future use or presentation to others (Marland 1981: 11).

The working group distinguished user education, reading development, experimental and research training, study skills and media literacy as aspects of study which have common ground, noting that information skills includes some parts of all these skills (Marland 1981: 11). This working group reported to a conference which was sponsored by the British Library and held in January 1980. The final report of the working group was prepared by Marland and, since the

Schools Council considered the contents of the report to be of fundamental importance, copies were distributed to all secondary schools in England and Wales (Marland 1981: 7).

Marland's report is discussed in more detail in chapter 4, since it proposed a taxonomy of information skills which has since provided the foundation for other taxonomies of information skills.

3.3.3 Turning point

By the start of the 1980's, the development of the information skills of secondary school children was set to become a national educational issue in the United Kingdom. As will be seen in the next section, the beginning of the information skills movement dovetailed with increased attention being paid to user education in schools. Ultimately, user education would expand to incorporate the wider range of skills connoted by the concept of information skills.

3.4 RESEARCH PROJECTS

Starting in the 1970's, numerous research projects have been undertaken in the United Kingdom in the fields of user education and information skills. The major projects will be reviewed here with a view to tracing the progression from user education to information skills. The similarities between the origin of the information literacy movement in the USA and the origin of the information skills movement in the United Kingdom will then become more evident.

3.4.1 Pre 1980

Prior to the projects of Brake and Marland there were three major investigations into user education and information use in the educational system in the United Kingdom. The first

investigation was that of the Review Committee on Education for Information Use, which was set up by the BLR&DD in 1974 and which released its final report in 1977. The terms of reference of the committee were:

(a) To review research and related work on education in the presentation, handling and use of all types of information, for students, researchers, practitioners, teachers and administrators, and on the education of those providing user education.

(b) Where necessary, to request the commissioning of short reviews in particular areas.

(c) To identify gaps in past and present research in this field.

(d) To consider what steps might be taken to ensure practical action, including the implementation of the results of research.

(e) To report to the British Library Research and Development Department, recommending objectives and a programme for further research in this field.

(*Review Committee ... 1977: 2-3*).

The committee commissioned several subsidiary research projects, including a survey of user education programmes in universities and polytechnics in the United Kingdom (Stevenson 1976).

The committee made several recommendations, *inter alia* that:

* the BLR&DD should bring together interested parties (such as educational researchers, teachers, lecturers from colleges and departments of education, and teacher-librarians) to discuss and promote user education in schools; and

* attempts should be made to integrate user education with subject teaching at universities and polytechnics, and co-operation between academic and library staff should be encouraged (*Review Committee ... 1977: 8-9*).

In a project sponsored by the BLR&DD, Winkworth (1977) reviewed British and American literature on school library user education in order to extract from it theoretical and

practical factors useful for school librarians and teachers organizing user education programmes. In Winkworth's report, the germination of the idea of information skills is apparent. He identifies a number of educational objectives for user education, and provides an intimation of the purpose of teaching "library and information skills" (Winkworth 1977: 3):

- * enabling pupils to learn how to learn;
- * providing pupils with the opportunities of learning to think effectively, critically, reflectively and creatively;
- * providing pupils with opportunities for working and experimenting with ideas, applying ideas, analyzing, synthesizing and evaluating them.

Winkworth's approach did not take information skills *per se* into consideration as the core element, but rather remained in the traditional arena of user education. However, by associating user education with learning methods, Winkworth (1977: 5-6) provided a taxonomy of what he termed "thinking and learning skills". This taxonomy reflects a framework of various study skills (the selection and evaluation of materials) and library skills (the location of materials and information) - skills which, a few years later, would be referred to by British researchers such as Marland as information skills.

The third major project during this period was that of Irving and Snape (1979) who, under BLR&DD sponsorship during 1977 and 1978, surveyed over 100 teachers and school librarians in secondary schools in Nottinghamshire and Cheshire. They found that, although most secondary school pupils received user education during their entry year, beyond that level the user education was less systematic, and by their final year at school they received very little user education. Irving and Snape reported that, whereas "many teachers are aware of the curricular demands imposed upon pupils which result in their need to develop library,

research and study skills" (Irving & Snape 1979: 41), there was a significant gap between the skills which teachers expected of their pupils, and the actual instruction which pupils received in these skills. The research also found that "reading, learning and study skills are indivisible from effective library use" (Irving & Snape 1979: 42). The findings thus confirmed reservations which had been expressed in the Bullock Report that school pupils were not familiar with information handling skills.

A further project, intended to make the findings of the Irving and Snape research more widely known, and to stimulate interest in the emerging information skills movement in schools in the United Kingdom, was undertaken during the period 1978 to 1980 by the Centre for Educational Research and Development at the University of Lancaster. The impetus of this project grew from discussions with the BLR&DD, which then sponsored the eventual dissemination of the report (Hounsell & Martin 1983). The report describes a pamphlet and teaching resources folder, and the presentation of three workshops and two case studies. The project was not intended to yield a body of findings, and should be regarded merely as an extension of the research by Irving and Snape - with the advantage that, by the time the Hounsell and Martin report was disseminated, the concept of information skills was already in regular use.

3.4.2 Early 1980's

The seminal projects of Brake (1980) and Marland (1981) were discussed in sections 3.3.1 and 3.3.2. Marland's report can be seen as a turning point at which user education started broadening its scope, and the report spawned several projects in the United Kingdom, initiated not only by the British Library, but also by other bodies such as the National Foundation for Educational Research, the Council for Educational Technology, the Library and Information Services Council, and universities and higher education institutes.

Sponsored by the British Library, Irving (1983) reviewed earlier research projects on user education in schools in the United Kingdom, to provide a state of the art in 1983. She noted that

the range and nature of "user education" has substantially altered. From activities designed to find ways to educate schoolchildren about library use the community of professionals thus engaged has more recently directed attention towards ways of investigating information handling and use - whether or not this takes place in libraries ... User education in schools ... is often addressing broader and more fundamental aspects of information handling and use (Irving 1983: 1).

Tabberer and Allman (1983) reported on a project which investigated the introduction of study skills teaching into the curricula of sixteen- to nineteen-year-olds in schools, sixth-form colleges, and colleges of further education in the United Kingdom. The research project took place between 1979 and 1982 and was sponsored by the National Foundation for Educational Research. The concept of study skills was seen as including planning and organizing time and work, using a library, strategies for reading, remembering, taking notes, preparing and writing essays, preparing tables and diagrams, and examination preparation (Tabberer & Allman 1983: 3). Alternative titles for study skills were mentioned, including information handling skills, user education or library skills, with the "major rival" being information skills (Tabberer & Allman 1983: 4-5).

Tabberer and Allman's project comprised three elements: a review of current practice, an evaluation of that practice, and an exploration with teacher groups of major issues raised during the first two phases. Conclusions drawn from the project include that the teaching of study skills and the teaching of subjects should be more closely linked. This could be achieved either through a separate but parallel course in study skills, or (preferably) by means of integrating study skills into subject teaching (Tabberer & Allman 1983: 161-166).

The first report to be published by a British government department on information skills in schools appeared in 1984. The report was that of a working party established in 1982 by the Library and Information Services Council (an advisory body to the Office of Arts and Libraries), to consider the future of school library services in the country (*School libraries ... 1984*). The working party concluded that school libraries had a vital role to play in educating pupils in using information in formal education and throughout life, found that school libraries were underused, and suggested that they were underfunded. The central role of the library - that it should be the hub of all learning, and be the motivating force in information skills curricula - was emphasized. Among the recommendations made in the report was that the role of the school library in the curriculum be re-examined, and that there should be a whole school curriculum policy on information skills underlying all other aspects of curriculum planning (*School libraries ... 1984: 25-26*).

3.4.3 Late 1980's

Although the Library and Information Services Council working party could only make recommendations and had no legislative powers, the report generated much publicity and provided impetus for further research on the incorporation of information skills in the school curriculum in the United Kingdom. Information skills teaching was also encouraged by the publication of books aimed at teachers, such as *Study and information skills across the curriculum* (Irving 1985), written by a leading British specialist in study and information skills, and *The school library: responding to change* (King 1989), written by a past chairman of the School Library Association in the United Kingdom.

During the second half of the 1980's, new educational developments and initiatives, such as the General Certifi-

cate of Secondary Education (GCSE), the Technical and Vocational Education Initiative (TVEI), the Certificate of Pre-Vocational Education (CPVE), and the National Curriculum, were implemented in the United Kingdom. For these curricula, there was a move towards investigative project work which demanded of pupils a wider range of skills and resources, and increased attention was therefore paid to the role of libraries. The BLR&DD supported two symposia as part of the Project on School Libraries and Curriculum Initiatives, and the recommendations, papers and case studies of this project were then published (Kinnell & Pain-Lewins 1988). The findings of the project had far reaching implications in that recommendations were made for a greater resource base for school libraries as well as increased commitment to the initiatives at local and national levels.

Further projects initiated and sponsored by the BLR&DD included an investigation into how various forms of information technology (IT) were being used in schools, and the skills needed to exploit sources of information dependent on the use of IT (Carter & Monaco 1987), and a project which examined some school curricula subjects (in mathematics, history and science) in relation to information skills (Hopkins 1987). The published reports were aimed at helping teachers to bridge the gap between traditional and new approaches in teaching information skills.

By this stage, the accent on information skills teaching was present not only at school level in the United Kingdom. Several projects sponsored by the BLR&DD investigated the phenomenon at higher educational levels as well. For example: Cowley and Hammond (1987) reviewed the literature on methods of teaching library and information skills to students in universities, polytechnics and colleges; Malley (1988a) reviewed the literature on information skills teaching in colleges of further and higher education, and also surveyed information skills teaching in colleges of further and higher education (Malley 1988b); Cowley (1988) surveyed information skills teaching in higher education, and later

selected for analysis examples of information skills teaching at three universities and three polytechnics (Cowley 1990).

3.4.4 1990's

The BLR&DD has remained involved in research on information skills teaching. The most recent reports indicate that the incorporation of information skills in all levels of education in the United Kingdom remains topical (for example, Howard (1991); Heeks & Kinnell (1992); Markless, Streatfield & Baker (1992); Morrison & Markless (1992)).

3.5 PROGRESSION FROM USER EDUCATION TO INFORMATION SKILLS

In an outline of the emerging philosophy of information skills, Irving (1985: 2-4) noted that, during the century prior to 1980, instructing pupils in the use of libraries had been limited to teaching how libraries were organized and what they contained; the pupils' information needs were not assessed, and little attention had been paid to incorporating strategies for information gathering and use into the school curricula.

In a review published in the early 1980's, Irving (1983: 1) observed that the British Library's research activities had gradually turned from the narrower range of educating scholars about library use (that is, user education) prevalent during the mid 1970's, towards the broader aspect of information handling and use in general (that is, information skills).

In reviewing the literature from the mid 1970's to the mid 1980's, Hopkins (1987: 5-9) also mentioned the evident progression from user education to information skills. The change in focus was indicative of the move from an emphasis on instrumental skills (availability, location and

retrieval), towards an incorporation of higher order cognitive skills (analysis, synthesis and evaluation).

Thus, the information skills movement in the United Kingdom grew from the awareness that pupils needed to have higher level information handling skills than the instrumental skills which were taught in user education programmes. The progression in user education programmes towards those which cover the broader range of information skills was also evident in the information literacy movement in the USA. The growth in these programmes will be highlighted in chapter 5, notably when types of library skills programmes (such as the subject related, course integrated type) are discussed.

3.5.1 Looking to the future

Following on Irving's (1985) earlier survey, Heeks (1989) reviewed the research findings published between 1983 and 1988. Whereas Irving had noted the change in focus from user education to information skills during the earlier period, with librarians being solely involved, Heeks points out a second change in focus during the latter part of the 1980's. She observes a move from library projects to the investigating of the process of learning:

[T]he concern is not organisation of skills programmes but understanding that internalisation of information to create knowledge ... is at the heart of learning (Heeks 1989: 54).

She further comments that, whereas information skills had earlier been the responsibility of librarians, by 1988 it appeared that the initiative had passed to teachers:

As the focus of research interest has turned from instrumental skills, concerned with location and retrieval of material, to the cognitive skills, concerned with evaluation, analysis and synthesis of information, the library has inevitably moved out of the limelight (Heeks 1989: 55).

The new National Curriculum, which was introduced in schools in England and Wales in 1989, continues with the move towards incorporating information skills in the curriculum, thus building on initiatives introduced in the GCSE and TVEI:

[T]he National Curriculum has continued the move towards independent learning bringing library and information services into the centre of the learning process and reaffirms their vital role in the effective delivery of the curriculum (Library Association 1991: 2).

A taxonomy of information skills drawn up by the NCET (NCET 1989) to provide a framework within which information skills can be taught in the National Curriculum, is discussed in chapter 4. It appears that, for the foreseeable future, information skills will remain central to the curricula in the education system in the United Kingdom.

3.6 CONCLUSION

Information skills programmes in the United Kingdom arose from educational reform needs, and can also be seen as a progression from user education. As the importance of information handling skills received increasing acknowledgement in the educational arena, user education programmes began concentrating on the broader range of skills necessary for utilizing information in any form and from any source.

There is a strong similarity between the origin of information skills teaching in the United Kingdom, and the origin of the information literacy movement in the USA, where educational reform needs dovetailed with the progression of user education programmes. Both movements also made early note of the need for lifelong learning skills and the necessity for the skills to be incorporated within the learning process of the subject curriculum.

In the next chapter, the information handling skills which

are a prerequisite for information literacy will be investigated by examining several taxonomies of information skills, and ultimately compiling a typology of information skills for the purposes of this study.

CHAPTER 4

TYPOLOGY OF INFORMATION SKILLS

4.1 INTRODUCTION

In the previous chapter the British information skills movement was reviewed, and the similarities noted between its origin and that of the information literacy movement in the USA. Chapter 2 concluded with an outline of the skills which are necessary for information literacy, and the present chapter looks in more detail at these information handling skills.

The steps or stages in the process of effective information handling can be categorized or classified within a typology of information skills. The intention of this chapter is to compile such a typology. This typology will be used in chapter 5 as a framework within which library skills can be subsumed under generic information skills, thereby showing the relationship between information skills and library skills. Thus, a model of library and information skills will be the eventual outcome of this section of the study.

4.1.1 The conceptual framework

The approach taken is to work from a typology towards a model, according to the conceptual frameworks suggested by Mouton and Marais (1988: 136-144). Three types of conceptual frameworks are distinguished (Mouton & Marais 1988: 137):

typologies that basically have a classifying or categorizing function, *models* that, apart from classification, also suggest new relationships heuristically, and *theories* that, apart from the preceding functions (classification and heuristics), also fulfil an explanatory and in-

terpretative function.

The characteristics of these three types of conceptual frameworks, and the relationship between them, are illustrated in Figure 4.1.

Figure 4.1 Characteristics of, and relationships between, conceptual frameworks (Mouton & Marais 1988: 144)

	TYOLOGY	MODEL	THEORY
Function(s) (with distinguishing functions in bold)	classifying categorizing	classifying categorizing	classifying categorizing
		heuristic discovering	heuristic discovering
			explanatory

A typology is defined as "a conceptual framework in which phenomena are classified in terms of characteristics that they have in common with other phenomena" (Mouton & Marais 1988: 137). Mouton and Marais (1988: 137) then note that the borders between models and theories are often vague, but explain that the essential difference is that the most common characteristic of models is the heuristic function, whereas the explanatory function is generally attributed only to theories (Mouton & Marais 1988: 139).

4.1.1.1 Rationale for approach

In this chapter the literature is studied with a view to identifying the steps which are taken in handling information. Several taxonomies of information skills are to be found in the literature. These taxonomies or typologies - the two terms as regarded as synonymous (Mouton & Marais

1988: 137) - comprise lists of skills representing the hierarchy of information handling skills. By investigating several such taxonomies, a typology for the purposes of this study will be compiled. Once the library skills have been incorporated within the framework of this typology to suggest the relationship between library skills and information skills, the resulting model will have heuristic properties.

Since a model specifies and emphasizes certain relationships between major elements of a phenomenon, it draws attention to these themes and can be used to guide new areas of research into the phenomenon. Mouton and Marais (1988: 140-141) note that it is this "guiding function" which attributes a model with heuristic properties. A model provides directions for inquiry, or provokes questions about the phenomenon and the relationships between its elements, which could lead to new discoveries and ultimately to a better understanding of the phenomenon.

The model of library and information skills which is to be developed in this section of the research project, will be used to establish whether university students require a mastery of library skills if they are to be regarded as information literate. The model will have wider heuristic value as well, for example if used as a framework for the purposes of incorporating library and information skills teaching within a curriculum.

4.2 TAXONOMIES OF RELATED SKILLS

Since the start of the information literacy and information skills movements in the late 1970's, several taxonomies of information skills have been drawn up by educationalists and librarians. Most of the lists of information skills found in the literature reflect a process approach; that is, the main objective is the facilitation and development of critical thinking skills. Since these taxonomies concentrate on instruction in the cognitive domain, their dependence on, or

correlation with, Bloom's taxonomy of educational objectives for the cognitive domain will be observed.

Although this chapter concentrates on taxonomies of information skills in particular, it will be noted that such taxonomies bear strong resemblance to those of other skills, such as learning or study skills. From the beginning of the information skills movement, researchers had noted the interrelationship between the new concept of information skills, and other related skills. As outlined in the previous chapter under section 3.3, Brake (1980: 1; 43), for example, suggested that information skills are intimately bound up with other skills such as study skills, decision making skills, information retrieval skills, communication skills and social skills. Marland (1981: 11) observed that information skills have common ground with aspects of learning which include user education, reading development, experimental and research training, study skills and media literacy.

Taxonomies of related skills might therefore be equally relevant as taxonomies of information skills. For example:

* Barnes (1976) presents a general sequence for a learning process, the four levels of which (focusing stage, exploratory stage, reorganizing stage, and public stage) could provide the basis for a categorization of information handling skills.

* Bransford's and Stein's (1984) five-step "IDEAL" problem solving process (Identifying, Defining, Exploring, Acting, Looking) could be applied to information skills in the manner in which Flynn (1989) applied it to reading skills.

* Hughes' (1986) framework of thinking skills is similar to an information skills taxonomy.

* Rogers (1987) provides a model of the research process

which reflects a categorization of information handling skills.

* What Bennett and Adler (1986) refer to as a "media skills continuum", is essentially a basic taxonomy of information skills.

4.2.1 Highlighting information handling skills

The main difference between taxonomies of related skills such as those mentioned above, and taxonomies of information skills, is that the former are wider-ranging taxonomies for the cognitive domain, whereas the latter focus particularly on skills which are directly related to information handling. To illustrate this point, and to provide a foundation for the next section, a simple taxonomy of study skills will be analyzed in order to identify which of the skills can be regarded as relating directly to information handling. The North Westminster Community School in the United Kingdom developed a whole school policy for learning (cited in Hall 1986: 89-93), based on a "check list of study skills" which incorporates information skills (Hall 1986: 91):

1. Self-organisation and planning
2. Finding information and collecting data
3. Using books and other resources
4. Reading skills
5. Listening and viewing skills
6. Speaking skills
7. Note-making and note-taking
8. Using information
9. Presenting information
10. Self-appraisal
11. Examination techniques.

From this check list of study skills, skills numbers two (finding information and collecting data), three (using resources), eight (using information), nine (presenting information), and ten (self-appraisal) are arguably basic information handling skills. However, most of the remaining study skills in this taxonomy could be restated as auxiliary

information skills if the taxonomy was specifically of information skills.

4.2.2 Bloom's taxonomy of educational objectives

Bloom's taxonomy of educational objectives (Bloom 1956; Krathwohl, Bloom & Masia 1964) has had a significant influence on contemporary learning theories and curriculum development. The influence of this taxonomy for the cognitive domain (Bloom 1956) will be apparent in the taxonomies of information skills discussed in section 4.3.

Bloom (1956: 2) defines the cognitive domain as including skills such as "remembering and recalling knowledge, thinking, problem solving, creating". He explains further that educational objectives for the cognitive domain "deal with the recall or recognition of knowledge and the development of intellectual abilities and skills" (Bloom 1956: 7).

The taxonomy of educational objectives in the cognitive domain has six basic elements (Bloom 1956: 201-207):

* **Knowledge:** This involves the recall of specifics and universals, the recall of methods and processes, or the recall of a pattern, structure or setting. Also involved is knowledge of ways and means of dealing with specifics, that is, ways of organizing, studying, judging, and criticizing.

* **Comprehension:** This refers to understanding or apprehension of what is being communicated, and the ability to use material or ideas being communicated without necessarily relating it to other material or seeing its fullest implications. Further skills here are the ability to translate, interpret and extrapolate.

* **Application:** Here the ability to use abstractions in particular and concrete situations is relevant.

* **Analysis:** This refers to the ability to break down communications into constituent elements or parts so that the relative hierarchy of ideas is clear, and the relationships between ideas is made explicit.

* **Synthesis:** This involves the ability to put together elements and parts so as to form a whole; that is, assembling a structure or pattern which was not clearly present before.

* **Evaluation:** This is the ability to make qualitative and quantitative judgements about the value of material and methods for given purposes, and the ability to use standards for appraisal.

Adams and Morris (1985: 30) apply Bloom's categorization to the planning stage of a library skills course for academic credit, and summarize the six categories succinctly within the framework of information handling:

Knowledge - students are able to recall facts and information.

Comprehension - students can interpret, translate, paraphrase information in their own way.

Application - students can apply knowledge in solving problems.

Analyzing - students can study a new situation and derive its major constituents.

Synthesizing - students can put constituents together in a new way.

Evaluating - students can set criteria and make judgements.

The applicability of this taxonomy to information skills is observed by others in the educational field: Kirk (1987: 84), for example, notes that the Canberra Catholic Education Office in Australia has applied resource based learning, in the context of information skills, to Bloom's taxonomy, and thereby identified strategies for resource based learning.

The theory of learning domains developed by Bloom (Krathwohl, Bloom & Masia 1964: 6-7) indicates that learning occurs on three levels:

- * the cognitive domain (intellectual activities, problem solving, knowledge based skills);
- * the affective domain (emotional, attitudinal, motivational needs); and
- * the psychomotor domain (muscular or motor skill, neuromotor co-ordination).

The affective domain of this taxonomy of educational objectives has five main components or levels (Krathwohl, Bloom & Masia 1964: 98-175):

1. Receiving (attending)
2. Responding
3. Valuing
4. Organization
5. Characterization by a value or value complex.

Krathwohl, Bloom and Masia (1964: 27) found that these levels could be ordered in a continuum which describes "a process by which a given phenomenon or value passed from a level of bare awareness to a position of some power to guide or control the behavior of a person". They explain the continuum of the affective learning process as follows (Krathwohl, Bloom & Masia 1964: 27):

[T]he continuum progressed from a level at which the individual is merely aware of a phenomenon, being *able to perceive it*. At a next level he is *willing to attend* to phenomena. At a next level he *responds* to the phenomena with a *positive feeling*. Eventually he may feel strongly enough to *go out of his way* to respond. At some point in the process he conceptualizes his behavior and feelings and *organizes* these conceptualizations into a structure. The structure grows in complexity as *it becomes his life outlook*.

The relationships between the subcategories in the taxonomies of the cognitive and the affective domains overlap (Krathwohl, Bloom & Masia 1964: 49-53). The relationships can be superficially indicated as follows:

Cognitive domain

Knowledge
Comprehension
Application
Analysis, Synthesis
Evaluation

Affective domain

Receiving
Responding
Valuing
Conceptualization
Organization, Characterization

The relevance of these relationships to the information skills taxonomies discussed in this chapter is that the overlap of the affective levels with the cognitive levels indicates that objectives for both domains can be incorporated in curricula. For example, an objective of information skills courses is that the skills learnt can, and should be, transferred to new learning situations by the student. Emphasis on affective components of a course could help to ensure that this is the case. The following explanation of a difference between the cognitive and affective domains illustrates this point:

In the cognitive domain we are concerned that the student shall be able to do a task when requested. In the affective domain we are more concerned that he *does do* it when it is appropriate after he has learned that he *can do* it. Even though the whole ... system rewards the student more on a *can do* than on a *does do* basis, it is the latter which every instructor seeks. By emphasizing this aspect of the affective components, the affective domain brings to light an extremely important and often missing element in cognitive objectives (Krathwohl, Bloom & Masia 1964: 60).

Thus, in using a model of library and information skills as the basis for teaching information handling skills, it would also be necessary to pay attention to the affective domain if the skills are successfully to be learnt and transferred to new situations.

4.3 TAXONOMIES OF INFORMATION SKILLS

Taxonomies drawn up by Marland, the New South Wales Depart-

ment of Education, Eisenberg and Berkowitz, the National Council for Educational Technology (NCET), and Winkworth, are outlined below as representative of the taxonomies of information skills located in the literature. Apart from those singled out here, there are numerous others, some further examples being presented by the Schools Council in the United Kingdom (Great Britain. Schools Council 1981), Haycock (1985), Bjørner (1989; 1991), Tuckett (1989), Wright and Larson (1990), and Van der Walt (1992).

4.3.1 Marland

A taxonomy designed by a working group sponsored by the British Library and the Schools Council (referred to here as Marland's taxonomy; see also chapter 3, section 3.3.2) has provided the foundation for many later taxonomies of information skills. Marland's categorization of skills was proposed for the teaching of information skills in secondary schools, and the nine steps in the taxonomy are expressed in the form of simple questions which a secondary school pupil would ask during any "finding-out" activity.

The tenet of the nine-question taxonomy is that, in "virtually all study activities", specific stages of enquiry have to be worked through and there is a tendency for particular kinds of questions to recur. Marland argues that the nine questions and their accompanying processes are fundamentally the same, whether applied to a primary school project or a PhD thesis (Marland 1981: 14). Briefly, the taxonomy is as follows (Marland 1981: 30-37):

1. What do I need to do?
(formulation and analysis of need)
2. Where could I go?
(identification and appraisal of likely sources)
3. How do I get to the information?
(tracing and locating individual resources)
4. Which resources shall I use?

- (examining, selecting and rejecting individual resources)
5. How shall I use the resources?
(interrogating resources)
 6. What should I make a record of?
(recording and storing information)
 7. Have I got the information I need?
(interpretation, analysis, synthesis, evaluation)
 8. How should I present it?
(presentation, communication, shape)
 9. What have I achieved?
(evaluation).

Marland's nine-step approach has become a classic taxonomy of information skills and is referred to by most compilers of taxonomies drawn up during the 1980's and 1990's.

4.3.2 New South Wales Department of Education

A taxonomy of information skills developed in Australia by the Information Skills Working Party, New South Wales Department of Education, clearly illustrates the process approach, where the main objective is the facilitation and development of skills (Kirk 1987: 86). Six process phases are identified, each with subsidiary process steps:

1. Defining purpose
 - clarify information task
 - review personal skills and knowledge
2. Locating sources
 - develop a manageable search plan
 - gather sources
3. Selecting data
 - locate data in sources
 - assess relevance of data
 - assess credibility of data
 - record relevant and credible data and sources
4. Processing information

- combine data into units of information
 - combine units of information into a structure
 - review structure
5. Presenting information
- decide how to present information
 - present information
6. Evaluating an information task
- review the content of the completed information task
 - review the process phases and steps used in the information task
 - evaluate the learning outcomes of the completed information task.

4.3.3 Eisenberg and Berkowitz

The Big Six Skills approach to library and information skills instruction, developed by Eisenberg and Berkowitz (1990; 1992), is based on a three-level taxonomy which provides a "top-down structure" where concepts are organized from broad to narrow, or from general to specific.

Level 1 is considered as the umbrella level, under which the other two levels are presented. The first level is regarded as the broadest possible level for considering information problems. At this level, Eisenberg and Berkowitz (1992: 28) state that the goals are to teach students to be able to:

- realize that information problems are best solved systematically and logically;
- recognize the information aspects of problems, tasks and decisions.

Level 2 consists of the general information problem solving strategy, comprised of six skills, each of which is necessary to solve information related problems (Eisenberg & Berkowitz 1992: 28):

1. Task definition
2. Information seeking strategies
3. Location and access
4. Use of information

- 5. Synthesis
- 6. Evaluation.

Level 3 identifies two specific components for each of the six skills listed at level 2. The twelve components thus highlighted are referred to as "information acts", which can also be regarded as a series of questions which students ask and answer (Eisenberg & Berkowitz 1992: 29):

Task definition:

- What is the problem to be solved?
- What information is needed in order to solve the problem?

Information seeking strategies:

- What are all possible sources of information?
- What are the best of all possibilities?

Location and access:

- Where are these sources?
- Where is the information within each source?

Use of information:

- What information does the source provide?
- What specific information is worth applying to the task?

Synthesis:

- How does the information from all sources fit together?
- How is the information best presented?

Evaluation:

- Was the problem solved?
- If the problem had to be solved again, what would be done differently?

The Big Six Skills taxonomy thus presents a three tier hierarchy of information skills, with each lower level depending on the upper one in a top-down approach. The third (and lowest) level, which specifies components in a question asking mode, is reminiscent of Marland's nine-step approach.

4.3.4 National Council for Educational Technology

The National Council for Educational Technology (NCET) in the United Kingdom provides a taxonomy of the information handling skills required of pupils by the National Curriculum. The taxonomy drawn up by the NCET identifies nine steps in information handling, lists questions which pupils

Figure 4.2 Information skills and the National Curriculum (NCET 1989)

WHAT PUPILS NEED TO DO	QUESTIONS TO BE ADDRESSED	SKILLS REQUIRED	ABILITIES REQUIRED	UNDERLYING CONCEPTS
<p>Decide What information is needed</p>	<p>Analysis: What am I being asked to do? Why am I being asked to do it? (Purpose) Who will see/use my work? (Audience) How will I present my work? (Form) How long have I got to do it in? How much detail should I go into? What do I know already about the topic? Formulation: What do I need to find out?</p>	<p>Observation Analysis Planning Question formulation Organizing</p>	<p>Reflect Apply former knowledge</p>	<p>The PURPOSE, AUDIENCE and final FORM of a task affects its undertaking and its outcome/s. The time available for the task affects its undertaking and outcome/s Former knowledge has value</p>
<p>Look for the information</p>	<p>What sources of information are there? Where are they located? How accessible are they? How appropriate to my task are they? Where should I go first? Is there anyone who could advise me?</p>	<p>Analysis Appraisal</p>	<p>Be logical Be systematic Show initiative</p>	<p>Subjects create artificial boundaries- there is no such thing as "scientific", "historical" or "geographical" information- there is only "information". Hence, all information is potentially relevant to a task. The appropriateness of information sources depends upon the time available, the detail required, the purpose, audience and form of a task.</p>
<p>Select individual resources</p>	<p>Are they at my level? How appropriate to my topic are they? How accurate/current are they? Are they biased? Which should I use first?</p>	<p>Analysis Appraisal Interpretation Discrimination</p>		<p>Resources may contain relevant information but in an inappropriate form, and vice versa.</p>
<p>Retrieve information</p>	<p>How do I use the resource/s? Are there any aids - such as indexes, contents lists or people - to help me? Is there a sensible order in which to retrieve the information?</p>	<p>Observation Literacy Numeracy Question formulation Reading (in particular) - for meaning - for understanding Analysis Lateral thinking Hypothesis testing Interpretation</p>	<p>Search logically Search systematically Reflect Be flexible Be decisive</p>	<p>Information can be organized and stored in a variety of ways. Information is organized and stored with an audience and purpose in mind. Information is retrieved by putting questions to the resources. The clearer, more precise the question, the more relevant is the information retrieved. The way in which the questions are put to the resources depends upon how the information has been organized and stored.</p>
<p>Process the information</p>	<p>Is the information relevant to my topic? Is the information relevant to the purpose, audience and form of my task? Does it answer my question/s? Does any of the information conflict with what I know already/have found out?</p>	<p>Analysis Interpretation Synthesis Evaluation</p>		<p>Information can be relevant to a topic but not to the aspect of the topic under study. Information can be relevant to the aspect of the topic under study, but not to the purpose/audience/form of a task. Information can be inaccurate or incorrect; openly or covertly biased.</p>
<p>Record the information</p>	<p>What shall I record? How shall I record it? When shall I record it?</p>	<p>Analysis Note-making Graphical drawing Organizing Interpretation Synthesis</p>		<p>Information can be recorded in a variety of ways. The way in which information is recorded can assist in its processing.</p>
<p>Review the task</p>	<p>Have I got enough/too much information? Is it relevant to my topic? Is it relevant to the purpose, audience and form of my task? What do I need to do next?</p>	<p>Interpretation Synthesis Evaluation Planning</p>	<p>Reflect</p>	<p>The amount of information required will depend upon the level of detail needed; the purpose, audience, and form of a task, and the time available.</p>
<p>Present the information</p>	<p>How shall I present it, for my purpose, audience and form? How shall I organize it? What style should I use?</p>	<p>Communication Organization Synthesis</p>	<p>Apply former knowledge</p>	<p>The audience for, and the purpose of, a task, will determine the form in which the information is organized and presented.</p>
<p>Evaluate the task</p>	<p>Have I fulfilled the task? What have I achieved/learned from it which will be of benefit to future tasks?</p>	<p>Analysis Interpretation Evaluation</p>	<p>Reflect Be self-critical</p>	<p>Information is interconnected and so will be relevant to future tasks Tasks are interconnected and so what is learned from one will assist others.</p>

would ask at each of these steps, outlines the skills and underlying concepts relevant to each of the nine steps, and also identifies areas of the National Curriculum which justify and promote these skills (NCET 1989). The NCET taxonomy is a further example of how Marland's approach has influenced later taxonomies.

The full NCET taxonomy (with the exception of the last section, which outlines how the skills teaching slots in with the National Curriculum) is reflected in Figure 4.2. In abridged form, the NCET taxonomy of information skills is:

WHAT NEEDS TO BE DONE	SKILLS REQUIRED
Decide what information is needed	Observation Analysis Planning Question formulation Organizing
Look for the information	Analysis Appraisal
Select individual resources	Analysis Appraisal Interpretation Discrimination
Retrieve information	Observation Literacy Numeracy Question formulation Reading (in particular) - for meaning - for understanding Analysis Lateral thinking Hypothesis testing Interpretation
Process the information	Analysis Interpretation Synthesis Evaluation
Record the information	Analysis Note-making Graphic drawing Organizing Interpretation Synthesis

Review the task	Interpretation Synthesis Evaluation Planning
Present the information	Communication Organization Synthesis
Evaluate the task	Analysis Interpretation Evaluation

The clear tabulation of the nine steps of this taxonomy, together with the questions to be asked and the identification of the actual skills involved, makes the NCET taxonomy one of the most useful to date.

4.3.5 Winkworth

A further taxonomy, and one which outlines the information handling skills in particular detail, is that drawn up by Winkworth (1977), prior to the time that the concept of information skills had become common usage. Winkworth's taxonomy was compiled on the basis of skills identified by Lowrie (1970), Polette (1973), Johns and Fraser (1974) and Reed (1974), and provides a categorization of what Winkworth called, at that time, "thinking and learning skills". The taxonomy also indicates the different educational levels at which each skill can be taught, and later reinforced, in the school curriculum in the United Kingdom.

Winkworth's taxonomy (with the exception of the school levels) is reproduced in Figure 4.3. In brief, the six main steps of this taxonomy are (Winkworth 1977: 5-6):

1. Define subject
2. Locate information
 - (i) Locate material in library
 - (ii) Locate information in materials
 - (iii) Locate information outside library and school
3. Select information
4. Organize information

5. Evaluate information
6. Communicate results.

Winkworth's six-step approach is segmented into two subsidiary taxonomies. The first identifies particular study skills (the selection and evaluation of materials); the second lists particular library skills (the location of materials and information). The separate identification of specific library skills in Winkworth's taxonomy is most useful, since later taxonomies (such as those reviewed under sections 4.3.1 to 4.3.4) concentrated on information skills in general, without identifying library skills separately. There is heuristic value in Winkworth's specification of skills, since by subsuming library skills under generic study skills he has provided a new universe of discourse within which library skills could be investigated.

4.3.6 Evaluation

Although the five information skills taxonomies outlined here have differing stages, or differ in the number of steps required, all five cover the same ground in that they outline the procedure for handling information. The procedure for handling information is the same regardless of the situation in which the skills are being practised. An information skills model, therefore, should be relevant wherever information is being handled, for example in situations where the information usage is related to study requirements for educational purposes, or to problem solving in daily living, or to decision making in the work place. This point is important for the applicability of the information skills typology which is developed in this chapter (and the library and information skills model which is drawn up in chapter 5), since they can be seen as more relevant in a wider everyday context than taxonomies such as those which specify study skills or learning skills, both of which would be seen as relevant essentially only in the educational arena. Furthermore, information handling skills are not restricted to

Figure 4.3 (continued)

<p>3. Select Information</p>	<p>Identify purpose for acquiring information</p> <p>Formulate questions requiring answers.</p> <p>Skim to see if material contains answers to questions.</p> <p>Special skills selecting information from audio-visual materials, eg listening skills, interpreting visual information, knowledge of symbols etc.</p> <p>Re-study and select relevant information.</p>	
<p>4. Organize Information</p>	<p>Take notes, grouped under headings derived from formulated questions.</p> <p>Note down sources information.</p> <p>Define unknown words</p>	<p>Compile bibliography.</p> <p>Use dictionaries.</p>
<p>5. Evaluate information</p>	<p>Evaluate accuracy and authority of source.</p> <p>Understand what information means.</p> <p>Distinguish between: fact and opinion; fact and fiction; relevant and irrelevant; essential and non essential.</p> <p>Compare information drawn from more than one source.</p> <p>Relate information to what is already known.</p> <p>Draw references, make generalizations, conceptualize.</p> <p>Reach tentative conclusions.</p>	<p>Use copyright date: reference sources to check author's qualifications, etc.</p>
<p>6. Communicate results</p>	<p>Organize information under main headings; determine sequence.</p> <p>Make outline (avoid copying directly from sources, acknowledge quoted materials, use footnotes).</p> <p>Pay attention to style and vocabulary.</p> <p>Use of illustrative materials.</p> <p>Proof-read and revise.</p>	<p>May include skills in making a-v materials.</p>

using information stored in libraries, but are applicable to the utilization of information from any resource.

The five taxonomies reviewed in this section cover the same ground in that they all classify information handling skills. However, they use differing approaches, and vary in depth of explanation. Certain features of each of the approaches are commendable, for example Marland's question-asking approach, the clear evidence of a process approach in the New South Wales Department of Education taxonomy, the tiered structure of Eisenberg and Berkowitz, the clear tabulation and detailed explanations in the NCET taxonomy, and Winkworth's subsuming of library skills under particular study skills. Useful features, as well as those appropriate for a wide audience (one not restricted to university students), were used as suggestions and inspiration in deciding on the form that the proposed typology of information skills would take.

4.3.7 Additional aspects

Before the typology is compiled to provide parameters within which information skills (and eventually library skills) can be considered, two additional aspects need to be alluded to. First, levels of learning as they relate to Bloom's taxonomy will be considered in more detail, for example whether information handling skills relate to the cognitive domain alone, or whether the affective and psychomotor levels of learning also feature. At the same time, the application of other learning theories to information skills teaching will be mentioned. Second, information skills are necessary as a result of the complexity of the information phenomenon. An understanding of this phenomenon would entail one having an "information awareness" (which is an aspect of the affective domain) in order to appreciate the necessity and value of the skills, and subsequently to practise them effectively.

These two issues are included here since they need to be investigated in depth when considering the objectives of teaching information skills, and developing a curriculum. However, since the development of an actual curriculum of information skills does not fall within the ambit of the research reported here, sections 4.4 and 4.5 merely provide an overview of the issues. These two sections make no claim to being either comprehensive or evaluative. The heuristic value of the ultimate model of library and information skills is that it could generate questions with regard to these issues.

4.4 APPLICATION OF LEARNING THEORIES

The five information skills taxonomies discussed earlier cover the six elements of Bloom's theory of learning for the cognitive domain: knowledge, comprehension, application, analysis, synthesis and evaluation. These feature in the stages or steps of the five representative taxonomies. Although the taxonomies stress the cognitive skills involved - Krathwohl, Bloom and Masia (1964: 8) found that the majority of teaching objectives fall into the cognitive domain - the affective and psychomotor skills also need to be considered, since learning occurs on all three levels.

The definition of information literacy composed by Tessmer (cited in Breivik 1985: 723), referred to in section 2.3.2 of chapter 2 as being one of the most detailed expositions of the concept, bears repeating here, since it illustrates that all three domains of behaviour are important in handling information:

General definition: Information literacy is the ability to effectively access and evaluate information for a given need.

Characteristics of information literacy:

- an integrated set of skills and knowledge
 - skills (research strategy, evaluation)
 - knowledge of tools and resources
- developed through acquisition of attitudes
 - persistence

- attention to detail
- caution in accepting printed word and single sources
- time and labor intensive
- need-driven (a problem-solving activity)
- distinct but relevant to literacy and computer literacy.

Information literacy is not:

- (only) knowledge of resources
- library dependent (as sole source)
- information finding (also understanding and evaluating).

The cognitive skills necessary for information literacy are evident in this definition (for example, understanding and evaluating). However, note should be taken that "attitudes" and "need driven" relate to the affective domain, and any actual physical steps taken in applying one of the skills would relate to the psychomotor domain. Jakobovits and Nahl-Jakobovits (1987: 204) illustrate, with very basic examples relating to library use, that all three domains are involved in information handling:

"Having an information need" is classified as an affective behavior. "Knowing where and how to find information" is a cognitive behavior. "Performing the physical steps" are behaviors in the psychomotor domain. In particular, consider a user who is looking through a periodical index and intentionally forces the eyes to run down the list of authors without skipping. "Persevering in an intention" is an affective skill. "Decoding the meaning of the content read and evaluating its relevance" are cognitive skills: the user sees a name and decides to look it up. "Hand-eye coordination, postural adjustments, and accuracy" are psychomotor skills: the user writes down the reference and resumes visual inspection of the index.

The involvement of all three domains in information handling skills has been researched in depth by Nahl-Jakobovits and Jakobovits (1985; 1990; and Jakobovits and Nahl-Jakobovits 1987). Several others have also researched the issue, with Wright and Larson (1990) using a matrix to identify conceptual gaps in existing information skills courses. They subsequently developed a curriculum that includes objectives in all three learning domains. Kuhlthau (1988) considered both

cognitive and affective aspects in developing a model of the library search process. Bourne (1990) examined the use of computer-aided instruction (CAI) in user education or information literacy programmes, in the light of affective and cognitive learning theories.

Mellon (1986) investigated the impact of "library anxiety" on students undertaking library research, concluding that feelings of inadequacy in library skills have a negative effect on learning. Since feelings of inadequacy fall within the affective domain, the grounded theory of library anxiety constructed by Mellon has implications for the teaching of information skills.

The application of cognitive and behaviourist learning theories to library skills in particular is discussed by several authors, for example Aluri and Reichel (1984), Coughlan (1989), and McNeer (1991). Apart from the literature which deals essentially with the cognitive theory and behaviourism as they relate to information handling skills, there is abundant literature on the application of other learning theories, some of this research pre-dating the use of the concept of information skills. Ford (1979), for example, investigated numerous learning theories, drawing several elements together in order to propose a theory of "library learning". Kumar and Kumar (1983) and Fleming (1986) discussed the importance of placing user education on a sounder footing by integrating various learning theories. Lukenbill (1989) investigated learning theories which have an impact on library and information skills instruction, concentrating on authorities from the behaviorist school (such as Skinner, Spense and Gagné), and the cognitive theories of the Gestalt field family (such as Bigge and Bruner). Aluri (1981) covered the application of three learning theories (namely cognitive, conditioning and cybernetic learning perspectives), to instruction in library use. Several other researchers, for example Miller (1982), Surprenant (1982) and Hanson (1985), have investigated various learning theories (including those of Gagné and

Bruner), for applicability to information handling skills. Tuckett and Stoffle (1984), Yee (1989) and Ford (1990) provided overviews of several learning strategies and styles, with a view to their applicability to information handling skills.

The issue of whether student librarians should study learning theories as part of their curriculum in preparation for user education (and, by implication, information skills teaching) has been discussed in the literature recently (Shirato 1991). Thus there appears to be an acknowledgement that librarians could be underprepared at present with regard to the didactic aspects of presenting information skills programmes.

4.5 INFORMATION AWARENESS

As discussed in chapter 1, the society in which we live today is regarded as an information society - a society in which information permeates our everyday living. If skills for the handling of information are to be taught, they need to be placed within the context of what is understood by information - for, without information, there would not be a need to have skills for coping with it. Gawith and Irving (cited in Gawith 1986: 87) touch on this aspect in noting that were it not for information, there would be no need for the skills, systems and technologies whereby it is exploited, and they propound that "the information horse should be placed firmly in front of the ... cart". Any study of information skills should therefore be preceded by a study of the information phenomenon: what information is, how it is created, how it is structured and stored, and how its application becomes an integral aspect of problem solving and critical thinking.

Early researchers in the user education/information skills field, such as Winkworth (1977) and Irving and Snape (1979), had found a total lack of information awareness in school

pupils and in the wider sphere of the community. Gawith (1986: 90) describes this lack of information awareness as "the tendency to zoom in on the skills needed to process and use information rather than looking at the information itself, its scope and properties". Gawith also noted the importance of appreciating the social dimension of information.

Any model of library and information skills drawn up for the purpose of teaching such skills should thus take cognisance of the information phenomenon which provides the universe of discourse, or the framework, within which the skills are to be practised. This implies that an information skills curriculum would need to incorporate - indeed, be based upon - the teaching of what information is, and what can be done with it.

In explaining the concept of information awareness ("inligtingbewusmaking"), Fouché (1985: 59) gives an indication of what a knowledge of information awareness would entail. The final point below relates to the application of information skills:

- * being aware of one's latent information needs;
- * being aware of the role and value of information, not only for decision making and problem solving in the work situation, but also for increasing the quality of personal and communal life in many spheres;
- * being aware of existing sources and channels of information, including governmental information;
- * being aware of, and familiar with, the new information technologies; and
- * being aware of the intellectual skills of selection, interpretation and evaluation which are required for the utilization of the flow of information.

Information awareness would also incorporate an understanding of what has been referred to as "information complexity" by Burns (cited in Zurkowski 1981: 1383), the associate publisher of *The Minneapolis Star/Tribune* company in the USA:

[I]nformation complexity mean[s] misinformation, good information, assumptions masquerading as fact, actual falsehoods, puffery as well as generally accepted facts all mixed together, all coming at us constantly from many sources for many purposes. We need to be skilled in handling information complexity and in recognizing the content that is real and meaningful for us.

The problems surrounding "information complexity" could be related to objectives for the affective learning levels, as discussed in section 4.2.2.

Information awareness would be essential for the creation of the "learning society", where people are prepared for lifelong learning (see chapter 2, sections 2.2, 2.2.1 and 2.3.2). Fink (1989: 1) suggests that today information is considered as an end in itself, and warns that the distinction between information and knowledge is often disregarded.

By viewing the information phenomenon as the universe of discourse within which information skills are practised, the student will also become familiar with the characteristics of the information society. Information awareness would provide the impetus for the student to become an independent and lifelong learner, one who is aware of how, by using information as a tool, he will be capable of functioning effectively as a member of this constantly changing society.

4.6 THE PRO TYPOLOGY OF INFORMATION SKILLS

A typology of information skills, referred to as the PRO (Planning, Retrieving, Organizing) typology of information skills, was compiled. This typology is based on the skills identified in existing taxonomies of information skills and

related skills, and is reflected in Figure 4.4. The PRO typology is presented with a view to the later identification of particular library skills which are intrinsic to the typology. After library skills *per se* have been discussed and identified in chapter 5, these skills will be incorporated where they belong in the PRO typology, thereby providing the PRO model of library and information skills. The heuristic value of such a model was argued in section 4.1.1.1.

4.6.1 Main stages

The typology depicts three main stages for the handling of information, namely:

- * the planning for information usage stage;
- * the retrieval of information stage; and
- * the organization of information stage.

4.6.2 Subsidiary steps

The three stages have subsidiary steps, which reflect the step-by-step process which one goes through in handling information effectively. The steps are:

1. Defining the information task
2. Deciding on a search strategy
3. Locating relevant sources
4. Selecting the information
5. Evaluating the located information
6. Synthesizing the information
7. Presenting the information task
8. Evaluating the completed task.

4.6.3 Questions

For each of the eight steps, the typology includes questions which reflect the cognitive process of information handling. The questions are intended to initiate systematic and critical thought processes during the carrying out of an information task, thereby ensuring a logical problem solving approach to information handling. These questions also indicate the stage(s) at which information will need to be gathered, and indicate where in the typology library skills will become relevant.

4.6.4 Framework of information awareness

Taught within a conceptual framework which provides the learner with an information awareness, the steps in the typology are to be seen as problem solving skills which are transferrable to any situation where information is utilized. The typology follows the process approach and as such provides a behavioural paradigm of information skills. The use of the typology for curriculum purposes is dependent on the information skills being considered within the framework of an information awareness.

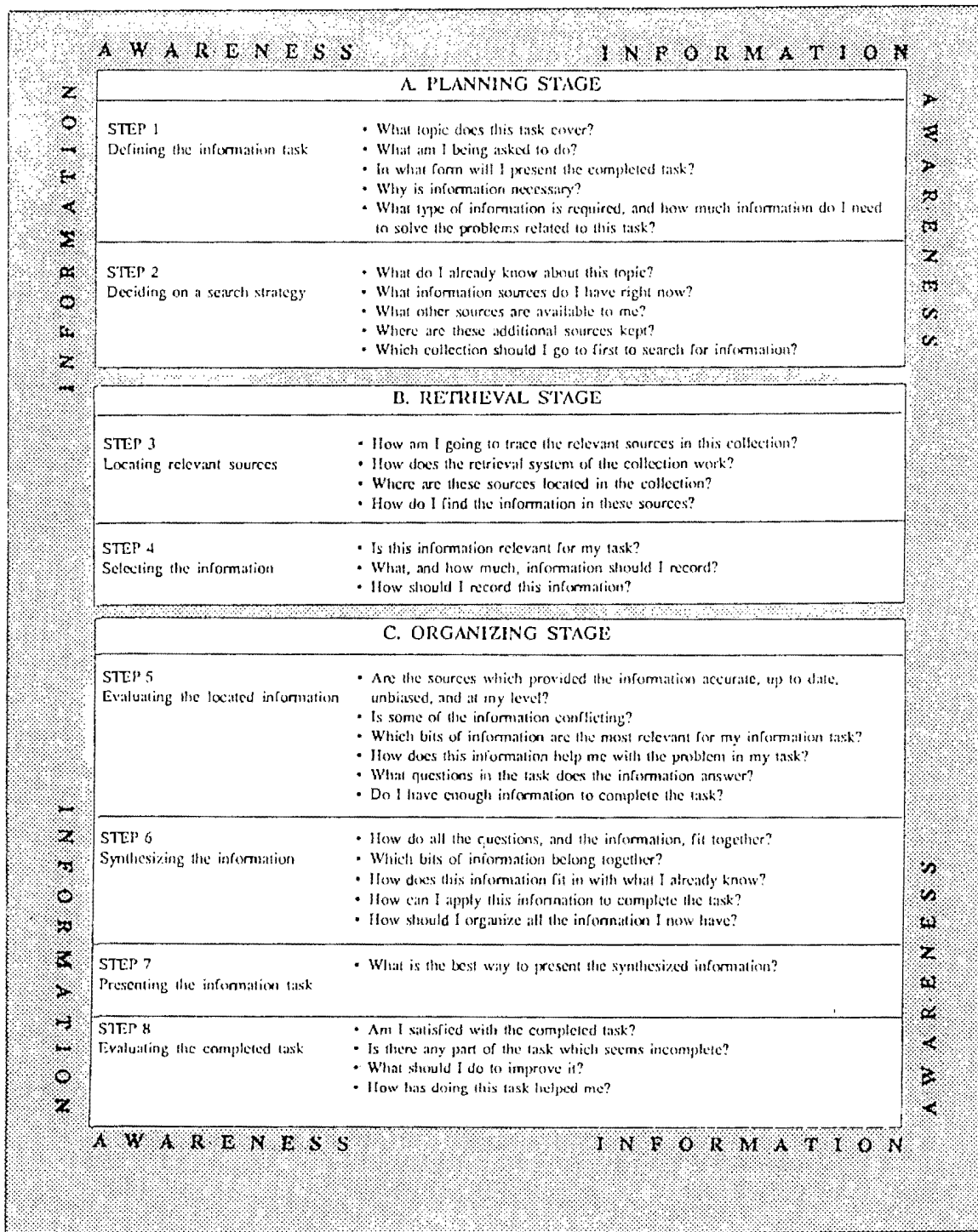
4.7 CONCLUSION

A consideration of existing taxonomies of information skills has helped to identify the skills which are required in order to handle information effectively. It has been noted that, although information skills taxonomies reflect mainly activities in the cognitive domain, it is also necessary to take into consideration the affective and the psychomotor domains if an effective model (one which could form the basis for developing a curriculum for library and information skills) is to be compiled. Such a model is operable within the framework of a knowledge base of the information phenomenon. The successful application of information skills

is contingent upon an information awareness.

The PRO information skills typology was thus compiled to illustrate the entire realm of information handling skills. It is necessary at this point to investigate what is understood by library skills, so that these can be incorporated in the typology. The following chapter covers this aspect.

Figure 4.4 PRO typology of information skills



CHAPTER 5

LIBRARY SKILLS

5.1 INTRODUCTION

Up to this point, the investigation has centred on information literacy and the general information handling skills which it requires. The PRO typology which was drawn up in chapter 4 outlines the various information handling skills identified thus far. The present chapter now investigates library skills with the intention of indicating how these skills can be slotted into the PRO typology. The result of this will be a model of the library and information skills which a university student needs to master in order to be regarded as information literate.

The approach is to first look at the concept of library skills and its related terminology, since the use of varying terms to describe library skills has resulted in a lack of clarity as to what library skills actually are. The rationale for teaching library skills at tertiary level will then be explained. This is followed by an overview of surveys which investigated the attitudes of university lecturers towards the teaching of library skills to undergraduates. The various types of user education programmes which teach library skills at university level are then explained, followed by the identification of the library skills which are taught in such programmes. These library skills are finally incorporated in the PRO typology, and the chapter concludes with a model of library and information skills.

5.1.1 History of user education

The history of user education has been well documented, with

several authors tracing its origin to the previous century. An early reference to what was to become known as user education was made by Melvil Dewey in 1876, when he contrasted librarians of old (the keepers of books) with the (then) modern idea of librarians encouraging patrons to read books selected by themselves (Dewey 1876: 6). Along similar lines, Hopkins (1981: 175) suggests that user education arose in the 19th century in order to help inexperienced patrons use libraries which were organized for the scholarly elite. Hopkins (1982: 192-193) also traces the history of user education in the USA, noting its origin in an educational revolution in the 1870's and its decline by the time of World War II.

The historical development of user education for students at tertiary level is covered by Pugh (1970). Although user education is not a new issue, interest in it heightened 30 years ago when a period of rapid development began in academic libraries (Baker 1989: 312; Harrison 1990: 43). Staines (1990) notes the progress in user education programmes from this time: starting as simple library tours for orientation; gradually being enhanced by mediated components such as slide-sound programmes and videos; and recently, moving on to course integrated instruction.

The emphasis on user education issues which started growing in the 1960's is evidenced in the amount of literature on the subject emanating from this time onwards. For almost two decades, *Reference services review* has published annual reviews of the literature. The most recent of these reviews provide an indication of the extent of the writings on user education:

- 1987 - 130 references (Rader 1988)
- 1988 - 149 references (Rader 1989)
- 1989 - 158 references (Rader 1990c)
- 1990 - 132 references (Rader 1991b).

Bracken and Tucker (1989) undertook a bibliometric study of

the literature on user education. The project identified the core journals for the subject, but also found that the literature is insular from other disciplines as well as from the larger field of librarianship. Jacobson and Vallely (1992) analyzed articles on bibliographic instruction (that is, user education) to establish the extent to which the issue was written about by lecturers, as opposed to librarians: of the 74 articles analyzed, only eighteen were written by lecturers, and of these the authors regarded only three as positive. The insularity of the user education literature from outside influences is typical of library science literature in general (see, for example, LaBorie and Halperin (1976) and Peritz (1981)). However, in this instance, it is of particular concern in view of several aspects (including the necessity of a partnership between librarians and lecturers, and the need for interdisciplinary research), if the role of library skills within the learning process is to be taken seriously by educators.

5.2 TERMINOLOGY

The concept "user education" in earlier chapters refers in general to programmes for the teaching of skills which are specifically library related. Since library skills are the central issue in this chapter, an analysis will be done of the concepts of user education and library skills, and several other terms used to refer to the teaching of skills which are library related. The associated terminology in this area is extensive. Some authors and practitioners regard all terminology as synonymous, while others suggest there is a hierarchy in that certain terms denote specific levels of user education. Most often, terms are used indiscriminately, and there is much terminological inconsistency in this field.

It is noticeable that the literature provides very few definitions, except for the newer concepts of information literacy and information skills. In view of the plethora of

literature on user education, the lack of clear definitions is conspicuous by its absence. Laburn (1984: 93) remarked that "user education has many more names than it has definitions". Terminology used in the user education field includes:

- user education
- book education
- reader education
- reader guidance
- reader instruction
- user instruction
- user training
- user guidance
- media user guidance
- library use instruction
- library instruction
- library education
- library skills
- library research skills
- library literacy
- library orientation
- bibliographic instruction
- information skills
- information literacy.

The most commonly used terms are **user education, library instruction, library orientation, library skills, library literacy, bibliographic instruction, information skills and information literacy**. Conceptual analyses of "information literacy" and "information skills" were undertaken in earlier chapters. These two concepts denote a broad range of information handling skills (including library related skills), and it has become apparent that information handling skills are not necessarily library dependent. If the terms most commonly used in relation to user education and library skills are analyzed, it should become apparent whether any of these are synonymous with either information literacy or information skills.

5.2.1 User education

User education has traditionally been regarded as an umbrella concept which covers other terms related to skills in using a library. A standard subject dictionary for the discipline of Library and Information Science, *Harrod's librarians' glossary and reference book of terms used in librarianship, documentation and the book crafts* (Prytherch 1987), includes only the concept of user education. None of the remaining terminology listed earlier is included or even obliquely recognized by means of cross references. The dictionary (Prytherch 1987: 824) provides the following definition of user education:

A programme of information provided by librarians to users, to enable them to make more efficient, independent use of the library's stock and service. A programme of user education might include tours, lectures, exercises and the provision of support materials.

A similar definition is provided by Fleming (1990: ix):

User education can be defined as various programmes of instruction, education and exploration provided by libraries to users to enable them to make more effective, efficient and independent use of the information sources, resources and services to which these libraries provide access.

Ochoggia's (1990: 105) definition is also similar:

User education is that part of instruction given to the users of the library to help them make maximum use of the library resources. It equips the user with the necessary skills required to exploit a library's holdings fully.

These current definitions indicate that user education relates particularly to instruction provided by a library for its users, and specifically to the programmes which are used to present such instruction. The definitions note that the purpose of user education is to make patrons effective, efficient, and independent library users. Although the third definition mentions "necessary skills", none of the defini-

tions indicate what skills need to be taught so that the objectives of the programmes can be attained.

User education is therefore seen as a broad term used to denote the instructional activities provided by a library to assist its users in utilizing the library. Current definitions of user education still concentrate on the effective use of the library, and not on the effective utilization of the information to which the library provides access. In chapter 3 (section 3.5), it was argued that, during the 1980's, user education programmes were no longer aiming only at teaching users how to locate information in a library, but had started progressing towards the teaching of the broader range of information skills.

It would seem that the meaning of user education (in its traditional sense) could become outdated due to the broader objectives the concept is attempting to embrace today. Since the user education field appears to be going through a renewal stage at present, owing to librarians' intentions to embrace the wider notion of information skills teaching, the concept of user education might eventually become obsolete and be replaced by the newer terminology of information literacy or information skills - neither of which have the limiting connotation of library use. However, the acceptance of this broader meaning would depend on how successful librarians are in attaining the wider objectives of educating for information literacy.

5.2.2 Library instruction

Library instruction is used in a generic sense in the literature to refer to a variety of methods of providing user education. Rice (1981: 5-8) used the concept in this general sense, and divided library instruction programmes into three levels: library orientation, library instruction, and bibliographic instruction. He saw library instruction as detailed explanation about particular library sources and

facilities, often concentrating on specific subject fields, and possibly course related (Rice 1981: 6). Library instruction is thus a fairly broad concept, seemingly synonymous with user education.

5.2.3 Library orientation

Library orientation is generally accepted as referring to a programme aimed at familiarizing users with the services and facilities of a particular library. Renford and Hendrickson (1980: p. 184) define library orientation as "activities that introduce patrons to the facilities, services, and policies of the library", and give as typical examples guided and self-guided tours. Rice (1981: 5) regarded library orientation as the most basic level of library instruction.

Wheeler (1988: 10) suggests that orientation to something implies the assumption of prior experience with, and possibly also mastery of, the entity: "Orientation generally assumes knowledge of how to use what basically is merely a new example." Library orientation in this sense of the word would then imply that no further guidance is necessary. This could apply, for example, to certain new users of a university library (such as academic staff or postgraduate students). However, most university library orientation programmes represent only the most basic programme provided by that library, this programme being supplemented by one or more other programmes of a more advanced nature.

Library orientation could therefore denote a programme aimed at familiarizing new patrons (who already possess the knowledge and skills which enable them to use a library) with that particular library's services and facilities. Alternatively, library orientation could denote a basic level of introducing library skills: the orientation is only the first introduction to one particular resource (the library), to be followed by more advanced programmes aimed at develop-

ing the knowledge and skills required to actually make use of this particular resource. With either choice, library orientation does not go beyond introducing users to a library.

5.2.4 Library skills

Traditionally, library skills refer to those skills which are needed to use a library: location skills such as using a card catalogue to find a book, or using an indexing journal to find periodical articles on a particular topic. Thus, following the traditional meaning, library skills extend no further than gathering the information; how to use this information does not fall within the realm of library skills.

In discussing the wider concept of information skills which had recently come into regular use, Irving (1985: 23) re-examined the concept library skills, and noted that

library skills ... is a narrow term which has failed to relate thinking and communicating to the activity of retrieving information from a library ... it is what an individual *does* in relation to information that distinguishes the result as good, bad or mediocre.

However, the progression of user education has influenced the meaning attributed by some authors and practitioners today to the concept. In considering the broader view of library skills which has emerged as a result of the information literacy movement, Kuhlthau (1987b: 15), for example, suggests that library skills has two components - the traditional location skills, and interpretation skills:

Interpretation skills involve how the information is used after it is located. Thinking about information, seeking further information based on expanding thoughts, and preparing to present information to others incorporate a sequence of interpretation skills. Recalling, summarizing, paraphrasing and extending are interpretation skills ... Interpretation involves meaningfully processing information ... Critical thinking is involved in interpretation.

The expansion in the meaning of library skills (from simple location skills to the inclusion of interpretation skills) is evident too in Bell's (1991: 2) division into two components, namely technical skills and conceptual skills:

The technical skills are concerned with knowledge and use of the catalogue, types of sources, classification, and library terminology. The conceptual skills are those of search retrieval, critical thinking, analysis, synthesis and evaluation of literature and information.

It appears, therefore, that at present there are two schools of thought as to what the concept of library skills encompasses:

- * Library skills are those skills which are required in order to use a library to locate information; or
- * Library skills are those skills which are required in order to use a library to locate information, as well as those skills which are necessary in order to utilize this information effectively.

It could be argued that the concept of library skills essentially limits its scope by the presence of the term "library", thus restricting the skills to location skills necessary for finding information in a library. This dilemma was one of the main reasons for the preference given to the concept information skills, as Irving (1985) had noted. A reason why the dilemma continues today could be due to librarians embracing the wider meaning of information skills, and then constraining this within the narrower parameters of library skills, without analyzing whether the gamut of information skills are indeed all library related.

5.2.5 Library literacy

The concept of library literacy is usually used in conjunc-

tion with the concept of library skills, the possession of the latter being a prerequisite for the attainment of the former, just as a mastery of information skills is a prerequisite for information literacy. In the context of academic libraries, Bell (1990: 32) explains that

library literacy refers to the acquisition of a range of skills relating to identification of and familiarity with sources and information seeking processes.

Greer, Weston and Alm (1991: 551) cite the *Colorado Academic Library Master Plan* which outlines four components of library literacy:

1. knowledge of the function and use of information sources
2. ability to select relevant information
3. knowledge of the physical arrangement of materials
4. knowledge of the options available for using local, state, regional, and international systems.

These two explanations are consistent with the more traditional meaning given to library skills, in that they concentrate on the location of information but stop short of the interpretation/utilization of the information. Fatzer (1987: 314) suggests that library literacy should not be seen as the presence or absence of basic skills, but should rather be regarded as progressive levels of increasing sophistication in the use of a library, the levels leading to ultimate self sufficiency. She identifies four stages in library literacy:

1. prelibrary-literacy, when a user cannot find a book in the catalogue or on the shelf without assistance;
2. semilibrary-literacy, when the user can find some books independently, and some articles in general indexes;

3. library literacy, when the user can follow a systematic search strategy to locate and evaluate the most relevant information on a topic in a given field; and

4. library fluency, when the user understands patterns of scholarly communication and publication in various fields, and is capable of modifying a search strategy to satisfy varying information needs.

The third and fourth levels suggested by Fatzer move beyond the traditional library literacy represented in the first two stages, and thus reflect the modern approach to user education and the second school of thought on library skills. Fatzer continues by mentioning Tessmer's (Breivik 1985: 723) definition of information literacy (discussed in chapter 2, sections 2.3.2 and chapter 4, section 4.4), noting that the difference between library literacy and information literacy is that the latter "goes beyond library dependence" (Fatzer 1987: 314).

Like its related concept of library skills, library literacy at present appears to have two schools of thought as well as to what it encompasses. The more traditional line would be to restrict the "literacy" to the mastery of skills which are library dependent; the more modern school of thought is one where the "literacy" includes mastering higher level skills such as evaluating information. However, library literacy does appear to limit its scope by the presence of the word "library", thus denoting a mastery of skills which are restricted to library use.

5.2.6 Bibliographic instruction (BI)

The concept of bibliographic instruction (usually abbreviated to BI) is used mostly in the USA (Peeters 1991: 188), and particularly in academic libraries. It is seen by some to be synonymous with many of the other terms listed

above, and by others to be a narrower term in that it denotes a more specific, subject related programme of user education. Kennedy (1984: 205) follows the first option:

Bibliographic instruction ... is sometimes thought of as synonymous with library orientation, library instruction or user instruction, or as embracing a combination of the library tour and instruction in use of significant references.

Mensching (1989: 4) describes BI as "the teaching of information-seeking processes and the organization and services of libraries", a description which would fit concepts like user education, library instruction and library skills as well.

Writing at a time before the concept of BI come into common usage, Rice (1981: 7-8) regarded it as the highest level of library instruction:

Bibliographic instruction is the process of teaching a more sophisticated and advanced level of literature searching. Rather than teaching only the use of tools, it attempts to provide a comprehensive approach to research methodology via the library (Rice 1981: 86).

He suggested that at the BI level, users are "occupied in the learning process for a much longer time" than they are with library orientation and library instruction, and that BI courses are often credit bearing (Rice 1981: 86). The attributes of advanced level, length, and credit bearing are recognizable in much of the literature describing specific BI programmes, but the programmes remain library based. Like the other concepts discussed earlier, bibliographic instruction's very name appears to restrict it to library related instruction, "bibliographic" being a term usually associated with libraries or, more particularly, the literature made accessible by libraries. However, some of BI's attributes (as evident in literature perused for section 5.5) indicate that at the more advanced levels, some of the programmes do move beyond being library dependent. There

thus also appears be two schools of thought today as to the level of skills taught in BI programmes.

5.2.7 Discussion

This investigation of the varied terminology related to user education has made two things apparent: first, with only subtle differences, all of the concepts refer to instructing library patrons in the effective utilization of a library's sources, services and facilities, with such instruction being at varying levels of sophistication; second, the terminology appears to be in a state of flux. It appears that the new concepts of information skills and information literacy have exacerbated a situation where lack of standard definitions has resulted in a terminological quagmire. In spite of the attempt of the Association of College and Research Libraries (ACRL) (which is affiliated to the ALA) to standardize the vocabulary in the user education field two decades ago (ACRL 1979: 57-60), the American literature especially suffers from terminological confusion.

In a volume of *The reference librarian* dedicated to integration of library skills programmes into the mainstream of university students' curricula, Breivik (1989b) touched on the terminology problem. In discussing the issue that national educational reform in the USA had largely ignored the role of libraries, and suggesting that this might have been due to educational leaders' lack of perception that libraries and librarians had something worthwhile to offer in the educational reform process, Breivik (1989b: 8) notes:

Even our current terms of bibliographic and library instruction reinforce the perception of something which stands alone from the curriculum and that is useful only within libraries. Yet for years our better programs have focused on search strategies which lead to needed information, whether housed in a library or elsewhere.

Breivik suggests that, although user education programmes

could contribute substantially to curricular objectives, the narrow perception of the concept has been detrimental. Arp and Wilson (1989: 26) are of a similar opinion, noting that the lack of support from university administration and lecturers for the inclusion of user education as part of a student's general curriculum, could be due to librarians' inconsistent and indiscriminate use of varying terminology .

The advent of the information literacy movement has worsened the terminology problem. The library profession's adoption of the idea of information literacy has increased the confusion resulting from the existing myriad of library instruction related terms. McCrank (1991: 41) criticizes librarians for embracing the teaching of information literacy, citing several reasons why he believes they are not yet ready to do so, one reason being their "constantly changing terms used to describe instructional goals ... orientation, library skills, bibliographic instruction, research ..." and now information literacy.

The points made in the three sources cited above have bearing on an important issue in this thesis. The terminology related to user education could be to the detriment of any attempts librarians make to provide information literacy education, or to form partnerships with lecturers in developing information skills curricula.

5.2.7.1 Dilemma: the restriction of "library"

There is uncertainty as to exactly which skills are to be regarded as library skills: only those which are distinctly library related, or also the higher level interpretation and utilization skills which the student requires for organizing the retrieved information in order to increase his knowledge?

The conceptual analyses of terminology, notably of the concepts of library skills, library literacy and BI, have shown

that there is an inclination in user education programmes towards including the organization stage of the PRO information skills typology. That is, the intention of today's user education is to include the teaching of higher level skills involved in evaluating and synthesizing the located information. However, there could be a gap between rhetoric and practice in this regard, and a number of questions arise. Unless these higher level skills are taught - and their mastery assessed - within a formal curriculum which requires a student to apply the skills in a relevant problem solving activity (such as a library research based assignment on a topic within a subject course), how can the student's competence be assessed? And by whom is this assessed: the librarian, the lecturer, or both? Once the information which was located in the library is utilized by the student outside the library, are the skills which are being applied at that further stage still library skills? Furthermore, even basic location skills like using a catalogue need not be practised in the library itself: for example when it is possible to use an OPAC (Online Public Access Catalogue) from terminals which are outside the library building.

Most important, the "information" part of "information literacy" and "information skills" is not necessarily library originated, as is argued in chapters 2 to 4.

Questions such as these indicate how the term "library" effectively narrows the field for librarians wishing to teach a broader range of information handling skills.

5.2.8 Conclusion

Since the concepts analyzed here all remain confined to a library situation, they cannot be regarded as synonymous with the wider ranging concepts of information literacy and information skills. However, it does seem that the library related skills are an important part of information handling skills, since they supply a knowledge of where and how to

look for information which will solve an information task.

5.2.8.1 The next step

The discussion proceeds with an investigation of the ways in which library skills are taught at university level. First, though, there are two aspects which provide background to the library skills teaching issue: the rationale for teaching library skills, and the way in which the attitudes of lecturers towards library skills affect the teaching of these skills.

5.3 RATIONALE FOR TEACHING LIBRARY SKILLS IN UNIVERSITIES

The importance of students possessing skills in information handling was discussed earlier in the light of the needs of today's society which calls for lifelong learning skills, and the role of universities in preparing students as independent, lifelong learners (see chapter 1, section 1.1 and chapter 2, section 2.2.1). The goal of the information literacy movement is to produce lifelong learners; this notion is effectively expressed in the ALA's 1989 report on information literacy (see chapter 2, section 2.3.2). Since user education programmes today are attempting to expand from teaching library skills to teaching the wider range of information handling skills required for information literacy, one needs to consider in more detail the justification for teaching the basic (lower level) library skills in the first place.

The strongest arguments in favour of teaching library skills relate to the role of libraries in the educational arena, and specifically to their role in educational reform (as argued in chapter 2, section 2.2 and chapter 3, section 3.2.1). Boyer (1987: 165), for example, noted the importance of teaching library skills to undergraduates in order to

achieve educational excellence in the USA; the report of his investigation recommended that

every undergraduate student be introduced carefully to the full range of resources for learning on the campus. Students should be given bibliographic instruction and be encouraged to spend at least as much time in the library - using its wide range of resources - as they spend in classes.

Whereas the educational role of the university library could be realized by the provision of user education programmes which are aimed ultimately at helping students to become more self reliant in the learning process, at present the importance of library skills is not necessarily being recognized by lecturers and consequently by their students. In a survey of user education programmes at tertiary institutions in the United Kingdom, for example, Cowley and Hammond (1987: 1) noted a lack of acceptance of such programmes by academic administrators and lecturers, suggesting that this could be due to lack of understanding of, or indifference to, the issue on the part of lecturers.

These attitudes of lecturers can be weighed against one of the most common criticisms of the quality of tertiary education - that subject courses do not encourage students to become independent information seekers. There are shortcomings inherent in a situation where students are not expected to move beyond their lecture notes, textbooks, and preselected additional sources which are placed in a "reserve" section of the university library. Such shortcomings have been highlighted in several sources (for example, Davinson (1981); Morris (1983); Boyer (1987); *ALA Presidential Committee ...* (1989: 7); and Breivik and Gee (1989: 31-52)), and will be discussed in section 5.4.4. The limitations of the "reserves-lecture-textbook" approach to teaching is a primary argument in favour of resource based learning.

Malan's (1989) questioning of whether universities in South Africa are providing the high quality of manpower needed to

manage the future changes in the country, emphasizes the need for graduates to be information conscious and capable of utilizing information resources. He notes that it is "imperative that students be made aware of the necessity of becoming independent users of scientific information" (Malan 1989: 81). It is up to the universities to instil such awareness in their undergraduate students.

The rationale for including library skills in an undergraduate curriculum relates essentially to providing students with the opportunity of gaining information handling skills which will enable them to become independent, lifelong learners. The objective of teaching students to become self sufficient in the utilization of information to increase their knowledge, is implicit in the nature of user education programmes.

Gash and Reardon (1988) discuss personal transferable skills which employers require, but which are generally lacking in graduates. They define personal transferable skills as

essential work skills which are not specific to any subject or profession, and which, though learned in one context may be successfully transferred to and applied in many other contexts. They are skills that enable people to acquire, structure, interpret and put to efficient use, their subject knowledge (Gash & Reardon 1988: 285).

A student with personal transferable (problem solving) skills is prepared for the workplace and lifelong learning if he realizes that these skills are transferable and can be applied in a variety of different contexts (MacAdam & Kemp 1989). However, students often fail to make the connection (Perkins & Salomon 1988). The issue of the transferability of information gathering skills is crucial to the promotion of the teaching of library skills.

Through learning library skills, students can learn patterns which can be followed when they face another information re-

lated problem (Rogers 1980: 71). For example, Inglis (1991) describes a programme at the University of Natal in Pietermaritzburg which teaches critical thinking skills within the context of science. Library skills teaching is incorporated in the programme, and students learn that these skills are transferable within the different science subjects:

[S]tudents commented on how the library skills taught in the first session had made the next library task easier, and in turn had made their information search for [another] project much easier ... they can now find what they want quickly and by themselves (Inglis 1991: 20)

Using the skills transference argument, librarians can provide justification for teaching library skills to students (MacAdam & Kemp: 1989). However, unless librarians have the support of lecturers in this regard, the user education programmes will have little relevance to the curriculum. The lecturers' attitudes towards library skills play a major role in whether students are provided with the opportunity of becoming independent information seekers. Morris (1983: 21) sums up the problems succinctly:

Thus in a library context [lecturers] may say that library use is important, but unless they actively expect this from their students, and make this clear through assessment criteria, the student will learn to "cope" and do the minimum.

5.4 LECTURERS' ATTITUDES TO LIBRARY SKILLS

The attitude which lecturers have towards the need for, and teaching of, library skills to their students is noted by all protagonists of user education. McInnes (1978: 3) points out how this attitude can affect a student's effective information handling:

More than any other factor, the value the classroom instructor attaches to library research determines the students' interest in use of library materials. Instructors give direction and motivation to students as to how library materials are to be used in meeting course

requirements. Their influence is most often the difference between a perfunctory use of materials and dedicated examination of the rich store of scientific literature typically available in most college libraries.

That the attitude of lecturers is the most notable factor which affects the use made of the library by students is not a recent finding (see, for example, Knapp 1958; Allen 1970). It would seem, therefore, that the issue would by now have been thoroughly researched by user education librarians. However, Hardesty (1991: 5-10) reviews several older surveys from the 1930's through to the 1980's (with emphasis on literature studies published during the 1970's) and finds that there are few empirical investigations into lecturers' attitudes to undergraduate library use. Maynard (1990: 69) also notes that

a review of the literature reveals that the subject of faculty attitude toward library instruction has been scantily researched. Yet, in view of technological changes and budget restraints, the need to explore faculty attitudes is crucial to any cooperative venture for improved library instruction.

5.4.1 Critical role of lecturers

In view of the importance which user education librarians attach to teaching university students library skills, but especially in view of findings which show that such skills are best taught in a subject related manner, it can be seen that a positive attitude among lecturers is required for user education programmes to be effective. Similarly, if library skills are to make up part of a broader curriculum for information skills teaching, then lecturers' cooperation is necessary. Arp and Wilson (1989) view user education programmes on a continuum which is defined by the level of cooperation which lecturers provide for the programmes. Carlson and Miller (1984: 486) note that of all types of user education, the course integrated library skills model is extremely dependent on lecturers for its success. With

particular reference to teaching library skills to distance learning students, Grimison (1988: 45) noted that effectiveness depended on the amount of academic staff involvement in the programmes.

Morris (1983) looks at fundamental barriers to the real effectiveness of user education programmes; several of the barriers mentioned relate to the attitude of lecturers with regard to the teaching of library skills. Obstacles caused by lecturers' attitudes are noted by several others, for example Cowley & Hammond (1987: 13-14), Cowley (1988: 16; 1992), Burrows *et al* (1989: 246), Baker (1989: 321-322), and Morris (1990: 65-66).

The issue of librarians forming a partnership with lecturers has been mentioned before. Such a partnership is dependent upon the librarians' knowledge of how the lecturers view the importance of library skills for their students, and the extent to which they expect these skills of their students. Hardesty (1991) proposes that librarians will only be able to effect change in lecturers' attitudes if they understand the lecturers and their attitudes. If librarians wish to strengthen the role of the university library in the undergraduate curriculum, they need to become more assertive participants in the educational process by forming a partnership between themselves and lecturers. But in order to do this, it is necessary for them to first have an understanding of the "faculty culture" within which lecturers operate.

We seldom met hostility towards the library and librarians from the faculty members ... Nevertheless, we did find considerable indifference, passivity, and inertia toward the library ... The thought that intensive, inspired, and imaginative use of the library should be part of undergraduate education is not part of faculty culture (Hardesty 1991: 127).

Hardesty developed a Library Education Attitude Scale (LEAS) as an instrument for investigating lecturers' attitudes towards the role of the library in undergraduate education

(Hardesty 1991: 20-32; 131-147). He identified four typical attitudes which lecturers have towards students' use of the library (Hardesty 1991: 40-47). Examples of what he calls "the incongruous nature of faculty culture" in American universities and colleges include: undergraduate lecturing is given low priority; actual teaching has become less important than research; the tendency to specialize separates lecturers from each other; having a good library has a psychological value in that it adds prestige to the institution and its staff; and by helping to select books for the library, the lecturers appease their consciences about their lack of library use expectations.

5.4.2 Surveys

The literature reports on several surveys which have been undertaken to gauge lecturers' attitudes to library skills, but few of these surveys were extensive or conclusive. Most of the surveys were undertaken in the USA. Lubans (1980) reports briefly on an informal survey undertaken to establish who lecturers thought should teach library skills: only seven percent voted for librarians, but 30% voted for the English department. A more scientific survey was undertaken by Thomas (1984) at California State University, using a seventeen-item questionnaire to survey lecturers on their attitudes toward user education. Washington State University libraries conducted a survey to assess the level of library skills of students, and the perception which lecturers had for the need for such skills (Kemp & Nofsinger 1988). Wheeler (1988: 18-19) mentions a survey of lecturers' attitudes to library skills undertaken in 1986, but does not identify the universities which were involved. The Iowa State University library surveyed lecturers' attitudes toward its library skills course which is credit related (Haws, Peterson and Shonrock 1989). Maynard (1990) reports on a survey undertaken at The Citadel (The Military College of South Carolina): the college's lecturers were surveyed to assess how its English department's lecturers compared to

other lecturers in their perception and use of library skills instruction, the rationale being that the English department of an institution is often expected to be the provider of library skills instruction. At the University of North Carolina, the Michener Library surveyed lecturers to establish their perceptions of library resources, services and facilities, the type of library assignments which students were given, the library skills expected of students, and the lecturers' opinions as to when students should possess these skills (Greer, Weston & Alm 1991).

The most comprehensive study to date is reported by Hardesty (1991). The findings include those of an attitude survey undertaken by means of interviews with 40 lecturers (half of them showing prior evidence of positive attitudes to library use, the other half showing negative attitudes) in seven tertiary institutions in the USA during 1981/1982 (Hardesty 1982). Hardesty (1991: 126) notes that the library is not the heart of the university as is so often claimed. There is a discrepancy between the proclaimed role of the library in the learning process and its actual role. He proposes that it is up to librarians to rectify the problem:

Despite the library's enormous growth it has not evolved into "the heart of the college". The classroom still has a lock on that title ... The keepers of the classroom also determine the library's fortune ... yet we never see their students in the library. In fact, we may not even see them in the library. ... Attitudes are the key. Librarians ... have a responsibility to inquire into the faculty's library-related attitudes. Librarians must develop an understanding of the needs and aspirations of the faculty. Through a better understanding of faculty's library attitudes, librarians can enhance the library's role in undergraduate education (Hardesty 1991: 10)

Mention can also be made of O'Hanlon's (1987) survey of lecturers at teacher training institutions in Ohio, undertaken to explore their attitude to library skills programmes in teacher training curricula.

In the United Kingdom, Squirrell (1989) surveyed students, librarians and lecturers at various Education departments at six universities, also to establish attitudes on library skills issues in teacher-training. Two other British surveys which were undertaken by Cowley, both touched on the attitudes of university lecturers towards library skills (Cowley 1988: 2, 14-16; Cowley 1990: 2).

An Australian survey relates to lecturers' attitudes towards library skills for distance learning students: Haworth (1982a) interviewed lecturers at the Royal Melbourne Institute of Technology. Haworth also undertook a literature review of various distance learning issues, including user education and lecturers' expectations concerning library use, and refers to several studies undertaken in various parts of the world prior to 1980 (Haworth 1982b: 170-172). In another survey related to distance learning, this time from Canada, lecturers' attitudes to user education issues were assessed (Burge, Snow & Howard 1989).

5.4.2.1 Findings of the surveys

The surveys mentioned above often yielded similar findings with regard to the attitude of lecturers to library skills. The most common problem which the surveys highlighted is that although lecturers feel that their students are under-prepared for the library skills which they require for their studies, these lecturers do not seek to remedy the situation by providing the necessary instruction.

Most of the surveys found that lecturers feel their students do not possess the library skills which they expect from them. For example: Thomas (1984: 433) found that 78% of lecturers were dissatisfied with students' abilities to do library research; most respondents in Wheeler's (1988: 18) survey agreed that the majority of undergraduates arrive at university without library research skills; Kemp and Nof-singer (1988: 78) reported that lecturers expected "a very

broad range of library skills" in undergraduates; Haws, Peterson and Shonrock (1989: 202) found that 70% of their responding lecturers believed that first year university students did not have the necessary skills to use a research library; and Maynard (1990: 69-70) reported that both English department lecturers and other lecturers found that students required library skills instruction.

However, several of the surveys found that, in spite of lecturers expecting library skills in students, and finding these lacking, the lecturers seldom provided their students with training in library skills: Thomas (1984: 433) and Kemp and Nofsinger (1988: 78) found this to be so; Maynard (1990: 69-70) reported that although 67% of the English department lecturers did offer library skills instruction to their students, two-thirds of the other departments' lecturers did not. Wheeler (1988: 18-19) noted lecturers' uninformed and contradictory responses with regard to expectations versus actual active support, commenting that "this flip-flop of support ... was characteristic throughout their responses" (Wheeler 1988: 18). Maynard (1990: 69-73) also commented on similar discrepancies, concluding that these may expose an inconsistency in lecturers' attitudes toward the value of library skills instruction, may indicate that library skills are important but not necessarily for all subjects, or that they may mean lecturers do not believe that library-conducted/class-related instruction is the solution (Maynard 1990: 72).

The indication that lecturers felt undergraduates should arrive at university with the necessary skills was evident in other survey findings. Lubans (1980: 121-122) commented that "a quarter of the teachers want the basic skills in place before the student steps on campus", noting that perhaps some of the lecturers believed there was a link between high school library skills programmes and those at university libraries. Greer, Weston and Alm (1991: 550) reported that lecturers expected a high level of skills (and not only library skills) in first year students:

Most responses indicated that faculty expected entering freshmen to be proficient in using the online catalog and locating library materials, and junior-level students to be able to use printed indexes, abstract sources, and automated or CD-ROM facilities. When asked to indicate at what level they expected students to be able to select, evaluate, interpret, and organize information effectively, faculty responded surprisingly, with levels ranging from entering freshmen through junior or more advanced levels, although 39% of faculty indicated that they expected such performance at the freshman level.

Greer, Weston and Alm (1991: 550) warn of a danger inherent in this situation where the presence of high level information skills is assumed by lecturers. They commented that since the abilities ("as well as the more obvious library skills"), are integral to the student's proficiency in doing term papers and reports, assumptions by lecturers that their students arrive with the required skills may preclude skill development.

Other findings of the surveys include that most lecturers felt that undergraduates should be required to take a course in library skills (Haws, Peterson & Shonrock 1989: 202; Maynard 1990: 71), and that "faculty members prefer to have the responsibility of teaching library skills taken out of their hands" (Haws, Peterson & Shonrock 1989: 202). Thomas (1984) found a correlation between a lecturer's frequent use of, and satisfaction with the services of, the university library and his support of library skills instruction for his students.

Hardesty's (1991) findings show that most lecturers are either not able or willing to support undergraduate library use. His findings, based on both the literature and his empirical studies, cover a number of issues, including:

* Some lecturers felt it would be better if undergraduate students did not use the library. Reasons for this viewpoint included the belief that students cannot handle

too much information, they might read something which is unsuitable or inappropriate to their subject courses, they cannot understand the language, or that the library could become a crutch.

* Many lecturers do not know why, how or when it is necessary for students to use the library. Although few lecturers stated so implicitly, it appeared that most had not given the issue of student library use much thought. As a result, many lecturers had limited views about the contribution which the library could make to the learning process of undergraduates.

* There was little evidence of a partnership between librarians and lecturers with regard to user education. Where there was evidence of a partnership between librarians and lecturers, there was greater chance of the university integrating library skills into the curriculum.

* In cases where a subject course had a library skills requirement, this seldom required students' application of higher order cognitive skills.

* Were it not for the stimulus of librarians, even fewer lecturers would encourage library use by students.

* There was little evidence of librarians being involved in curriculum development.

* Many lecturers believe only the better students would benefit in the learning process by using the library.

5.4.3 Lecturers' own experiences in library use

The findings by Thomas (1984) that a lecturer's own use of the library could determine his attitude to the teaching of library skills, touch on issues which are brought up by several other authors: the lecturer's ability to use a

library effectively, and also the lecturer's own experience of library use during his university studies.

Kenney (1983: 7) believes that lecturers are not necessarily good at library research, and that some require library skills instruction themselves:

Often, faculty are the poorest models for students on conducting research and retrieving information ... The majority of academic faculty could benefit infinitely from several sessions with a good BI librarian.

Hardesty (1991: 104) reports that many lecturers miscalculate the skills and incentives which are required in order to use the library, since they had developed their own library skills through trial and error and believe that undergraduates can do the same. Collins, Mellon and Young (1987: 73) suggest that, since most university lecturers were good students themselves, they probably eventually "felt their way around the library until they were successful" in finding what they needed - and if they had been reluctant to ask questions of their lecturers or librarians, they can no longer remember needing to do so. They are therefore inclined to think that their students are similarly dedicated and resourceful, and thus have no problems in using libraries. Mellon (1988: 137) recalls one lecturer's response to her suggestion that user education might be necessary for undergraduates:

"If I could find things when I was in college," roared one octogenarian at me in the university cafeteria, "my students can find them too."

Breivik and Gee (1989: 35-36) approach the lecturer's library experience as a student from a different angle, suggesting that lecturers could be unaware of their own limitations as researchers, owing to their unfamiliarity with libraries. Quoting a professor of English reminiscing on his use of the library as a student and associating this with his teaching approach as a lecturer, Breivik and Gee illustrate how a lecturer who did not require library skills

as a student is unlikely to require such skills of his students. McCarthy (1985) intimates that if lecturers do not have a need for a library themselves, they are indirectly depriving their students of the opportunity to learn how to use a library.

Stoan (1984: 106) suggests a further problem: that lecturers might not regard undergraduate projects which require library use as true research, and therefore give little thought to how beginning researchers get started; thus they provide no direction to these students.

It appears that, if lecturers base their assessment of their students' need for library skills instruction on their own experiences with library use as undergraduates, they are not always likely to appreciate the necessity for teaching library skills to undergraduates today. The situation could be exacerbated by other factors, for example if the lecturers are out of touch with the complexities of modern research libraries, or are unfamiliar with the role which IT plays in information handling, or are uninformed about the poor state of library literacy - and information literacy - at school level.

A further problem could be caused by academics who maintain that skills should not be taught at university level. An editorial in *Research strategies* touched on this issue recently, pointing out the irony of the situation where

[lecturers] firmly hold that concepts, patterns, and procedures for retrieving recorded knowledge cannot, and furthermore, should not be taught in college. Why? Because, they claim, these are content-free, rote skills, not disciplines. Or because students should have learned such things in grade school. Or because they themselves gleaned all they need to know the hard way, which is ergo the only right way ... It somehow escapes many otherwise shrewd people that critical thinking requires both facility and independence in seeking information, and that these twin attainments must be cogently taught to be successfully learned. But, alas, many who have mastered these feats think them too mysterious or mundane to

teach (Editorial: The fourth irony 1989: 146).

5.4.4 "Reserves-lecture-textbook" approach to teaching

In their illustration of history repeating itself through lecturers who were not required to have library skills as students and subsequently do not require such skills from their students, Breivik and Gee (1989: 35-36) bring up a point which was made earlier in this chapter (see section 5.3) - that "the reserves-lecture-textbook" approach to teaching does not require or encourage students to have library skills. The library is seen only as the place which keeps the sources which have been identified by lecturers as required reading for students: these are then placed in a reserve section, and students need not move beyond these sources which are there waiting for them.

The ALA emphasized the importance of citizens having a lifelong habit of library use if a learning society is to be created, reiterating the findings of educational reform reports that stressed the need for a restructuring of the learning process:

Textbooks, workbooks, and lectures must yield to a learning process based on the information resources available for learning and problem solving throughout people's lifetimes ... [requiring] the move from textbook and lecture-style learning to resource-based learning (*ALA Presidential ... 1989: 7, 12*).

5.4.5 Summary

It is apparent that if a lecturer has a negative attitude towards the teaching of library skills, this is likely to influence the chance his students might have of learning these skills. In short, lecturers' attitudes could deny students the opportunity of learning independent information gathering skills. This point will be taken up in empirical study C (chapters 7 and 8), where the attitudes of lecturers

at Unisa are investigated.

5.5 TYPES OF USER EDUCATION PROGRAMMES

In this section, a review of the literature provides an overview of the types of user education programmes which could be implemented at university level. The different ways of teaching library skills will be outlined, using Malley's (1984a: 59) differentiation between **methods** and **modes**. Method refers to the form or procedure which the programme follows, such as the presentation of a formal course for which students can obtain credit, or the presentation of an elective seminar or workshop. Mode refers to the manner in which the method is taught, such as by the use of printed or audio-visual material, or by means of utilizing IT (Information Technology) such as CAI (Computer-Aided Instruction) programs and CD-ROM (Compact Disk - Read Only Memory). Finally, several issues related to teaching library skills at university level will be mentioned.

5.5.1 Approaches to teaching library skills

User education at its most elementary level is simply individual reference assistance, that is, a librarian helping a patron to use a library. Once a library starts providing assistance on a more formal level by presenting programmes, there are several approaches which can be taken. Van Brakel (1979: 30-41) categorizes teaching methods into those aimed at groups of students, and those which provide for individual instruction. Morgan (1990: 15) distinguishes between a teacher-centred approach, where the tutor provides the subject matter in a syllabus which is already "interpreted" for the student, and a student-centred approach aimed at the individual, where the student has more responsibility for many aspects of his learning.

The teaching of library skills is usually effected by a com-

bination of methods and modes, which are not necessarily mutually exclusive. Methods used at university level would be determined by several factors, including the educational objectives in providing the programmes, the needs and numbers of the students at whom the programmes are aimed, and the extent of support (in terms of commitment and finance) which the programmes have from the administration and lecturers of the university. Breivik (1982: 68) discusses numerous other factors which would determine the methods chosen.

In the USA, where higher education institutions are accredited according to certain criteria, there is a trend towards evaluating the effectiveness of the library within the learning environment provided by the institution. Lutzker (1990) discusses this issue with regard to the criteria of the accrediting commission for a group of American states, concentrating on the accreditation of the institutions' user education programmes. She notes that the commission does not offer prescriptions as to the methods employed for user education, but that the programmes are rather judged within the goals and objectives of the institution (Lutzker 1990: 17). Thus it is the effectiveness of library skills programmes which is paramount, and not the methods used to provide the programmes.

5.5.2 Various methods

As mentioned above, methods and modes can be utilized in any combinations. Methods described in the literature range from personal assistance at the time and place of need (for example, a reference librarian at the information desk showing a student how to use an OPAC), to credit bearing courses which make up part of the curriculum for a degree (for example, a CAI module on library skills which is integrated with other modules relating to subject matter in a specific discipline). The main methods will be briefly outlined, with reference to literature when this elaborates on unusual or

specific aspects of methods. In section 5.5.3, more attention will be paid to formal courses in library skills. Such courses incorporate most of the other methods but, more importantly, they come the closest to the incorporation of library skills teaching within the student's total curriculum.

* Tours of the library are a common way of providing library orientation. These could be walking tours where a librarian leads a group of students, or self-conducted tours. Tours could be supplemented or replaced by audiovisual presentations, such as videos or slide-sound programmes. Burrows *et al* (1989) describe a walking audiotape orientation tour for medical students: the student receives a Walkman cassette player, an information package with a floor plan of the library and the library's policies and procedures, and a self-paced exercise which tests him on what he has learnt in the orientation. Hilton (1984) describes printed "Take a hike" walkabout guides which users can follow for self-paced library orientation tours. Lawson (1990) makes a cost and efficacy comparison between providing personally guided library tours, and providing similar orientation by means of CAI.

* Lectures, seminars, workshops and demonstrations for groups of students can cover any level of user education, from simple library orientation to the complexities of literature searches using CD-ROM. Several modes could be utilized: talk-and-chalk, printed handouts, overhead projectors and transparencies, slide-sound programmes, videos, interactive videos and terminals, CAI, and teleconferencing. With regard to distance learning methods, Cameron *et al* (1987) describe the use of videotaped user education lectures in the United Kingdom, and Salt (1987) describes how a Canadian university broadcast via satellite a one-day interactive videoconference on library instruction.

* Workbooks can be used to provide students with self-paced instruction. Such instruction could be addressed at

different levels of library skills, or focus on using specific sources such as indexes. Morgan (1990) compares the effectiveness of workbooks and lectures; Wright and Larson (1990) discuss replacing an existing workbook programme with a CAI program which allows for more interactive learning and reinforcement of what has been learnt.

* Printed matter or handouts, aimed at various levels of user education, are common in university libraries. These are usually made available at general areas, such as guides to the library which are placed at information desks or issue counters. Alternatively, printed matter could be placed at point-of-use areas, such as a printed guide to using the OPAC which is placed next to the catalogue, a poster guide to a specific abstract journal which is placed where the journal is shelved, or illustrations explaining use which are pasted onto a microfilm reader.

* CAI packages for the teaching of library skills can be utilized for several levels of user education. It appears from the latest literature that CAI will feature strongly in the future as a mode of teaching library skills; a few examples from the recent literature are provided here to illustrate this. Madland and Smith (1988) compare a CAI program with lectures for teaching online searching, to assess the effectiveness of each method as well as the students' preferences for particular modes. Lawson (1990) discusses a CAI program developed as an alternative to a library tour. Wright and Larson (1990) discuss how CAI programs for basic library skills can attain learning objectives in the cognitive, affective and sensorimotor domains. Hutchings (1990) discusses the use of hypertext for library orientation programmes; and Piette and Smith (1991) describe the development of a hypermedia program for library research strategies.

* Other methods of teaching library skills outlined in the literature include point-of-use instruction, self-paced activities, worksheets, problem-oriented assignments, learn-

ing packages, programmed instruction, games and simulations, pathfinders, research paper clinics, practicums, "laboratory" sessions, "hands on" experience, and individualized instruction (see, for example, Van Brakel 1979: 30-44; Rice 1981: 62-96; Breivik 1982: 67-82; Adams & Morris 1985: 39-58; Beristain 1988: 57-64; Wheeler 1988.)

5.5.3 Library skills courses

All the methods outlined above could be applied to formal courses on library skills. A formal course is here regarded as a course which is "approved through the institution's regular curriculum review procedures. It may be non-credit or for credit" (ACRL 1980: 58). If a course is credit related, this means that it provides for some type of assessment of the library skills taught, and the student obtains credit for having passed a test or examination which evaluates what he has learnt with regard to library skills. Credit related courses thus form part of the student's curriculum on which he is examined in order to graduate.

Formal courses in library skills - both credit and non credit - could be elective (that is, students are able to choose whether they wish to enrol for the courses or not) or compulsory. Courses could be further categorized according to their subject coverage. They could take a general approach, or be related to a particular discipline or subject.

5.5.3.1 Generic courses

A generic library skills course follows a general approach to using the sources, services and facilities of a library. Instruction is given from a broad perspective; that is, there is no particular emphasis on sources which are relevant for a specific subject, or on procedures which are suitable for finding information in a particular subject field. Generic library skills courses are aimed at all stu-

dents in general, and provide a general framework for typical library usage, within which more specialized or advanced library utilization skills could be incorporated later.

(a) Examples of credit bearing generic courses

General library skills courses which are offered for credit are found in both undergraduate and postgraduate curricula; most of the literature describes credit bearing courses offered at universities in the USA. Some of these courses offer a combination of library skills and other related aspects, such as information technology (IT) or scholarly communication.

Basic library skills courses for credit purposes for undergraduate students are discussed by several authors. For example: Haws, Peterson and Shonrock (1989) refer to the course taught at Iowa State University; Allen (1989) describes the library skills element in a general education course (which also includes computer literacy) at Wayne State University in Detroit; Reynolds (1989) discusses the library skills instruction which forms part of a general education course at San Jose State University in California; and Dennis (1990) describes a credit course on IT and information retrieval offered to undergraduates at Salem State College in Massachusetts.

At postgraduate level, Columbia University has a credit course taught in the Graduate School of Arts and Sciences, which provides instruction in library skills, personal information management, scholarly communication, and computerized information searching (Lowry 1990). Another example of a credit course in library skills for postgraduate students comes from Australia, where the library at Queensland University of Technology offers a credit course on advanced information retrieval skills for postgraduate students in a variety of disciplines (Bruce 1990).

5.5.3.2 Subject related courses

A subject related course specializes in library skills as they are applied in a particular subject field. The course content would emphasize the sources most relevant for that subject, and familiarize the student with the most important bibliographic tools which provide access to information in that field. The course thus provides the student with skills which are related to utilizing a library for information in that subject field. Such subject courses could follow on from general library orientation programmes, or from a generic library skills course, either of which would first provide a general introduction to typical library usage. Alternatively, the subject related course could incorporate the necessary basic skills for general library usage as well.

The subject related library skills course could be offered alongside an actual subject course (for example, history, nursing science, or English literature), but not be integrated within that course. Alternatively, subject related library skills courses could make up part of the actual content of a formal course in a subject; that is, the library skills component forms an integral part of the "subject content" of the subject course. In either case, the library skills component could be formally assessed or not, and could be credit bearing or not.

Although Morris (1990) exhibits terminological confusion between "integrated user education" and "course-related instruction", elements of her suggested continuum can be successfully applied to subject related library skills courses. Subject courses can incorporate an element of (unassessed) library skills instruction by means of an *ad hoc* arrangement between the subject lecturer and the librarian. Subject courses could also have a "bolt-on" library skills element, where the library skills are assessed, but usually separately from the mainstream subject

teaching. Finally, subject courses could have library skills integrated in the mainstream subject syllabus, with the library skills component being assessed together with the subject component - for example by means of a literature search or the compilation of a bibliography (Morris 1990: 58-59).

In order to avoid confusion due to the use of the word "course" for the specific subject (that is, the non-library part) as well as for the library skills aspect, the concepts used here are "course related library skills instruction", and "course integrated library skills instruction".

(a) Course related library skills instruction

provides students in a given course with library and literature use skills necessary to meet the objectives of the course. The instruction may provide students with an understanding of the subject's literature, its structure and effective methods of accessing it with emphasis on the literature. The instruction occurs with the cooperation and support of the instructor and during class time (ACRL 1980: 58).

According to Renford and Hendrickson (1980: 185), course related instruction generally consists of a single lecture given by the librarian, and which centres on the particular needs of the students in a specific subject course. Such instruction could be nothing more than an orientation tour highlighting the library's collection for the particular subject, or could be more advanced in that guidance is provided in accessing this collection.

(b) Course integrated library skills instruction

is part of a [subject] course's objectives. Instruction is viewed as essential to knowledge of the subject and therefore to successful completion of the course. This integration is usually achieved by discussion between faculty and librarians at the time the [subject] course is designed (ACRL 1979: 58).

In course integrated library skills instruction, the library skills aspect is regarded as an essential part of the subject course. Winkworth (1977: 12) envisaged integrating library skills into all teaching, so that the skills would be taught functionally in the context of topics of study and thereby made relevant. The major advantage of integrating the library skills with the subject teaching is that the skills are learnt at the time of need, and are more likely to be seen as relevant by the students than if the skills are taught in isolation from a subject, or at a time when the student has no particular need to utilize the library for his studies (for example, at the start of the academic year, before assignments are set or are due).

Although Carlson and Miller (1984) do not successfully distinguish between the concepts course related and course integrated, they point out that such library skills instruction has a critical dependence on lecturers:

Because instruction on the use of the library is given as part of subject-specific classes, librarians must work extensively with and have the cooperation of the faculty who teach these classes (Carlson & Miller 1984: 484).

(c) Examples of subject related library skills courses

The literature provides numerous examples of subject related library skills courses. The field of medicine is heavily dependent on library skills being taught within the discipline, although, like several other disciplines, the tendency today is for this instruction to be incorporated in broader information literacy teaching. For example, Maranda (1989) discusses the issue of training students at a Canadian university in the online searching of biomedical databases such as MEDLINE, and outlines how this started initially as library skills instruction but has now been incorporated into an integrated information literacy programme. Other examples from the medical sciences include

a library skills module for nursing students (Tyler & Switzer 1991), and integrated information skills instruction for medical students which concentrates on library skills in the first year (Burrows *et al* 1989). Maloney (1989) discusses library skills instruction for students of French; Allen (1987) and Sorensen (1988) for students of English; Affleck (1986) for education students; McDowell and Tomlinson (1989) discuss a library skills programme for quantity surveying students; Troutman (1987) describes the library skills module for theology students; and Stachacz and Brennan (1990) outline a programme for biology students. Cowley (1990) identifies programmes for several disciplines at universities in the United Kingdom. A book edited by Reichel and Ramey (1987) contains conceptual frameworks for library skills teaching in several subjects in the social sciences, humanities and science and technology, ranging from women's studies to wildlife and fishery management.

5.5.4 User education at South African universities

University libraries in South Africa have only fairly recently begun to pay attention to user education. Since Masson (1970) suggested that formal, subject related instruction in library use be provided by universities, and since Van Brakel's (1975) investigation into user education for university students in South Africa, most local university libraries today pay particular attention to such instruction.

Of particular relevance to this study is the work of Van Brakel (1979), who designed a curriculum to meet the requirements for educating undergraduate students in library use. He concluded that any programme for library user education at university level requires the full cooperation of the lecturers, since it can only be implemented successfully if fully integrated into normal academic requirements of students.

The importance placed on user education programmes has led to four local symposia on the topic in recent years (Behrens 1992: 82-83). User education issues at South African tertiary institutions have not been covered substantially in the literature and at symposia, and available references therefore cannot be regarded as representing a state-of-the-art for user education in the country. Some of these references include details of activities at the University of Natal in Pietermaritzburg (Bell 1990: 37-38; Vietzen 1990), Technikon Natal (Pienaar 1990), University of Cape Town (Laburn 1984: 94), University of Zululand (Makhubela 1986), and Unisa (Williams 1986; Willemsse 1991: 528-530).

As mentioned in chapter 1 (section 1.2.1.5), recommendations were made by a working committee appointed to investigate curriculum planning for departments of LIS at South African universities (Meijer *et al* 1988: 50), that courses on the locating and processing of information be presented for university students in general. The evolution in South African Library and Information Science (LIS) departments towards presenting courses for a wider student body is presently enjoying research attention (see, for example: Blom 1990; Boon 1990; Van der Walt 1992). However, it should be noted that the issue of user education is not necessarily central to this approach.

Although most universities in South Africa provide user education programmes, as mentioned earlier these have not been adequately described in the literature, especially with regard to the current situation. Some of the papers presented at the four user education symposia mentioned earlier, did discuss specific programmes, but the papers have not been formally published and there is thus a lack of current scientific literature on user education in South African universities. Laburn (1984: 97) pointed this out some years ago:

Such education probably is taking place in many institutions, but if one goes by the literature little or nothing is happening.

5.5.5 User education at distance learning institutions

The role of libraries in distance learning institutions, and the relationship between library skills and independent learning, is discussed in general by Howard (1985). The issues of user education and library skills teaching at distance learning universities have received some attention in the literature. For example, the situation at some institutions in Australia is covered by Grimison (1986; 1988) and Crocker (1991: 506), in Canada by Salt (1987) and Slade (1991: 467-468; 474), and in the USA by Rice (1987), Ruddy (1987), and Keenan (1989: 155-157). A recent annotated bibliography on library services in distance learning institutions, provides about 60 references on user education issues in distance learning (Latham, Slade & Budnick 1991).

The user education programmes provided for Unisa students are investigated in empirical study A in chapter 6.

5.5.6 International trends in user education

Van Brakel (1990) considers the newer IT available today which provide possibilities for user education programmes, including CAI, CD-ROM, local area networks, multimedia and hypertext. Fjällbrant (1990) examines some of the effects of IT as applied to user education programmes, with particular reference to catalogues, bibliographic and videotex databases, optical storage of information, electronic publishing and electronic mail. It appears that continual advances in the use of IT for information handling in libraries will continually influence the methods utilized for teaching library skills.

Several articles report on trends in user education programmes over the past two decades, but since these studies investigated differing issues and the articles dis-

cuss practices in different countries, it is not possible to come to an overall conclusion with regard to where user education is heading in the 1990's. Kirkendall (1980) discussed current practices and trends in academic libraries in the USA at the end of the 1970's. Warning that generalizations could not always be made since programmes were tailored to the needs of specific institutions, she noted several trends including an expanding interest in CAI, the widespread use of self-paced workbooks, and the continuing establishment of credit related courses.

Mensching (1989) surveyed academic libraries in the USA to determine user education methods, and compared the results with Kirkendall's (1980) earlier data. The recent survey indicated, *inter alia*, an increase in the use of CAI, more widespread use of workbooks, and a movement away from credit courses in library skills during the 1980's. The most common reasons cited for discontinuing credit related courses were lack of professional staff, and low enrollments - especially where "the courses were electives and not required for graduation" (Mensching 1989: 10). Other contributing factors for the decrease in credit courses related to their time-consuming preparation, and limited budgets.

In a recent survey of information skills teaching undertaken at six higher education institutions, Cowley (1990) notes that the nature of library skills teaching in universities and polytechnics in the United Kingdom has not changed much during the past decade:

Both course content and teaching methods remain much the same. Chalk and talk, handouts, ohp's and the use of video dominate. The most significant change has come with the growth of on-line services, the introduction of OPAC and the use of CD-ROM. The earlier emphasis on print sources and the rather turgid introductions to the use of the catalogue have given way to instruction in the use of electronic sources. Disciplines such as law and chemistry give increasing emphasis to online information retrieval (Cowley 1990: 36).

(For earlier surveys, see Cowley and Hammond (1987) and Cowley (1988)). Cowley (1992) does not envisage a major increase in credit related library skills courses at higher education institutions in the United Kingdom, essentially owing to a lack of commitment on the part of lecturers.

Arp and Wilson (1989) investigate the importance for, but lack of, involvement by the university administration and the teaching faculties in user education programmes. They suggest that librarians have not been successful in linking library skills programmes with the general university curriculum because administrators and lecturers are unfamiliar with the structures of these programmes - mainly because user education librarians have not been consistent in describing the instructional structures, and also use the varied user education terminology indiscriminately within different contexts (Arp & Wilson 1989: 25-26). Arp and Wilson identify five structures of user education programmes which have emerged over the past two decades: orientation; course related instruction; course integrated instruction; team teaching; and separate courses. They view the five structures on a continuum of cooperation between and among librarians, lecturers, and university administrators, with orientation at the lowest end of the continuum and separate courses at the other extreme. Their suggestion is that before selecting a structure for user education programmes, librarians need first to evaluate the political environment of the university, analyze the existing support for such programmes, and establish the level of institutional cooperation. The level of cooperation will determine the structures which are feasible for user education programmes at that university. As these programmes develop and mature, cooperation from administration and lecturers should strengthen and expand, and thus enable the user education programmes to move along the continuum towards courses which are closely tied to the general curriculum of the university (Arp & Wilson 1989: 33).

5.5.7 Findings

In this overview of methods for teaching library skills to university students, it has become apparent that the success of user education programmes is dependent on the library having the support of the teaching faculties of the university. The issue of a partnership between librarians and lecturers has been outlined earlier (see chapter 2, section 2.3.3.3), and arises whenever the success of library skills teaching is discussed. If one considers user education programmes on a continuum, with basic library orientation at the one end and subject related library skills courses at the other, it is obvious that the further the user education programmes move along the continuum, the more likely they are to have a rightful claim to teaching a wider range of information skills - and the more vital the positive attitude of lecturers towards library skills becomes.

5.6 LIBRARY SKILLS IDENTIFIED

Sources consulted for section 5.5 were used to identify the library skills which an undergraduate student might be expected to practise. Additional sources used in this regard include Winkworth (1977), Association of College and Research Libraries (1979), Irving and Snape (1979), Hopkins (1981), Rice (1981), Arp and Wilson (1984), Adams and Morris (1985), Affleck (1986), Wolf and Wolf (1986), Wheeler (1988), and Bell (1990).

5.6.1 Lack of taxonomies of library skills

Almost four decades ago Jackson (1954: 189) noted that the literature on user education "if formidable in quantity ... does not impress one with its quality". The information literacy movement has caused librarians to re-evaluate the role of library skills within the learning process, and it

would appear that the quality of the literature has improved as a result. For example, the emphasis placed on the application of learning theories to information handling skills is evident in the user education domain as well (see chapter 4, section 4.4).

However, the literature remains somewhat vague when it comes to delineating the actual library skills which are regarded as part of the information skills scheme. Despite the volume of literature on user education programmes at tertiary level, few authors specifically identify the actual skills which are taught in the programmes. Much of the literature consists of descriptions of programmes, illustrated by appended examples of handouts or worksheets supplied to students as part of the programmes. There are plenty of sources outlining particular user education programmes presented by university libraries, but many of these tend to describe methods for teaching students to use specific library tools, such as the *Readers' guide to periodical literature*. A similar situation has been noted in the literature on user education at school level; Gawith (1986: 51) describes such writings as being in the vein of "How I do it good". The analysis of sources consulted for section 5.5 indicated an emphasis on the description of library skills programmes, but not on the actual skills which the programmes aimed at teaching.

Unlike information skills, for which several taxonomies are available (see chapter 4, section 4.3), library skills have seldom been classified into taxonomies. Despite the tendency to expand the objectives of user education programmes from teaching of library skills to the teaching of the broader range of information skills, there is little evidence that librarians are working from models which place the library related skills within a framework of information handling skills. One of the most detailed taxonomies of library skills remains that of Winkworth (1977: 5-6), who categorized these skills within a wider taxonomy of study skills (see chapter 4, section 4.3.5 and Figure 4.3).

Where actual taxonomies of library skills at tertiary level have been drawn up and reported in the literature, these tend to be brief. It is seldom clear how such taxonomies relate to a wider information skills framework. For example, Arp and Wilson (1984) outline a user education programme which is related to an English composition course. They provide a "taxonomy (or list of quantifiable skills)" which itemizes library skills "in ascending order of cognitive demand and research sophistication" (Arp & Wilson 1984: 18-19):

1. orientation to the physical structure of the library
2. recognition of types of materials (eg encyclopedia, journal article)
3. understanding of the internal hierarchical structures of materials and ability to combine these structures
4. understanding of the hierarchies within subject or academic disciplines
5. understanding of access tools and library operations in relation to subject disciplines
6. understanding of the idiosyncracies of the access tools and materials within a specific discipline.

The authors note that, together with the objectives for the particular user education programme described, the taxonomy was used to develop the actual instructional components of the course. Thus, one must assume that programmes can only be described briefly in the literature. The actual documentation drawn up for the execution of a programme might include the aims, objectives, and particularly a taxonomy of the skills, in greater detail.

The Bibliographic Instruction Section (BIS) of the Association of College and Research Libraries (ACRL) in the USA has drawn up a model statement of objectives for user education programmes in academic libraries. The first statement was drawn up in 1979 and later updated. The ACRL/BIS statement (Model statement ... 1987) is intended to provide guidance for librarians when reviewing existing user education

programmes, or when developing new programmes. The objectives which are contained in the statement provide an excellent overview of the processes which are necessary in order to gather information, and as such could be used as the basis for a detailed typology of library skills.

The ACRL/BIS does not use the word "skill" in its model statement, but instead uses "understands" and "recognizes", as illustrated in the following section which relates to how information sources are physically organized and accessed (Model statement ... 1987: 73):

General objective: The user understands the way collections of information sources are physically organized and accessed.

T1. The user understands that libraries and library systems may group information sources by subject, author, format, publisher, type of material, or special audience.

a. The user recognizes that many library systems are decentralized and the materials at each location may be distinguished by ...

A similar lack (or avoidance) of the word "skill" is noticed in many examples of courses teaching library related skills; the course described by Arp and Wilson (1984) cited earlier is one case in point. A further example is evident at the Leicester Polytechnic in the United Kingdom, which has a module designed to integrate information, communication and subject skills in a particular subject course (Cowley 1990: 57-62). The course objectives make use of words like "understands", "appreciates", "explains", "gains experience", "develops". Whether the avoidance of "skill" in these cases is done purposefully is not evident, but it could be due to the feeling in some academic quarters that "skills" development should not be part of university studies (see section 5.4.3).

5.6.2 Skills and strategies

Library skills have not traditionally been regarded as one

of the "basic skills" which are required for learning: these basic skills are generally limited to reading, writing, and study skills, with computational skills sometimes added (Sorenson 1988: 162). The main rationale behind the information literacy and information skills movements is that information handling skills should be included among the basic skills if scholars and students are to be taught how to be independent, lifelong learners.

The word "skill" has pervaded this study; concepts such as library skills, information skills, and information handling skills, have been used throughout this thesis. At this juncture it seems appropriate to consider the meaning of "skill" as it relates to the use of a library.

Bloom (1956: 204) regards skills and abilities as synonymous:

Abilities and skills refer to organized modes of operation and generalized techniques for dealing with materials and problems. The materials and problems may be of such a nature that little or no specialized and technical information is required. Such information as is required can be assumed to be part of the individual's general fund of knowledge. Other problems may require specialized and technical information at a rather high level such that specific knowledge and skill in dealing with the problem and the materials are required.

MacColl (1980: 12) suggests that

[T]he term "skill" can be applied to the ability to do something with a degree of expertness in repeated performances ... a skill is an *ability*, which implies learning ... it involves "*expertness*", which implies mastery ... and it involves *repetition*.

It cannot be assumed that the "general fund of knowledge" which a student possesses at university entry level includes the specialized information which is necessary in order to make use of the university library. Before the student is able to use a catalogue effectively, for example, he

requires an understanding of the bibliographic system of the library, a knowledge of search terms (author, title, subject) and of classification codes and call numbers. Thus, before actual skills can be practised in the library, certain pre-existing knowledge is required.

Library skills are not merely utilitarian; they involve more than knowing about a library, and more than knowing how to use a library. They are dependent on the application of a pre-existing knowledge, and imply action of some kind with some purpose in mind. The application of library skills relates to a plan of action, or a strategy. User education programmes often use the term "strategy" in relation to library skills. For example, the aim of the programme could be stated as the development of certain skills which will enable a student to work out a search strategy in order to locate information. Nisbet and Shucksmith (1986: vii) differentiate between "skill" and "strategy" by noting that

the term "strategy" is used to indicate a level above that of skills: strategies are the executive processes which choose, coordinate and apply skills. Strategies are different from skills in that a strategy has a purpose, it is a sequence of activities and it is more readily modified to suit the context, whereas a skill is more specific or "reflexive".

Library skills are thus applied in executing strategies for gathering information in a library. The strategies can be transferable to other information-seeking situations ("modified to suit the context"), as was argued in section 5.3. Transferable information gathering strategies can therefore be learnt through the application of library skills.

5.6.3 Library skills categorized in a typology

The following library skills have been mentioned in, or deduced from, the literature consulted. The skills are categorized here under four sections in a typology:

- * orientation to the library
- * the library's internal organization methods
- * the library's resources
- * accessing the sources held by the library.

A. ORIENTATION

Orientation to the library entails a knowledge of:

- the physical layout of the library (for example, where the catalogue is located, where various collections are housed)
- the regulations for use of the library (for example borrowing procedures, opening hours, library behaviour)
- the different services provided by the library (for example, information desk, reference service, interlibrary loans, user education programmes).

B. ORGANIZATION

An understanding of how the library physically organizes sources for accession requires a knowledge of:

- basic library terminology (for example classification, call number, accessions number, reference book)
- order and arrangement (such as the classification scheme used, arrangement of books on shelves, alphabetical and numerical arrangement)
- how a bibliographic system operates (for example how

the catalogue is a tool which is used as a guide to the collection of sources)

- the concept of subject headings and search terms.

C. RESOURCES

In order to use the resources of the library (that is, tools and information sources), it is necessary to have a knowledge of:

- the difference between a bibliographic tool (like a catalogue or index), and the informational sources to which these tools provide access
- different formats (for example printed, computer-based, non-book materials such as microfiche and audio-visual)
- computerized information services (for example, internal and external databases and the various ways of accessing these such as online or using CD-ROM)
- the internal structure of a book (title page, contents lists, chapters, index), and how these are used to trace information in the book
- periodical literature, and how periodicals consist of separate articles
- various types of common reference sources (such as encyclopaedias, dictionaries and yearbooks), and how these are used
- bibliographic descriptions.

D. ACCESSING

Accessing sources in a library (that is, tracing a reference to and then physically locating the item) requires the ability to:

- select general and specific search terms
- use the catalogue (card or online) to locate sources by author, title and subject
- use other finding tools like periodical lists
- use printed periodical indexes to trace journal articles
- use printed abstract journals to trace sources
- use computerized databases of indexes and abstracts
- physically locate sources
- select relevant information from the sources
- make a note of relevant information, as well as the source from which it was obtained.

It becomes apparent that many of the library "skills" in the typology do not directly relate to skills or abilities, but refer rather to the pre-existing knowledge which is necessary before certain skills can be applied. Skills are applied only from the accessing stage (D); the three earlier stages (A, B and C) in the typology relate to the pre-existing knowledge which is required for the application of the skills. It is also only at the accessing stage of the typology that one can refer to an information gathering

strategy, since it is at this point that information seeking skills become relevant.

5.7 THE PRO LIBRARY AND INFORMATION SKILLS MODEL

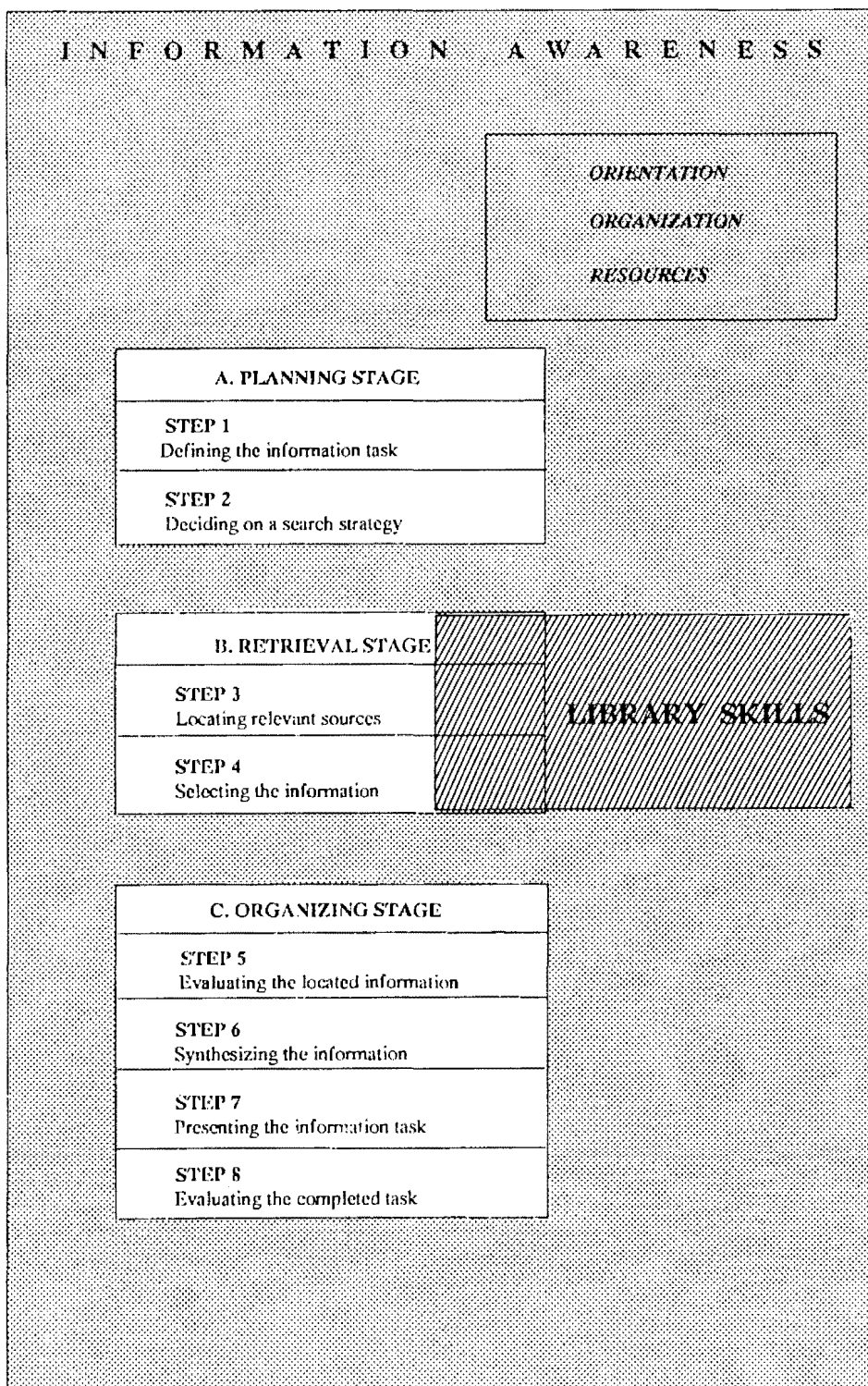
If the typology of library skills is considered in conjunction with the PRO typology of information skills (see chapter 4, section 4.6 and Figure 4.4), it can be seen that the library skills slot into the information skills typology as illustrated in Figure 5.1. By subsuming the library skills under the generic information skills in steps 3 and 4, a model of library and information skills is created.

That the pre-existing knowledge (stages A, B and C of the library skills typology) cannot be regarded as skills is evident from the fact that these stages do not correspond with any of the generic information skills. However, this pre-knowledge does slot comfortably into the framework of information awareness within which information skills are applied (see chapter 4, section 4.5).

The indication of where the actual library skills are placed within the library and information skills model clearly shows that library skills are narrower than information skills. Of particular importance is that library skills are not involved at the higher cognitive levels of the model (evaluating and synthesizing). Information skills which do not require that there be interaction between the student and the resources in the library itself, fall outside the library skills typology. This implies that once the student has retrieved the source made accessible by the library, and selected the relevant information from this source, what he eventually does with this information is not regarded as part of library skills.

However, by indicating where and how library skills are relevant in the information skills typology, it becomes evident that higher level skills such as interpretation and

Figure 5.1 PRO library and information skills model



utilization are dependent on information gathering skills for obtaining the information which is "handled" at the higher levels.

5.7.1 Implications for user education programmes

If library skills do not cover the higher order cognitive skills in the library and information skills model, there are implications for user education programmes if they lay claim to teaching the whole range of information skills. Furthermore, it became apparent from the conceptual analyses of the terms in section 5.2 that library skills are library dependent, and that libraries are not regarded as the only information resources available to students.

Library skills are transferable to other information seeking situations, as argued in section 5.6.2, and as such they are a prototype of information gathering strategies. Thus library skills could be used as a prototype of skills which can be similarly applied to any situation where information might be located. Such situations could be, for example, looking for a patent specification in the Patent Office, searching for documents in a city council's town planning section, locating sources in an archive or museum, or accessing the information management system of an organization, whether such a system consists of a computerized database or more conventional printed internal documents such as letters, memos and reports.

5.8 CONCLUSION

This investigation has provided an overview of the library skills issue at university level. Terminology related to library skills has been analyzed and it became clear that the meanings of concepts such as user education, library skills and library literacy are in a state of flux owing to

the newer concepts of information skills and information literacy. It appears that librarians could be confusing the wider encompassing concept of information skills with their traditional teaching of library skills - a narrower concept as this study has shown. Library skills have been placed within the information skills typology, with the narrower library skills subsumed under generic information skills.

It appears that library skills could be pivotal for the higher level cognitive skills in the information skills typology, since the skills of evaluating and synthesizing are dependent on information gathering for the information which is "handled" at these levels. However, it would be expedient if the approach taken in user education was to treat library skills as a prototype for information gathering strategies. This means that basic skills which are required for information seeking would be identified in a more general manner, and the transferability of these skills to other situations would have to be made apparent to students. This approach also implies that limiting terminology (such as "library skills") previously used in justifying the teaching of these skills, would need to be attended to.

Using library skills as a prototype for wider application, the information gathering strategies could then be slotted into the broader scheme of information handling skills. The wider sphere within which one operates when considering potential sources of information, could be taught as part of the information awareness framework, where the pre-existing knowledge (stages A, B and C of the library skills typology) would also be included.

The PRO model of library and information skills could be used as a springboard or guideline when considering the incorporation of information gathering skills teaching at university level. The model indicates that a proficiency in information skills could be dependent on library skills. However, it would be more correct to say that a proficiency in information skills is dependent on information gathering

strategies, and that library skills can be used as a prototype of these strategies. Library skills constitute a concrete and easily grasped manifestation of information gathering strategies. Library skills are also intrinsically useful, since most graduates will need to use libraries in their subsequent careers.

Mellon (1987: xiii) refers to library skills as "the step-child of the curriculum", and ponders where user education programmes fit into the curriculum since such instruction is more than simply a library service, but not yet regarded as "teaching in the "coursework" sense of the word". Almost a decade ago, Morris (1983: 23-24) contended that a formal user education programme would be a non-starter until the curriculum required students to actively and independently utilize information - and gave them credit for doing so.

It would appear that if the teaching of library skills were to be successfully argued as necessary for information literacy, an indirect approach might be more successful. If library skills were envisaged as a prototype of information gathering strategies, and the transferability of the skills to new learning situations made evident, librarians would more easily establish themselves in the niche they envisage in information skills teaching.

This chapter has also established the vital role of lecturers in ensuring that university students possess library skills. A university library might provide user education programmes for students, or might propose that library skills teaching be incorporated within the formal curriculum. However, unless the lecturers have a positive attitude towards the library skills issue, the teaching of library skills to university students is unlikely to be effective.

The question arises whether distance learning universities can, due to the geographic distribution of their students, excuse themselves from providing students with the oppor-

tunity of learning library skills. Grimison (1986: 83) maintains that while the educational opportunities provided through distance learning may not be identical to those of residential institutions, it is the responsibility of the distance learning institutions to ensure that they are at least equal.

The following chapters will concentrate on these issues by investigating the library skills requirements of undergraduate students at a distance learning institution, and by exploring the attitudes of the lecturers towards library skills for undergraduate students.

CHAPTER 6

EMPIRICAL STUDIES A AND B: USER EDUCATION AND LIBRARY USE REQUIREMENTS OF FIRST YEAR COURSES AT UNISA

6.1 INTRODUCTION

The model of library and information skills which was drawn up in the previous chapter indicates how library skills slot in at the retrieval stage of information handling skills. It was argued that skills used at the final stage (that is, organization skills such as interpretation and evaluation) are dependent on the retrieval stage for obtaining the information which is "handled" at these higher cognitive levels.

It was suggested that since library skills are intrinsically useful and they constitute a concrete and easily understood manifestation of information retrieval skills, they could be taught as a prototype for information gathering strategies. Thus, if library skills are used as a prototype for wider application, they do have a role in ensuring that graduates are information literate.

It has become apparent thus far that students' utilization of library services is dependent on the role which library use has in their curriculum. Furthermore, it has been seen that library skills programmes require a partnership between librarian and lecturer, and that the success of the programmes is dependent on the positive attitudes of lecturers towards students' need for library skills and towards the programmes themselves.

The study now turns to the empirical parts of the research project: the investigation into the role of library skills in the undergraduate curriculum of a distance learning institution. Before continuing with this section of the study,

it is necessary to look back on the problem statement and recapitulate what the investigation proposes to achieve.

6.1.1 Review of the problem statement

In chapter 1, section 1.2, the problem under investigation was identified as relating to the importance of library skills within the reference framework of information handling skills which ensures that university graduates are information literate. The problem statement reads as follows:

Are library skills an essential component of the information skills that are needed by information literate graduates? If so, is the role of library skills recognized within the first year curriculum of a distance learning university?

The subproblems are identified in the following questions:

1. What does information literacy entail, and how do information skills relate to it?
2. What are library skills?
3. What is the relationship between library skills and information skills?
4. What library skills are expected of first year students?
5. What obstacles are there to teaching library skills as part of the formal curriculum of a distance learning institution?

The first three subproblems were analyzed on a conceptual level in chapters 2 to 5, and it has been argued that if library skills are used as a prototype for information gathering strategies, they have an important role in the information skills which are required for information literacy. The last two subproblems relate to the role of library skills teaching in a distance learning institution, using Unisa as an illustrative example. The empirical studies deal with these two remaining subproblems.

6.1.2 Library skills in the Unisa context

In order to evaluate the role of library skills in the Unisa context, it is necessary to consider whether such skills are presently regarded as necessary for students, and whether the courses for which they are enrolled require of them to make use of the Library. Further questions in this regard are whether user education is provided at this distance learning institution, and what the expectations of Unisa lecturers are with regard to their students' library skills.

The investigations undertaken for this project are confined to the first year of undergraduate study at Unisa, as explained in chapter 1, section 1.2.2.1. Thus, the following aspects will be investigated in order to discover the role of library skills for Unisa undergraduates, with particular reference to their first year of study: the user education programmes provided by the Unisa library; the library use requirements of Unisa first year courses; and the attitudes of Unisa lecturers towards the need for library skills in first year students.

6.2 INTRODUCTION TO THE EMPIRICAL STUDIES

The present chapter outlines the research methodologies and the findings of the first two empirical studies. The research methodology for the third empirical study will be reported in chapter 7, and the findings of the third empirical study will be reported in chapter 8. The empirical studies are referred to as A, B and C.

- * Empirical study A: the user education programmes of the Unisa library.
- * Empirical study B: the library use requirements of Unisa first year courses.
- * Empirical study C: the attitudes of Unisa lecturers

towards library skills in first year students.

6.3 EMPIRICAL STUDY A: USER EDUCATION AT UNISA

Empirical study A is purely a descriptive study, aimed at outlining how the Unisa library has attempted to teach library skills in a distance learning context. No analysis or evaluation of the content or success of the user education programmes is undertaken here, although various implications of the programmes are considered in the final chapter.

The user education programmes of the Library are discussed in detail here for two reasons. First, to provide an overview of Unisa's approach to teaching library skills, especially to first year students. As will become evident in section 6.3.6, the User Education and Library Orientation Division of the Unisa library aims to teach library skills on a formal level. Second, the interest shown by teaching departments at Unisa in the user education programmes provided from 1986 to 1989, is utilized as an indicator in selecting the purposive sample for empirical study C.

User education provided by the Unisa library for students is outlined in formal publications by Williams (1986; 1989) and Willemse (1991: 528-530), and in several unpublished internal reports of the Unisa library from 1987 to 1992. The following description of user education at Unisa is based on these documents, as well as on personal communications (Williams 1989-1992).

6.3.1 Unisa terminology

Since terminology specific to the Unisa context is used in this section, certain concepts need to be defined.

The Department of Library Services is the official designa-

tion of the Unisa main library and its branch libraries; nevertheless, this study refers to the Department as the Unisa library, or simply the Library. Other terminology which is specific to Unisa includes the following:

* User Education and Library Orientation (UELO) division: the division within the Unisa library responsible for providing user education for Unisa students and staff.

* Library Management Committee: a committee comprising the Head of the Unisa library, and all heads of the different divisions within the Library. The objective of the Library Management Committee is to contribute to the effective management of library services. The functions of the committee are, *inter alia*, to make internal policy decisions which relate to more than one division within the Library.

* Library Committee: a committee which advises Unisa's Senate and Council on any library service needs with regard to the teaching and research activities of the University, and which acts in an advisory capacity with regard to the implementation of prescribed policies. The Library Committee comprises the Principal, the Vice-Principals for Tuition and Research, the Registrar (Personnel), the Head of the Unisa library, the Head of the Department of Library and Information Science, and representatives from each of the six Faculties of the university. The Chief Director, Directors and Senior Deputy Directors of the Unisa library act as advisors to the Library Committee.

* Academic Advisory Committee: a committee which advises the Chairman of the University's Senate on administrative and other matters which influence academic affairs.

* Vice-Principal (Tuition): one of the four Vice-Principals of Unisa.

* Group discussions: formal classes for students organized by the teaching departments of Unisa, and held in

Pretoria and other main centres of the country.

Terminology which is used to refer to user education varies in the internal documents consulted. The terms user education, library orientation, library training, library skills, bibliographic instruction, and information skills, are used at different times. In view of the general terminological problems in this area (see chapter 5, section 5.2), an attempt has been made to use only the concepts of user education and library skills here for consistency, except in certain instances where it seemed preferable to use the original terminology of the internal documents.

6.3.2 Background to user education at Unisa

The development of the user education programmes provided by the UELO division of the Unisa library will be outlined chronologically. Only user education aimed at Unisa students will be investigated here, even though the division is involved in other issues including the provision of user education for Unisa staff members. User education programmes for Unisa students were introduced for the first time by the Library in 1986, although the necessity for such programmes had been suggested as early as 1973 (Williams 1976: 7). The late introduction of these programmes (in comparison with other universities) was due to factors associated with the distance learning mode of the University (Williams 1986: 7-8):

[T]he difficulties of offering library instruction in a distance teaching environment seemed insurmountable. If such instruction were to be introduced, the methods adopted by other institutions would not necessarily be applicable; a unique approach would have to be evolved. It was also considered unnecessary as students did not need to use the university library because a postal service was provided. If undergraduate students did come to the library the books they required were easily accessible, being arranged alphabetically by author's surname on the shelves of the Study Collection. Post-graduate students were assisted by subject reference librarians

either by post or personally in the library.

The eventual necessity of introducing user education for Unisa students originated from developments in the early 1980's, when the composition of the student body began changing rapidly and there was an unprecedented growth in the number of underprepared students. The number of students visiting the Unisa library - and other public and university libraries throughout the country - increased. The lack of a library ethos in these students became apparent not only to the Unisa librarians but also to librarians attached to other libraries used by Unisa students (Willemse 1991: 528).

In 1984 the Unisa library began an internal investigation into the need for user education for students. The report of this investigation (cited in Williams 1986: 8-9) confirmed the lack of library skills in both undergraduate and postgraduate Unisa students. The report proposed the introduction of user education programmes. It also provided an overview of the problems inherent in attempting such programmes in a distance learning environment, and suggested that a slide-sound programme and a handbook be considered for the provision of user education. In noting the Library's complementary role in the University's research and teaching functions, the report suggested that the objective of user education would be to prepare the student to cope with future developments in his subject field by equipping him with "bibliographic and information skills". The report further stated that user education should be undertaken with the close cooperation of the academic departments of the university. It also noted findings in the literature that such programmes could be effective only if they formed an integral part of a student's formal study programme.

6.3.3 1986

A coordinator of user education was appointed by the Unisa library in February 1986 to start the UELO division. The aim

and objectives of providing user education to Unisa students (and lecturers) were stated as follows (Unisa. UELO 1987):

Aim:

* to provide orientation and instruction to library users to enable them to utilize library facilities to the maximum, and to satisfy independently their information needs for research and professional purposes.

Objectives:

- * to provide library orientation to Unisa students and lecturers;
- * to provide library instruction in general to Unisa students;
- * to provide Unisa students with formal, subject related bibliographic instruction.

During 1986, library orientation lectures were introduced on an experimental basis, using the lecture method, transparencies, and a video on the Library. Five separate lectures were held (for first year students of English and Philosophy, Theology students, local students who visit the campus on a regular basis, and students from the Pretoria College of Education who were registered for Unisa courses). Each lecture was also advertized through posters displayed in the Library, and leaflets aimed at local students were distributed in the Library. The total attendance at the five lectures was 220 students. Four of the lectures were evaluated by means of a questionnaire which tested students' recall of the content of the lectures (Unisa. UELO 1987; Williams 1986: 14-17).

It was found that the success of the library orientation lectures depended on a positive attitude of the lecturers whose students attended (Williams 1986: 17), this finding corresponding with those evident in the literature that effective user education programmes require cooperation from lecturing staff (see chapter 5, section 5.4.5).

Other user education activities undertaken during 1986 included the preparation of a library orientation workbook (intended to help first year students become effective library users by learning about the library facilities available to them), and a guide to the Library, both publications to be used during orientation lectures the following year. The cooperation of academic departments at Unisa was sought so that library orientation could be presented as part of these departments' first series of group discussions in Pretoria during 1987. Of the 27 departments approached in 1986, 13 agreed to take part in the project (Unisa. UELO 1987).

In 1986, at the request of the Unisa library, the Bureau for Management Information investigated students' use of the Library. The Bureau's report (Unisa. Buro ... 1987) indicated that there was a correlation between the academic achievement of students and their library use, but that relatively few students actually used the Library.

6.3.4 1987

During 1987, 33 orientation lectures were given by the Library to students attending group discussions in Pretoria for 25 separate Unisa courses. The approximately 1 780 students attending these group discussions represented ten percent of the total registration for these courses (Unisa. UELO 1988).

In addition, the library orientation workbook developed in 1986 was sent to 4 000 first year students in selected courses, and distributed to students who attended orientation lectures. In order to evaluate the effectiveness of the workbook, the Library compiled questionnaires based on the workbook. The questionnaires were administered to students attending the library orientation lectures during group discussions for certain courses (representing the thirteen departments which had agreed the previous year to par-

icipate in this project). Five of these courses were selected as project courses. In order to establish a control group, one third of the students registered for the project courses were sent the workbook after the orientation lectures had been held (Williams 1987).

The questionnaires were analyzed to ascertain whether the objective of helping first year students become effective library users had been achieved. The research design did not permit the achievement of conclusive and unambiguous results, and it was decided not to use the workbook in 1988 (Williams 1987; 1989: 207). However, several recommendations were made by the UELO division as a result of this workbook project:

- * a library orientation booklet for first year students who had registered for the first time be developed for 1988;
- * a library instruction booklet for higher undergraduate levels be developed for use in 1988;
- * subject-specific publications for Honours students be developed (Williams 1987).

In 1987, a second investigation was undertaken by the Bureau for Management Information at the request of the Library. The Bureau's report (Unisa. Bureau ... 1988) indicated that students who received the workbook and other library orientation, made the most use of the Unisa library. In 1987, a slide-sound programme on library orientation was also developed by the Library for use the following year.

6.3.5 1988

Under the guidance of the UELO division, the new slide-sound programme was shown at 79 library orientation lectures during group discussions in 1988, and the programme was then revised for use again in 1989. Bibliographic instruction

seminars were held for five groups of Honours students (Unisa. UELO 1989e).

6.3.6 1989

The revised slide-sound programme for first year students was shown during 240 discussion classes (representing 18 different teaching departments' group discussions) held in 1989. This programme reached about 6 500 students, approximately 40% of whom were first year students in the Department of Nursing Science, which showed the programme at discussion classes at various centres. Seminars were again held during the year for five groups of Honours students (Unisa. UELO 1990a).

6.3.6.1 Proposal for formal library skills programmes

During 1989, a proposal that Unisa students be taught library skills formally was made by the UELO division. This proposal was accepted by the Library Management Committee, and then presented to the Library Committee which approved it in principle (Unisa. UELO 1989b and 1989c). A substantial justification for the proposed programme was drawn up (Unisa. UELO 1989d). The proposal was then presented to the Faculties of Theology, Science, and Arts during their faculty meetings in October (and subsequently also to the Faculty of Education at the beginning of 1990). In December the Director of the Unisa library, and the head of the UELO division, discussed the proposed programme with the Vice-Principal (Tuition), who approved the project in principle. He also authorized additional funding for the programme, and suggested that the proposal be submitted to the Academic Advisory Committee. (This was done in March 1990.)

The proposal for the formal library skills programme contained an outline of the possible curriculum. The justification for the introduction of this curriculum bears repeating

here since it identifies the problem areas specific to the Unisa distance learning context (Unisa. UELO 1989b):

The mission of the University of South Africa is to offer internationally recognised university education to suitably qualified persons. It is generally accepted that during tertiary education students should acquire both the skill to use the literature and libraries effectively during their studies and the ability to continue doing so when engaged in a profession.

In order for this ideal to be realised in the Unisa context the following factors need to be addressed:

1. The size and complexity of the university library service which necessitates the formal orientation of students on an ongoing basis.
2. The limited provision of library services available to some sections of the community, both at school and at public library level, which means that many students commence their studies at Unisa with little or no previous experience of using a library.
3. The creation of separate limited collections of recommended literature for undergraduate and Honours courses means that students may obtain a first or even an Honours degree without having to use the rest of the library, because all they have to do is to request the literature selected in advance for them by the teaching staff.
4. The provision of bibliographies, compiled upon request, to post-graduate students which means that even at the research level students do not have to use the library themselves, but can merely request items from a list supplied to them.

The proposed library skills programme was aimed at addressing the problems above, and makes provision for undergraduate as well as postgraduate Unisa students. The curriculum is spread over four levels of study:

- 1st level - upon first registration at first year level;
- 2nd level - at second year status;
- 3rd level - at the commencement of an Honours degree;
- 4th level - at the commencement of a research degree.

Levels 1 and 2 consist of progressive segments of library skills, with the objective that these skills have been mas-

tered by the time the student graduates. Levels 3 and 4 then consist of further progressive segments. The entire curriculum was envisaged as consisting of 25 segments: nine on the first level; seven on the second level; six on the third level; and three on the fourth level.

The aim of the curriculum would be to present the segments so that they were adaptable to all disciplines and could be offered as part of the tutorial matter of a particular course (Unisa. UELO 1989b).

6.3.6.2 An earlier proposal

Of particular interest to this study is an earlier proposed framework for the implementation of the library skills programmes (Unisa. UELO 1989c). This proposal included a section which identified mandatory courses for certain undergraduate degrees (for example, History of Art I is a compulsory course for the BA (Fine Arts) degree), and then highlighted certain first year courses in the BA degree (for example, language courses). The idea being suggested was that the first level of the library skills curriculum be offered in conjunction with these selected first year courses. However, this idea was not followed through in the later proposals which were made to the Library Committee and the Academic Advisory Committee, owing to factors which the Library felt might delay the introduction of the library skills programmes.

6.3.7 1990

As mentioned earlier, a proposal for the formal teaching of library skills was submitted by the Unisa library to the Academic Advisory Committee in March 1990. Under the title "The teaching of information skills to Unisa students" (Unisa. UELO 1990b), the proposal mentioned that the programme would consist of information skills workbooks which would be developed by the Unisa library "in conjunc-

tion with Faculty representatives and other consultants", and suggested that the workbooks could be supplemented by audio-visual programmes, seminars, displays, brochures and guides. The four workbooks envisaged would correspond with the four levels (as identified under section 6.3.6.1), each workbook would be sixteen pages in length, should include self-test exercises and multiple choice questions (to be used for evaluation), and would be updated when necessary. The issue of these workbooks to students would be according to the following timetable:

One ... Workbook for all registered students (undergraduate and post-graduate) in 1991. Thereafter the Workbook be issued to all students upon first registration.

In 1992, a second ... Workbook be issued to students who received Workbook no 1, and who register for a second year, or any other advanced course, diploma or post-graduate degree. Thereafter Workbook no 2 should be issued to students upon initial registration for second year courses, and to all newly registered post-graduate students.

In 1993, ... Workbooks geared to specific honours courses be issued to students for these courses and to students of other post-graduate courses. Thereafter ... [these Workbooks] should be issued to students upon initial registration for honours courses, and to all newly registered post-graduate students.

In 1994, ... Workbooks geared to specific teaching departments be issued to masters and doctors students of these departments, and thereafter to all new registrations for these degrees (Unisa. UELO 1990b).

During 1990 the first workbook was developed by the UELO division for despatch to students in 1991. During the preparation of this workbook, the UELO division perceived that orientation to a library is necessary before instruction in library skills can be effective. The division realized that the utilization of the workbook would be dependent on basic library orientation aspects, and that students would also require printed guides to the Unisa library.

Other user education activities during 1990 included the presentation of five bibliographic instruction seminars for Honours students, and the development of printed guides to the Unisa main library and branch libraries (Unisa. UELO 1991).

6.3.8 1991

The first workbook was distributed to all students in 1991 as planned. The second workbook was developed during 1991 by the UELO division, and the first workbook was revised, both for use by students in 1992. Work also commenced on the third workbooks. Seven bibliographic instruction seminars were presented for postgraduate students, and existing guides and brochures on the Library and its services were revised (Unisa. UELO 1992).

6.3.8.1 "Radio Unisa" programmes

In conjunction with the Student Services Bureau (SSB), the UELO division prepared scripts for two radio programmes on library skills, each presented separately in English and in Afrikaans, and broadcast during 1991 on "Radio Unisa": *Library skills: undergraduate students* (broadcast 29 and 30 March); and *The Honours student: thorough utilisation of the Library* (broadcast 24 and 28 July). (The audio-cassettes on which these programmes have been recorded can be borrowed from the Unisa library, or be bought from the Department of Publishing Services at Unisa.)

6.3.9 Activities planned for 1992

Revised guides to the Library and its services were issued for students and Unisa staff, and students received workbooks 1 and 2 according to the schedule outlined earlier (Unisa. Department of Library Services 1992a; 1992b; 1992c;

1992d). A revised radio programme *Library skills: undergraduate and postgraduate students* was broadcast on "Radio Unisa" on 26 April 1992.

Further activities planned for 1992 by the UELO division included the finalization of the third workbooks (to be introduced for Honours students in 1993), the revision of existing publications and radio programmes, the production of an audio-visual programme, and the development of evaluation techniques for the publications and programmes provided to students. The UELO division regarded as major priorities the evaluation of the effectiveness of the workbooks for undergraduate students, and the definitive establishment of the precise library skills required at each undergraduate level.

6.3.10 Workbook 1

Workbook 1 introduces Unisa first year students to the concept of information literacy, describing it in a sense which relates to library use specifically (Unisa. Department of Library Services 1992c):

The aim of the workbook is to make you aware of your need for information, to teach you how to use libraries and information sources to meet this need, and to help you on the way to information literacy.

Information literacy includes the ability to find publications in a library, and to trace information in books, periodicals, pamphlets and newspapers. The regular use of libraries will improve your information literacy, increase your ability to find information independently and use it effectively.

The sixteen-page workbook introduces the notion of reference sources, using language dictionaries and encyclopaedias as examples, and contains hints on using these two types of reference sources. Periodicals, periodical indexes and abstract journals are briefly introduced. General aspects of library use (benefits of use, library anxiety, library

organization, information desks, catalogues, floor plans, shelf guides, loan procedures, reserving material, and library behaviour) are described, and three self-test exercises (with answers supplied) are included. The workbook has a general approach in that the skills are not related to searching for information in any particular subject field or subject course.

6.3.11 Findings

Empirical study A shows that by 1990 the Unisa library had advanced towards formalizing its user education programmes: a movement had started in the direction of incorporating library skills in the undergraduate and postgraduate curricula. By 1992 the two workbooks which form the foundation of the user education programmes had been received by all undergraduate students at the first and second year levels, with first year students receiving Workbook 1.

The utilization of the workbooks is not compulsory for students, and there is no credit bearing aspect to the utilization of the workbooks. The effectiveness of the workbooks in teaching library skills has not yet been assessed by the Unisa library.

Prior to the introduction of the workbooks, the user education programmes offered by the Unisa library reached over 17 600 students during the period 1986 to 1989. Data obtained from an internal Unisa library document relating to this period were used for empirical study C (see chapter 7).

6.4 EMPIRICAL STUDY B: LIBRARY USE REQUIREMENTS OF UNISA FIRST YEAR COURSES

The first empirical study has shown that Unisa first year students are provided with user education in the form of a library skills workbook. The next empirical study will as-

certain whether the courses for which these students are enrolled require of them to utilize such skills in the most basic manner, that is by using the Study Collection division of the Unisa library.

6.4.1 Introduction

It has been pointed out in earlier chapters that it is theoretically possible for university students to graduate without having shown a competence in library skills, and the problem has been touched on in the Unisa context earlier in this thesis. Before the research methodology for empirical study B is discussed, the essence of the main issues relating to Unisa undergraduate students and their contact with libraries will be briefly summarized, and relevant terminology explained. In addition, explanations of Unisa's system of tutorial letters 101, and the difference between papers and courses, are provided to clarify terminology which is used later in this section.

6.4.1.1 Categories of study material

Unisa uses standard terminology to refer to the study and reading material for its students, using the terms "prescribed", "recommended" and "additional" for categories of such material (Unisa 1992a: par. 4.3).

* **Prescribed material:** This includes compulsory study material, mainly in the form of study guides, tutorial letters and prescribed books or articles. Study guides and tutorial letters which make up part of the prescribed material are sent to students by the university as part of their study package (that is, included in what they receive in return for their tuition fees). Students are required to purchase their own prescribed books or journal articles (the latter usually being contained in a composite work, also called a "reader" or a "book of readings").

* **Recommended material:** This refers to books and journal articles (outside the parameters of prescribed material) which could be used for the completion of assignments. The intention of recommended material is to provide information which is supplementary to the prescribed material, but it is not considered to be essential study matter for either assignment or examination purposes (Unisa 1992a: par. 4.3.2). The university places restrictions on the number of books and journal articles which may be recommended at each level of study. For the first year level, the maximum number of recommended items which may be listed is ten per course although exemptions are made in certain instances (Unisa 1992a: par. 4.6.5 and par. 4.6.5.1).

* **Additional material:** This refers to material which could be used by the student for additional background information, but which is not regarded as essential for either assignment or examination purposes. The intention of additional material is to provide references for students who may wish to read more widely than the prescribed and recommended material.

6.4.1.2 Unisa library services

All Unisa students are entitled to use the University's library services. The Study Collection division of the Unisa library caters for all the recommended material required by undergraduate and postgraduate students, and in most instances keeps multiple copies of such material. This collection of recommended material is housed in the Study Collection, a division which makes up part of the Unisa library in Pretoria, but which is separate from the main (open) collection. Books in the Study Collection are not shelved according to a classification system such as the Dewey Decimal Classification System which is used in the open collection, but are instead arranged alphabetically by author on the shelves. The same alphabetical shelf arrangement is used

for recommended material housed at the Unisa branch libraries.

Students are expected to buy their own prescribed books for their courses. Additional material is not catered for by the Study Collection; if this material is in book form and is in the stock of the Library, it is housed in the open collection of the Unisa main library. If the material is a journal article, the Serial Section of the Library will provide photocopies (for a fee) to the student. If the material is of an audio-visual nature, it is housed in the Library's Audio-visual Section. At first year level, however, few courses use additional material.

Unisa library's lending services to undergraduate students therefore consist essentially of the provision of recommended material by the Study Collection.

6.4.1.3 Students' contact with the Study Collection

Students are informed in general information brochures (for example Unisa 1992b), and usually also in tutorial letters, that all recommended material is obtainable from the Study Collection. They obtain material from the Library in one of two ways:

- * via the postal service, in response by the Library to request cards sent by students; alternatively
- * students may visit one of the Unisa libraries and personally locate and take out on loan the required material.

Even if the student personally locates his own required books in the Study Collection, only the basic skill of a knowledge of the alphabet is involved. It is not even necessary for the student to consult the catalogue.

(Additional material which is housed elsewhere in the

Library is also obtainable through the post by means of request cards; alternatively students could personally visit the Library to obtain the material. In the second instance, students who are not aware of where the additional material is housed would need to locate it themselves. However, additional material is seldom used at first year level.)

6.4.1.4 Tutorial letter 101, and course codes "100"

Tutorial letters are booklets containing additional information for a course, and make up part of the student's study package. Tutorial letters are issued in different series, and numbered consecutively within these series. For example, within the first series of a course, tutorial letter 101 is the first, 102 the second, and so on. All courses have a tutorial letter 101, which contains the basic information about that course, such as assignment topics and references to reading matter.

Tutorial letter 101 for an undergraduate course usually informs the students of prescribed, recommended, and additional material which is relevant for that course. It is the policy of Unisa that tutorial letter 101 for a course is used by the Study Collection as the basis on which recommended books are purchased (Unisa 1992a: par. 1). Therefore, the inclusion of a list of recommended material in tutorial letter 101 of a first year course denotes that the minimum library skill of using library lending services is required by that course - ostensibly required, that is, since the recommended material is not considered essential (Unisa 1992a: par. 4.3.2).

For administrative purposes, Unisa courses are labelled by means of alphanumerical codes which denote both the subject of a course and the level at which a course is being taught. For example, the code for History undergraduate courses is HST. First year courses are denoted by the number series "100" after the course code, second year courses by the num-

ber "200", and so on. Thus, the first year course for History is denoted as HST100, the second year as HST200, and the third as HST300. If a course consists of more than one paper or if it consists of two or more modules, then this is indicated in the numerical part of the code for that course. For example, the first year course for Chemistry (CHE) comprises several modules, which are denoted by differing numbers in the 100 series: thus there are modules CHE101, CHE102, CHE103, and so on. It is therefore possible to discern from a course code at which level it is being taught, the "1--" representing the first year level.

(a) Distinction between "course" and "paper"

Study units at Unisa are made up of courses, half courses, papers or modules. Since this could be confusing in the context of this thesis, the terms "course" and "paper" are used in the empirical studies, with a distinction drawn between the two. When referring to first year study units in general, the term "course" is used. "Paper" has a narrower meaning in that it denotes a subsection or part of a full course (for example, one of the modules of a course in Chemistry), the difference being that a full course - that is, the study unit - could consist either of only one paper, or more than one paper. There are, therefore, more papers than courses in the population surveyed (see section 6.4.2.3).

6.4.1.5 Aim of empirical study B

Although undergraduate students may make use of the Library's open collection if they wish, their needs are met essentially by the Study Collection. This is therefore the only aspect of library service with which undergraduate students are likely to become familiar in relation to their subject courses. Since undergraduate students are able to request all required library material via the postal serv-

ice, it is not necessary for them to even enter a library (any library) during their Unisa studies. Those that do visit the Unisa library, are generally able to locate required material without the necessity of practising even a most basic library skill such as using a catalogue.

It appears, therefore, that the use of Unisa's library services - specifically the Study Collection - represents the minimum contact which a student might be expected to have with any library, and that such contact does not require much in the way of library skills.

It could be inferred from the above that a Unisa student is able to graduate without having to apply library skills. However, one could take the view that even a basic familiarity with library services introduces students to the realm of library skills, and that a library use requirement in a Unisa course implies that the student will need to become familiar (even in a most basic manner) with library services.

Therefore, in order to establish the extent to which Unisa first year students are expected to possess library skills in relation to their subject courses, it is possible to begin the investigation at the bottom end of the scale by merely finding out whether first year courses require students to use Unisa library services in order to obtain recommended material. Use of recommended material would represent the minimum contact students are expected to have with the Library. Any such contact will denote only a very low level of library skills (if any), but will give some indication of the library skills expected in first year courses.

The aim of empirical study B is thus to establish the extent to which first year courses require the use of library material by students. Such use is reflected in the use made of Study Collection material, that is, whether or not recommended books are listed in tutorial letters 101 for first

year courses.

(a) *Delimitation*

Empirical study B is limited to an investigation of the library use requirements of first year courses in 1990. The rationale for investigating requirements at first year level was explained in chapter 1, section 1.2.2.1. In order to establish whether Unisa students are able to graduate without having shown any competence in library skills, the analysis would have to extend beyond the parameters of this study. The situation at second year and subsequent levels, for example, would need to be investigated, as would the extent to which the library skills workbooks introduced from 1991 have succeeded in familiarizing students with library skills.

6.4.2 Research methodology for empirical study B

It can be inferred that in order to obtain an idea of the minimum library skills required for a paper, its tutorial letter 101 could be analyzed to ascertain if recommended books are listed. The tutorial letters 101 for all papers presented during 1990 provided the data required for empirical study B.

6.4.2.1 Concepts and terminology

In both empirical study B and empirical study C, several techniques were used in order to identify specific Unisa papers. The following terminology and related meanings within the framework of this research project has relevance:

* The element, or unit of analysis, in empirical study B is the Unisa first year paper. Babbie (1990: 72) defines the element as "that unit about which information is collected

and which provides the basis of analysis".

* The population for empirical study B is all Unisa first year papers presented for Unisa students in 1990. Babbie (1990: 72) defines population as "the theoretically specified aggregation of survey elements". For empirical study B, a census was undertaken of all the first year papers presented by Unisa in 1990. (There were particular papers which were presented by Unisa on behalf of other educational institutions, for example the Pretoria College of Education, and Helderberg College. These papers were excluded since the Unisa library did not cater for their library needs.)

6.4.2.2 Data collection

The population for empirical study B consists of Unisa first year papers presented for Unisa students in 1990. Relevant data could be obtained by scrutinizing all the tutorial letters 101 for these papers. However, a shorter method was possible, since the Study Collection analyzes all tutorial letters 101 each year and, for administrative purposes, enters certain data onto its database on the UNIS system. It was possible to use a Processing list status report generated by the UNIS system, to identify members of the population. This status report lists all Unisa papers for 1990 and their library material requirements, the latter being identified in various ways:

- * no library material
- * prescribed material only
- * recommended material (more than five items)
- * recommended material (five or less items)
- * library material not part of Study Collection (that is, the material is additional material which could be housed elsewhere in the Library, or not held by the Unisa Library.

Figure 6.1 Detail from Processing List Status Report

DELIVER TO: STUDY COLLECTION

U N I S A L I B R A R Y

01/11/89

52

PROCESSING LIST STATUS REPORT

DEPARTMENT: GEOGRAPHY

DEPT CODE: 001

PROCESSING LIST STATUS	COURSE CODE	COURSE NAME	TUTORIAL LETTER STATUS	CATEGORY
34 LISTS PENDING	MGGMET	METHODS AND TECHNIQUES - MASTER	98 NO T/L REQUIRED	01 NO LIBRARY MATERIAL
34 LISTS PENDING	MGGNAM	METHODS OF GEOGRAPHIC RESEARCH	98 NO T/L REQUIRED	01 NO LIBRARY MATERIAL
34 LISTS PENDING	MGGNYV	GEOGRAPHY OF INDUSTRIAL LOCATIO	98 NO T/L REQUIRED	01 NO LIBRARY MATERIAL
34 LISTS PENDING	MGGRV1	GEOGRAPHY MASTER'S PAPER 1 (NKA	98 NO T/L REQUIRED	01 NO LIBRARY MATERIAL
34 LISTS PENDING	MGGRV2	GEOGRAPHY MASTER'S PAPER 2 (NKA	98 NO T/L REQUIRED	01 NO LIBRARY MATERIAL
34 LISTS PENDING	MGGRV3	GEOGRAPHY MASTER'S PAPER 3 (NKA	98 NO T/L REQUIRED	01 NO LIBRARY MATERIAL
34 LISTS PENDING	MGGSON	REGIONAL DEVELOPMENT (GEOGRAPHY	98 NO T/L REQUIRED	01 NO LIBRARY MATERIAL
34 LISTS PENDING	SOTOPO	SOIL TOPOSEQUENCES	98 NO T/L REQUIRED	01 NO LIBRARY MATERIAL
36 CHECK-LIST PRINTED	GGR100	AARDRYKSKUNDE 1	30 T/L TO SCHEDULING	04 RECOMMENDED - 5 OR LESS
36 CHECK-LIST PRINTED	GGR305	GEOGRAPHY 3 PAPER 305 (BA)	30 T/L TO SCHEDULING	03 PRESCRIBED MATERIAL ONLY
40 ORDER LIST REQUIRED	9G6000	TOEGEPASTE BEVOLKINGSGEOGRAFIE	30 T/L TO SCHEDULING	03 PRESCRIBED MATERIAL ONLY
40 ORDER LIST REQUIRED	CLIM00	TOEGEPASTE KLIMATOLOGIE	30 T/L TO SCHEDULING	04 RECOMMENDED - 5 OR LESS
40 ORDER LIST REQUIRED	FMG600	DIE FILOSOFIE EN METODOLOGIE VA	30 T/L TO SCHEDULING	04 RECOMMENDED - 5 OR LESS
40 ORDER LIST REQUIRED	GGR201	GEOGRAPHY 2 PAPER 201 (BA AND B	30 T/L TO SCHEDULING	03 PRESCRIBED MATERIAL ONLY
40 ORDER LIST REQUIRED	GGR202	GEOGRAPHY 2 PAPER 202 (BSC)	30 T/L TO SCHEDULING	03 PRESCRIBED MATERIAL ONLY
40 ORDER LIST REQUIRED	GGR203	GEOGRAPHY 2 PAPER 203 (BA AND B	30 T/L TO SCHEDULING	04 RECOMMENDED - 5 OR LESS
40 ORDER LIST REQUIRED	GGR204	GEOGRAPHY 2 PAPER 204 (BSC)	30 T/L TO SCHEDULING	04 RECOMMENDED - 5 OR LESS
40 ORDER LIST REQUIRED	GGR205	GEOGRAPHY 2 PAPER 205 (BA)	30 T/L TO SCHEDULING	03 PRESCRIBED MATERIAL ONLY
40 ORDER LIST REQUIRED	GGR206	GEOGRAPHY 2 PAPER 206 (BA)	30 T/L TO SCHEDULING	04 RECOMMENDED - 5 OR LESS
40 ORDER LIST REQUIRED	GGR301	GEOGRAPHY 3 PAPER 301 (BA AND B	30 T/L TO SCHEDULING	01 NO LIBRARY MATERIAL
40 ORDER LIST REQUIRED	GGR302	GEOGRAPHY 3 PAPER 302 (BSC)	30 T/L TO SCHEDULING	04 RECOMMENDED - 5 OR LESS
40 ORDER LIST REQUIRED	GGR303	GEOGRAPHY 3 PAPER 303 (BSC)	30 T/L TO SCHEDULING	03 PRESCRIBED MATERIAL ONLY
40 ORDER LIST REQUIRED	GGR304	GEOGRAPHY 3 PAPER 304 (BSC)	30 T/L TO SCHEDULING	04 RECOMMENDED - 5 OR LESS
40 ORDER LIST REQUIRED	GGR306	GEOGRAPHY 3 PAPER 306 (BA)	30 T/L TO SCHEDULING	03 PRESCRIBED MATERIAL ONLY
40 ORDER LIST REQUIRED	GGR307	GEOGRAPHY 3 PAPER 307 (BA)	30 T/L TO SCHEDULING	04 RECOMMENDED - 5 OR LESS
40 ORDER LIST REQUIRED	HYDR00	TOEGEPASTE HIDROGEOGRAFIE	30 T/L TO SCHEDULING	04 RECOMMENDED - 5 OR LESS
40 ORDER LIST REQUIRED	MTGG00	GEVORDERDE METODES EN TEGNIEKE	30 T/L TO SCHEDULING	03 PRESCRIBED MATERIAL ONLY
40 ORDER LIST REQUIRED	PGG000	TOEGEPASTE POLITIEKE GEOGRAFIE	30 T/L TO SCHEDULING	05 RECOMMENDED - MORE THAN 5
40 ORDER LIST REQUIRED	SG6000	TOEGEPASTE GRONDGEOGRAFIE	30 T/L TO SCHEDULING	03 PRESCRIBED MATERIAL ONLY
40 ORDER LIST REQUIRED	UG6000	TOEGEPASTE NEDERSETTINGSGEOGRAF	30 T/L TO SCHEDULING	05 RECOMMENDED - MORE THAN 5

This information was used to divide the first year papers into two groups: papers which use recommended books and those that do not, on the assumption that use of recommended books constitutes *prima facie* evidence that library use is a requirement for the paper. Thus the use or non-use of recommended books serve as an indicator of a dichotomous variable, "Library use requirement".

6.4.2.3 Data processing

Using the printed status report, all first year papers were identified manually (by the "1--" numerical code after the subject code) by the researcher. First year papers which are presented by Unisa on behalf of other educational institutions were omitted from the list. Data obtained from the status report included the identification of first year papers presented for Unisa students, and the library requirements of these papers. In instances where data in the status report appeared incomplete or indeterminate, the researcher consulted the online UNIS system, the relevant tutorial letters 101, the Unisa calendars for 1990, and the University's undergraduate booklist for publishers, to complete or verify data. (One page from the 116-page Processing list status report can be seen in Figure 6.1.)

The population for empirical study B consists of 179 first year papers, representing 142 first year courses. As mentioned under section 6.4.1.4, "course" here refers to a complete study unit (which may consist of one paper or more), and "paper" refers to subsections of a course (such as a half paper or module).

6.4.3 Analysis of data

Tables 6.1 and 6.2 provide a summary of data relating to the population. Table 6.1 is a breakdown of the 179 Unisa first year papers. The table indicates the number of papers which

use recommended books (that is, show *prima facie* evidence of library use requirements), and the number of papers which do not use recommended books (that is, there is no *prima facie* evidence shown of library use requirements).

Table 6.1 Use of Study Collection by first year papers

First year papers with recommended books	80	44,7%
First year papers with prescribed book(s) only	84 (46,9%)	55,3%
First year papers with no prescribed, recommended or additional material	15 (8,4%)	
TOTALS	179	100%

Table 6.2 Use of Study Collection by first year courses

First year courses with recommended books	70	49,3%
First year courses with prescribed book(s) only	64 (45,1%)	50,7%
First year courses with no prescribed, recommended or additional material	8 (5,6%)	
TOTALS	142	100%

If the analysis is taken further to represent the 142 complete courses (study units) as opposed to papers, the results differ only slightly. This analysis is shown in Table 6.2.

6.4.4 Findings

The survey of all first year papers undertaken in empirical study B revealed that in over half of the first year papers (55,3%), or alternatively half of the first year courses (50,7%), students were not required to make use of the services of the Study Collection.

Simply stated, half of the Unisa first year courses do not expect the minimum library skill requirement of utilizing the Library's lending service.

6.5 DISCUSSION OF EMPIRICAL FINDINGS

Although the findings of empirical study A and empirical study B will be fully interpreted only once empirical study C has been reported on, it is expedient to round off the present chapter by discussing the main implications of the first two studies.

6.5.1 Empirical study A

The data obtained in empirical study A was presented purely descriptively. It is, however, possible to make various inferences from the data if considered in the light of what has been discussed in earlier chapters. It has been seen in this chapter that the Unisa library makes provision for teaching library skills to undergraduate students, and that by 1990 the Library had started moving towards incorporating library skills in the undergraduate curriculum. A user education programme which teaches library skills on four

different levels by means of workbooks was implemented from 1991. By the time this research project was being finalized (September 1992), all Unisa students at first and second level had received library skills workbooks. These workbooks make up part of the study package which a student receives on registration; such a package includes the study material for the subject courses for which the student is registered, as well as general information brochures. The library skills workbook would be regarded as part of the second category, since it is not related to any subject course and is not credit bearing. The utilization of the workbook is not compulsory, and the student is not required to visit a library in order to complete the workbook.

There was no evidence of a partnership between the Library and the lecturers in the preparation and presentation of the first and second workbooks of the programme, since the assistance, opinions or advice of teaching staff had not been sought. Therefore, if there are any particular library skills which lecturers of first year courses might need or like their students to learn, these might not be covered in the workbooks. Thus, although a student was being given the opportunity to learn library skills through the user education programmes, these skills were not necessarily related directly to the information skills aspect of the subject courses he was taking.

Since lecturers did not collaborate in the workbooks for the first and second levels, it is possible that at the end of 1990 (when interviews for empirical study C were undertaken), many lecturers of first year courses were unaware of the plans to introduce the workbooks in 1991.

Further, the success of the workbook project has not yet been assessed by the Library. It is not known whether students who used the first two workbooks have, in fact, learned how to use a library to assist them in their studies. Although all students at first and second level have received workbooks, the number of students who utilized

them is unknown. A point which needs to be made here is that since the completion of the workbook is not credit related, there is little incentive for the student to learn the skills taught in the programme.

6.5.2 Empirical study B

It was found in the second empirical study that half of the first year courses at Unisa do not make use of recommended material. In other words, these courses do not require their students to obtain material from the Study Collection of the Library which, it has been noted, can be regarded as the minimum library skill requirement of an undergraduate student.

There is a contradiction in the provision of recommended material by the Library, and the fact that its use is not required by students in order to pass examinations. Although the finding is that half of the first year courses do not require students to make use of Unisa library's lending services, it could be argued that no first year courses expect students to use library services, since the use of recommended (and additional) material is not regarded as essential for the courses. But perhaps this seems too simplistic and it should rather be assumed that, if a course lists recommended material, and this is then purchased and made available by the Library, students are expected to make use of the sources thus identified and provided for their courses.

If the use of recommended material is not regarded as essential by the university, a first year student is theoretically able to pass the examinations without having used material obtained from the Library. One could therefore infer that the minimum library skill of using the Library's lending service is not a requirement at first year - in spite of the expense of providing the recommended material for these students. It is thus apparent that although

library use is not a requirement in order to pass a first year course, the University does provide students with the opportunity of obtaining material to supplement their prescribed material.

6.6 CONCLUSION

This chapter has outlined the research methodology and findings of the first two empirical studies: empirical study A, which described the user education programmes of the Unisa library; and empirical study B, which investigated the extent to which Unisa first year courses require the use of recommended material via the lending services of the Study Collection.

In spite of first year students at Unisa being provided with user education, it does not seem likely that the present programmes will improve the information skills abilities of these students. It has been shown in earlier chapters that the teaching of information skills (and related library skills) should be taught in a subject related manner and needs to be credit bearing for motivational reasons.

From the above discussion, and noting too that the utilization of the workbooks is not compulsory, it can be inferred from empirical study A and empirical study B that library skills are not required at first year level at Unisa. First year students' chances of becoming familiar with library skills - if they lack these, or utilizing such skills if they already possess them - therefore appear low.

A point needs to be raised with regard to other findings of empirical study B. Half of the first year courses have no recommended material, and students of these courses are not subject even to the narrow information-seeking confines of the "reserves-lecture-textbook" teaching approach mentioned in chapter 5, sections 5.3 and 5.4.4. And even narrower information-seeking skills are expected of students who are

confined to the "lecture-textbook" approach (that is, 45,1% of first year courses). Very narrow information-seeking skills are required of students who obtain all their information requirements from the "lecture" only approach - that is, the study guide and tutorial letters are the sole source of information (5,6% of first year courses).

It therefore appears that many first year students are not expected (and perhaps not encouraged either) to practise information skills in a wider context than is possible by utilizing information from the limited number of sources at their disposal. Not only are students possibly not being made aware in subject courses that libraries are able to provide information for study purposes, it also appears that the students might not be expected (or encouraged?) to become independent learners. As pointed out in chapter 2, section 2.2.1, independent learning is essential for lifelong learning.

Are the majority of Unisa first year students disadvantaged by the lecture-centred approach taken by the University? The extent to which this teaching approach is determined by the lecturers' attitudes to library skills will be discussed in the context of empirical study C.

CHAPTER 7

EMPIRICAL STUDY C: GROUNDED THEORY AND *THE ETHNOGRAPH*

7.1 INTRODUCTION

The aim of empirical study C is to generate a theory of library skills requirements for first year students at Unisa, which is used as an illustrative example of a distance learning institution. The theory is generated from the analysis of interviews held with Unisa lecturers, undertaken to explore their attitudes to library skills at first year level.

This final empirical study builds on the findings of empirical studies A and B and, like the earlier empirical studies, relates to the final two subproblems:

- * What library skills are expected of first year students?
- * What obstacles are there to teaching library skills as part of the formal curriculum of a distance learning institution?

The reason for investigating the lecturer's perception of library skills is that his attitude in this regard could determine whether his students will become familiar with libraries and their services. Since it has been argued that library skills can contribute to the students' mastery of information handling skills, the lecturer's attitude could ultimately affect the extent to which students become information literate. Negative attitudes could be an obstacle to teaching a full range of information handling skills. Furthermore, through questioning the lecturers on library skills, other obstacles to information skills teaching which manifest at a distance learning institution would be revealed.

The present chapter explains the research methodologies for empirical study C. The qualitative approach to the study is first explained. The (quantitative) methodology followed for selecting a purposive sample of first year papers is then described. Thereafter, the preparation of the interview guide and the actual interviews are discussed. The grounded theory - a style of qualitative analysis - which was used for coding the interviews and analyzing and interpreting the data is then explained, as is the use of the computer program *The ethnograph*. The actual interpretation of the data and the proposal for a grounded theory of library skills is undertaken in chapter 8.

The analytic procedures as they are followed for the grounded theory are discussed in detail in the present chapter, since it is not possible to ascertain from a report based on grounded methodology precisely how the concepts and categories arose during the data analysis.

7.2 QUALITATIVE APPROACH

There are two broad methodological approaches to research in the social sciences, namely qualitative and quantitative. Although the selection of the Unisa lecturers for interview purposes was accomplished by means of quantitative research procedures, the research methodology followed for the actual data collection and analysis is according to qualitative research procedures. Strauss and Corbin (1990: 17) regard qualitative research as any kind of research that produces findings which are not arrived at by means of quantification (such as statistical procedures). They state that although some of the data in the research may be quantified, the analysis itself is of a qualitative nature. At this point, it is opportune to describe the nature of qualitative research in more detail by contrasting it with quantitative research.

Mouton and Marais (1988: 155-156) provide an initial simple

differentiation between quantitative and qualitative research, prior to contrasting the two approaches in more detail:

[T]he *quantitative approach* may be described in general terms as that approach to research in the social sciences that is more highly formalized as well as more explicitly controlled, with a range that is more exactly defined, and which, in terms of the methods used, is relatively close to the physical sciences. In contradistinction, *qualitative approaches* are those approaches in which the procedures are not as strictly formalized, while the scope is more likely to be undefined, and a more philosophical mode of operation is adopted.

In considering the three essential components of all research - concepts, hypotheses and observation - Mouton and Marais then compare quantitative and qualitative approaches. In essence, this comparison reveals that

* the concepts in quantitative studies are denotatively specific, whereas those in qualitative studies are likely to be connotatively richer in meaning

* the hypotheses in quantitative studies are stated explicitly and usually formulated before the research begins, whereas hypotheses in qualitative studies are often undeclared or emerge only during the research

* the observations of quantitative researchers are made from a distance and entail imposing an existing system or structure upon phenomena, whereas qualitative researchers become more involved in the phenomena in observations and aim to allow the phenomena to reveal itself (Mouton & Marais 1988: 156-163).

In contrasting the two methodologies, Schurink (1988: 137) explains that the research objective of qualitative research is exploratory and descriptive rather than explanatory. When explanation is involved, this is with a view to understanding ("verstehen") an aspect of reality, as opposed to for-

ulating universal laws. The research objective of quantitative research, on the other hand, is aimed at description and explanation with the main intention of formulating universal laws. Schurink further notes that a qualitative researcher using unstructured interviewing is concerned with understanding rather than explanation, and with the "subjective exploration of reality from the perspective of an insider as opposed to the outsider perspective ... in the quantitative approach".

7.2.1 Rationale for combining quantitative and qualitative methodologies

Strauss and Corbin (1990: 37) outline certain characteristics of qualitative research which provided a motivation for choosing this methodology for empirical study C. A qualitative approach to interviewing lecturers about their attitudes to library skills allows the researcher flexibility and freedom to explore the phenomena in depth. Underlying the approach is the assumption that all of the concepts which pertain to the phenomena relating to library skills for students at a distance learning institution have not yet been identified, or are poorly understood, or are conceptually underdeveloped. There is also the assumption that no researcher has yet approached the phenomena in quite the same way in the particular population or place, that is, the Unisa situation. It could therefore be assumed that it is not yet possible to determine which variables (from the published literature and the documents studied during empirical studies A and B) pertain to the phenomena and which do not.

Linking quantitative and qualitative methodologies in one research project is not uncommon. Fielding and Fielding (1986) discuss how the two can complement and support each other when data are triangulated.

An important reason for using a qualitative approach in this project relates to the researcher's personal and profes-

sional experience with the phenomena being investigated. Having been a Unisa undergraduate student, a lecturer at first year level at the university, and specifically a lecturer in a subject related to information skills, the researcher is likely to be sensitive to the issues being investigated. This "theoretical sensitivity" (see section 7.2.3.2) was one of the factors which determined the type of research method chosen for empirical study C.

7.2.2 Components of qualitative research as they relate to empirical study C

There are three main components of qualitative research: the data, the analytic or interpretive procedures, and the written or verbal report (Strauss & Corbin 1990: 20).

* **The data.** The data make up the component which provides the material basis for the phenomena being investigated in the research project. In the case of empirical study C, the data consist of the transcripts of the interviews held with the lecturers of ten first year papers.

* **Analytic or interpretive procedures.** These are the procedures which are followed in order to arrive at findings based on the data, or to develop theories related to the data. The procedures include the techniques used in order to conceptualize the data. According to the grounded theory style which was used in empirical study C, the essence of the analytic procedure is the coding of the data. Related to the allocation of codes to segments of the data, are the processes of writing memos and diagramming conceptual relationships.

* **The written report.** The form and content of the report depend on the purpose of the research project. In the case of empirical study C, the report forms part of a larger research report, and provides a detailed overview of the entire findings of this empirical part of the larger study un-

dertaken for a doctoral project.

The manner in which the data were obtained for empirical study C is outlined in sections 7.3 and 7.4. The second component, that is the analytic or interpretative procedures as they relate to the grounded theory style of qualitative research, will be outlined in section 7.5, as well as the use of *The ethnograph*. The third component, that is the written report for empirical study C, will be presented in chapter 8.

7.2.3 Grounded theory

There are several types of qualitative research, for example ethnography, the phenomenological approach, conversational analysis, and life histories. (Strauss and Corbin (1990: 21-22) warn of the problems in categorizing qualitative research. They note that in describing qualitative research, the types, purposes, and approaches which guide the analysis often become confused and mixed up in the description.)

The grounded theory style of qualitative research was followed for analyzing the data in empirical study C.

7.2.3.1 Definition of grounded theory

Grounded theory is a theory which is grounded in reality, that is, it is grounded in the data analyzed. Often these data are generated by the researcher, for example in the case of interviews. Strauss and Corbin (1990: 24) explain that the purpose of grounded theory is to build theory that is faithful to the subject being studied and which illuminates the area under investigation. The approach of this method is to use a systematic set of procedures; these enable the researcher to develop an inductively derived theory about a phenomenon.

A grounded theory is one that is inductively derived from the study of the phenomenon it represents. That is, it is discovered, developed, and provisionally verified through systematic data collection and analysis of data pertaining to that phenomenon. Therefore, data collection, analysis, and theory stand in reciprocal relationship with each other. One does not begin with a theory, then prove it. Rather, one begins with an area of study and what is relevant to that area is allowed to emerge (Strauss & Corbin 1990: 23).

In an earlier work, Strauss (1987: 5) stated that grounded theory was "not really a specific method or technique", but was rather a *style* of doing qualitative analysis. The style embodied certain distinct characteristics and methodologies, but the methods proposed were not seen as "hard and fixed rules"; instead they constituted "guidelines" that should help researchers (Strauss 1987: 7). As grounded theory has developed over the years, the guidelines have become more specific. Strauss and Corbin (1990: 27) claim that the procedures meet the criteria for scientific research, namely: "significance, theory-observation, compatibility, generalizability, reproducibility, precision, rigor, and verification". The researcher is subject to a high degree of scientific discipline through the processes of description, definition, and specification of relationships, which grounded theory procedures require. The high degree of rigour which the handling and interpretation of data requires refute any suggestion that grounded theory could be regarded as a "soft science" (Martin & Turner 1986: 143).

7.2.3.2 Reasons for choice

Sensitivity to the phenomenon - or "theoretical sensitivity" - was one of the reasons the researcher had for selecting the grounded theory style of qualitative research. Glaser and Strauss (1967), Glaser (1978), Strauss (1987) and Strauss and Corbin (1990: 41-47) discuss theoretical sensitivity, especially as it relates to grounded theory, since it is this creative attribute which enables the researcher

to develop a theory that is grounded.

Theoretical sensitivity refers to a personal quality of the researcher. It indicates an awareness of the subtleties of meaning of data. ... [It] refers to the attribute of having insight, the ability to give meaning to data, the capacity to understand, and capability to separate the pertinent from that which isn't. All this is done in conceptual rather than concrete terms (Strauss & Corbin 1990: 41-42).

According to Strauss & Corbin (1990: 42-43), there are several sources of theoretical sensitivity. Those sources which the researcher brings to the research situation are: familiarity with literature on theory, research, and the subject field; professional experience in the field which is under investigation; and personal experience with the phenomena being investigated as well as with research. In addition to these sources, the analytic process of interacting with data during the research project, provides an additional source. Strauss and Corbin (1990: 44) believe that theoretical sensitivity enables the researcher to see the situation and its associated data in fresh or new ways, and thereby explore the data's potential for developing theory.

A second reason for choosing grounded theory for empirical study C is that its procedures concentrate on the analysis of the data obtained, since a criticism sometimes levelled at qualitative research is that the methodology often concentrates on the data collection rather than the data analysis. The third reason for deciding on the grounded theory was the availability of several textbooks outlining the approach to this type of research (see section 7.2.3.3). The most recent book (Strauss & Corbin 1990) was used as the main guiding tool in this project, since it is aimed at researchers who are using qualitative analysis for the first time.

Finally, with the grounded theory style, the researcher does not begin with a theory and then set out to prove it. Rather, the researcher begins by studying a phenomenon and

through a process of induction, derives a theory from the data relating to the phenomenon. Allowing a theory to develop from the study of the situation of library skills for first year students at a distance learning institution, would thus provide a unique theory for a unique phenomenon. The grounded theory thus developed would have more relevance to the distance learning situation than models or theories developed for library skills at other types of universities, usually in countries where the problems related to first year students are not necessarily similar to the problems of the Unisa first year student body.

In a report which describes a grounded theory approach to organizational research, Martin and Turner's (1986: 142) explanation of the advantage of this approach bears repeating for its relevance in this regard:

Sometimes a social researcher can approach an area of inquiry with a prior, well-formulated theory that so accurately describes it that the researcher can concentrate on the accumulation of information applicable to the existing theory. Many inquiries, however, do not fit this pattern. Frequently, no relevant theory exists at all, and even when theories concerned with a topic do exist, they may be too remote or abstract to offer much detailed guidance and assistance. Under such circumstances, the researcher will want to develop a theoretical account that facilitates discussion of the general features of the topic under study and is firmly based or grounded in the data collection - a grounded theory. Researchers thus generate grounded theory when they are concerned with the discovery of theory from data, rather than with the testing or verification of existing theories.

(a) Limitation

Sampling in the grounded theory style is usually accomplished through the technique of theoretical sampling (see, for example, Glaser & Strauss 1967: 45-77, and Strauss & Corbin 1990: 176-193) The grounded theory as applied in empirical study C did not use theoretical sampling; instead,

a purposive sample of first year papers was selected by quantitative means. This deviance from the suggested style for grounded theory was owing to the fact that the sampling for empirical study C, and the interviews, were undertaken prior to the researcher's decision to utilize the grounded theory as a particular style for the qualitative analysis of the data.

7.2.3.3 Monographs on grounded theory

Grounded theory as a methodology was co-developed by two sociologists, Barney Glaser and Anselm Strauss. The origin and development of the theory, and the philosophic and research backgrounds of the developers, are discussed elsewhere (for example, Strauss 1987: 5-6; Strauss & Corbin 1990: 24-25). In brief, the theory was developed in the early 1960's by Glaser and Strauss as a result of their research into aspects of health institutions in the USA, notably during field observational studies of how hospital staff handled dying patients. The style of grounded theory was explained in the co-authored volume *The discovery of grounded theory: strategies for qualitative research* (Glaser & Strauss 1967). Other monographs relevant for grounded theory researchers are *Theoretical sensitivity* (Glaser 1978), *Qualitative analysis for social scientists* (Strauss 1987), and *Basics of qualitative research: grounded theory procedures and techniques* (Strauss & Corbin 1990). The last-mentioned text is the most fully developed with regard to the grounded theory style, and was followed for empirical study C. Grounded theory research is common in the social sciences, and a handbook for graduate students of nursing science (Chenitz & Swanson 1986) also proved useful to the researcher.

7.2.3.4 Examples of application

Grounded theory has been applied to research in various

fields of study, for example chronic illness (Charmaz 1990), organizational research (Martin & Turner 1986), family strength (Campbell 1984), experimental parishes (Doran 1980), and academic activities (Conrad 1978). In the library and information science field, Mellon (1986) constructed a grounded theory of library anxiety. A variety of other fields are mentioned by Strauss (1987: xii) and Martin and Turner (1986: 144), the latter noting that projects are difficult to identify since many researchers using grounded theory do not discuss the methods they used to analyze data and develop theories.

7.2.4 *The ethnograph* computer program

The ethnograph, a computer program designed for handling mechanical aspects of data analysis for qualitative research, was used for managing the data of empirical study C. In the past few years, the use of computer programs to assist in qualitative data analysis has grown considerably and there are several programs available today, for mainframe as well as personal computers. A recent monograph (Fielding & Lee: 1991) discusses and evaluates several such programs, including *The ethnograph*.

Since the program version for the IBM-PC and compatible personal computers was completed in May 1985, *The ethnograph* has been used for qualitative research projects in many disciplines (for example nursing, sociology, anthropology, education, social work, speech communication) in North America, Australia and Europe (Seidel, Kjolseth & Seymour 1988: iii). In South Africa, the program is being used by the Research Unit at the Department of Library and Information Science at Unisa.

The ethnograph simplifies the mechanical activities involved in data analysis, such as sorting designated codes and printing data files, and thus helps with time-consuming tasks such as the cutting and pasting of segments of text

which are generally a basic activity of qualitative research. The interpretative and analytic processes of research, however, remain in the domain of the researcher.

The program enables the researcher to introduce text data files which have been prepared by means of word processing, code and sort data files into analytic categories, review text, mark segments, display, sort and print segments in desired sequences - all of which would otherwise need to be done manually with typewriters, photocopies of text, pencils, scissors and glue. As with any computer program, its use is indicated when large quantities of data need to be manipulated.

7.3 SELECTING THE SAMPLE

The aim of sampling in empirical study C is to identify a small number of lecturers for interview purposes. Since the research objective of this auxiliary component of the project is exploratory with a view to "verstehen" (see section 7.2), it was decided to conduct a small number of highly intensive interviews to gain a greater understanding of lecturers' attitudes. The in-depth interviews would provide insight into whether these attitudes might affect students' chances of learning library skills as part of their studies. The aim of the researcher is to gain an understanding of the situation at Unisa, and not to generalize the findings in a wider context. By holding intensive interviews with a small group of lecturers who appear to be representative of Unisa first year lecturers, this aim can be accomplished.

As explained in section 7.2.3.2(a), purposive sampling was used as opposed to the theoretical sampling technique which is usual in the grounded theory style. For a purposive (or judgemental) sample, the researcher subjectively selects units that appear to her to be representative of the population (Nachmias & Nachmias 1987: 185). In order to minimize

the risk of conscious or unconscious bias which could manifest in such a human judgement, a precautionary degree of rigour was introduced in the sampling method by means of stratification and the application of certain criteria.

The element and the population of empirical study C are the same as those for empirical study B (see chapter 6, section 6.4.2.1). The population is here divided into two strata by the application of a variable "Evidence of library use requirements", which has two values: strong evidence and weak evidence of library use requirements. Two indicators are used in measuring this variable. The indicator applied in empirical study B is used again in empirical study C, together with a second indicator. The first indicator was used to ascertain *prima facie* evidence of library use requirements in a first year paper, and had two values: the use of recommended material indicated strong evidence, and weak evidence was indicated by no use of recommended material.

7.3.1 The second indicator

The second indicator introduced in empirical study C relates to the interest shown by departments in the user education programmes offered by the Library. The second indicator also has two values: strong evidence of interest in the programmes, and weak evidence of such interest.

7.3.2 Stratification

By introducing the variable to the population on the basis of the two abovementioned indicators, two strata of papers are identified: papers which show very strong evidence of library use requirements, and papers which show very weak evidence of such requirements.

An internal document of the Unisa library (Unisa. UELO

1989a), which summarizes the involvement of various departments and papers in the user education programmes provided during the period 1986 to 1989, was used as a source of data for the second indicator. (The type of user education programmes offered by the Unisa library during the years 1986 to 1989 are outlined in chapter 6, section 6.3. It should be noted that during 1990 (when the interviews were undertaken), the Library did not provide any user education programmes for undergraduates.)

The document identifies the user education programmes offered for each of the four years, the departments which made use of the programmes, and the departments which did not respond to the Library's offer of programmes. Courses or papers whose students attended the programmes, and the number of students in each course or paper reached by the various programmes, are also identified in the document.

7.3.2.1 Stratum C1

The researcher identified first year papers listed in the document. A total of 39 first year papers had made use of one or more of the Library's user education programmes. The list of papers thus identified by applying the second indicator could be regarded as a list of first year papers which showed a strong interest in providing user education for their students.

The first indicator was then applied to this list of papers, according to the value for strong evidence of library use requirements (that is, use of recommended material in the paper). The outcome of applying the two indicators is stratum C1, which is a list of first year papers showing very strong evidence of library use requirements. Stratum C1 is illustrated in Table 7.1. This table indicates first year papers which used at least one of the user education programmes and which did have recommended material listed in tutorial letters 101 for 1990.

Table 7.1 Stratum C1: First year papers with very strong evidence of library use requirements

DEPARTMENT	PAPER	USER EDUCATION			
		1986	1987	1988	1989
African languages	SZU100			x	x
Afrikaans	AFA100				x
Afrikaans	AFS100				x
Church history	KGA100			x	x
Computer science	INF101				x
Dev. admin. & politics	APL100		x	x	
Dev. admin. & politics	OAD100		x		
English	ENG100	x	x	x	x
German	GER100			x	x
History	HST100		x	x	x
Hist. of art & fine arts	HAR100		x		
Industrial psychology	IPS100				x
Library & info. science	BIB100		x	x	x
Library & info. science	INL100		x		
Missiology	MSA100				x
Musicology	HMU100		x		
Nursing science	CNU100				x
Nursing science	NEP100				x
Nursing science	NUA100				x
Nursing science	NUE100				x
Old & New Testament	BAR100		x		x
Philosophy	PHL100		x		
Political sciences	PBL100		x	x	x
Political sciences	PCS100		x		
Social work	MWK100			x	x

7.3.2.2 Stratum C2

Departments which had shown no interest in the user education programmes were then identified from the document. The first year papers offered by these departments were listed, and the first indicator (using the value for weak evidence of library use requirement) was applied to this list.

Those papers which had no recommended material, and which had not shown an interest in the user education programmes,

were then listed as **stratum C2**. Stratum C2 (see Table 7.2) is thus a list of first year papers showing very weak evidence of library use requirements.

7.3.2.3 The purposive sample

Strata C1 and C2 were then used to purposefully select papers whose lecturers would be interviewed. Five papers were selected from each stratum. For this selection, certain criteria were applied. The lecturer for the paper had to have been involved in the writing of the tutorial letter 101, the rationale being that had he not been satisfied with the paper's use of recommended material, he was in a position to have made alterations in this regard. Not all Faculties were represented in the two strata, and it was thus not possible to apply the criterion of proportional Faculty representation. However, an attempt was made to have as many Faculties as possible represented in the sample. With these criteria in mind, papers were selected randomly from the two strata and were added to the sample if they met the criteria, until five papers from each stratum had been selected. The intention was that should the ten interviews not reach a saturation level with regard to data sought, further papers could then be selected and further interviews held. This was not necessary in practice, since saturation level was reached with the ten interviews.

The ten papers thus selected constitute a purposive sample of first year papers. The lecturers who were the "course leaders" (that is, in charge of the particular paper) were approached for interview purposes.

7.4 THE INTERVIEWS

Guidelines on interviewing and the preparation of an interview guide were obtained from sources such as Lofland and Lofland (1984: 53-63), Swisher and McClure (1984: 85-92),

Table 7.2 Stratum C2: First year papers with very weak evidence of library use requirements

<u>DEPARTMENT</u>	<u>PAPER</u>
Accounting	ACA100
"	ACB100
"	ACT100
Business economics	BEC100
Chemistry	CHE101
"	CHE102
"	CHE103
"	CHE104
"	CHE111
"	CHE112
"	CHL101
"	CHL102
"	CHL103
"	CHL111
"	CHL112
Classics	GRK100
"	LAB100
Maths, Appl. maths & Astron.	APM101 *
"	APM102 *
"	APM103 *
"	MAT101
"	MAT111
Physics	PHY101
"	PHY102
"	PHY103 *
"	PHY104
"	PHY105
"	PHY106
Quantitative management	QMN100 *
Russian	RUS100
Semitics	ARC100
"	ISL100
"	KHB100
"	SMH100
Statistics	SCS100 *
"	STA102 *
"	STA103 *
"	STA104 *
Syst. theol. & theol. ethics	THA100

Papers marked with an asterisk (*) had listed additional material in various forms. For example, APM101 provided a list of seven "further reading titles" which were available "from libraries or bookshops". Although some of these papers could be interpreted as requiring library use (albeit not Study Collection use), it was decided not to omit them from the stratum. Instead, two of these papers were included in the purposive sample to try to establish whether lecturers felt that such indirect library use constituted a library skills requirement.

Swanson (1986: 66-78), and Schurink (1988: 135-139), the first-mentioned being the most useful for the interview guide.

Prior to the interviews with lecturers, two pilot interviews were held. Both persons interviewed were known by the researcher to have been actively involved in improving the information skills of underprepared first year students. They were selected since they had a knowledge of the concept of information skills and an appreciation of the role of library skills in the learning process. One of the persons interviewed was no longer involved in teaching at first year, but had joined the Bureau for University Teaching and in this capacity was indirectly involved in teaching activities. The other person interviewed was directly involved in teaching at first year level. These two pilot interviews resulted in minor changes in the interview guide. After the necessary changes had been made to the interview guide, the researcher contacted the lecturers of the ten papers which constituted the purposive sample of first year papers.

Eight of the papers in the purposive sample were single papers which made up the whole first year course. One paper was a "half-paper", and one was a "module", each making up part of a first year course. With one exception, only one lecturer (the course leader) was interviewed per paper; in the case of the exception, the course leader and another lecturer from the paper were interviewed simultaneously at the course leader's request.

November 1990 was chosen for interviews since at that time of the year most lecturers were involved with examination marking and therefore easy to contact. When making the appointment with the lecturers, the researcher briefly explained what the interview would cover and approximately how long it would take. The interviews were unstructured since the analysis was to follow qualitative procedures, and the researcher made use of an interview guide and a tape recorder.

Prior to the start of the interview, the researcher again briefly explained what the aim of the discussion was and stated that it formed part of the empirical component of a doctoral research project. The concepts of information skills and library skills were briefly introduced, but not explained in very great detail since the meanings which the lecturer attached to these concepts would be explored during the interview. The length of the interviews ranged between twenty and 50 minutes, with an average length of 40 minutes.

Each interview was transcribed by the researcher on the day on which it was held. During the transcription, ideas for analysis were noted down as memos (Lofland & Lofland 1984: 61). The transcriptions were done using the word processing package *Wordstar 2000+*, and then filed for later use with *The ethnograph* (see sections 7.2.4 and 7.5.2).

7.4.1 Preparation of interview guide

An interview guide (see Appendix 2) was used for the informal interviews. The intention of this guide was to ensure that the main aspects on which the interviewer (researcher) required data were covered, but at the same time to allow for the interviewee (lecturer) to be free to provide a narrative in his own words. The guide thus provides a type of checklist, and can also be used as a memory device on which to jot notes during the interview. Lofland and Lofland (1984: 59) describe an interview guide:

[A] guide is not a tightly structured set of questions to be asked verbatim as written, accompanied by an associated range of preworded likely answers. Rather, it is a list of things to be sure to ask about when talking to the person being interviewed. For this reason, the interview instrument is called a *guide* rather than a schedule or questionnaire. You want interviewees to speak freely in their own terms about a set of concerns you bring to the interaction, plus whatever they might introduce. Thus, interviews

might more accurately be termed *guided conversations*.

The preparation of the interview guide was done over several months during the initial literature survey of the research project. As questions (or "puzzlements" (Lofland & Lofland 1984: 53)) arose, these were jotted down on cards, with the main aspect of the question highlighted as a filing element. As the number of questions increased, the cards were continually sorted and resorted into categories. The main categories and their subcategories were then organized at a "global level" (Lofland & Lofland 1984: 54-55), to reflect the most logical approach to the questioning. Topics on which the lecturer would most easily be able to answer questions were placed first, and more difficult or sensitive topics were placed towards the middle and end of the list.

From the global level, topics were expanded by means of "probes" (Lofland & Lofland 1984: 56). The intention of the probe questions was to remind the researcher to probe for aspects of the topic which the lecturer had not spontaneously mentioned in his narrative. Finally, the interview guide was compiled. Attached to this guide was a facesheet and a post-interview comment sheet (Lofland & Lofland 1984: 57-58). The facesheet was completed by the researcher before, during and after the interview; the post-interview comment sheet was completed after the interview.

Lofland and Lofland (1984: 59) note that people vary as to how freely they converse, and that interviewees may provide little in response to questions. It therefore might occur that, with less verbal interviewees, the interviewer will need to go through the interview guide in the order in which the questions are listed.

7.5 ANALYTIC PROCEDURES: GROUNDED THEORY AND *THE ETHNOGRAPH*

Information technology in the form of personal computers and

software packages have enhanced and simplified the qualitative researcher's tasks. Without access to these, the qualitative researcher using coding would need to make multiple copies of notes, and group and regroup these in categories by means of a manual system such as file folders, as outlined in older qualitative research methodology handbooks (for example Lofland and Lofland 1984: 131-135).

The categorization of data for empirical study C is done by means of coding, memoing and drawing diagrams of conceptual relationships. The advantage of using a software program such as *The ethnograph* is that it assists the researcher in the time-consuming tasks inherent in organizing the codes generated in qualitative research, as well as printing out coded segments of the data files.

Qualitative research uses terminology which is characteristic of this particular approach. Some of the terminology used in this chapter is peculiar to either the grounded theory style or *The ethnograph*; in these instances the meanings of the concepts will be provided with reference to sources specific to these two aspects, such as Strauss (1987), Strauss and Corbin (1990) and the user's manual for *The ethnograph* (Seidel, Kjolseth & Seymour 1988).

7.5.1 Grounded theory procedures

Coding is, very simply, a process of analyzing data. The findings of empirical study C are based on the analysis and interpretation of the data contained in the transcripts of the ten interviews, which was accomplished by means of coding and its related activities of using memos and conceptual diagrams.

With particular reference to the purpose of coding in grounded theory, Strauss and Corbin (1990: 57) explain:

Coding represents the operations by which data are broken down, conceptualized, and put back

together in new ways. It is the central process by which theories are built from data.

Strauss (1987: 20-21) defines coding as

the general term for conceptualizing data; thus coding includes raising questions and giving provisional answers (hypotheses) about categories and about their relation. A code is the term for any product of this analysis (whether category or a relation among two or more categories).

The proponents of the grounded theory style of qualitative research stress that ~~the~~ application of procedures and techniques are to be applied flexibly according to circumstances. Strauss and Corbin (1990: 59) note that rigid adherence to the procedures and techniques is not implied. However, there are two basic analytic procedures in qualitative analysis which are stressed when coding in grounded theory: the making of comparisons, and the asking of questions (Glaser 1978: 56-72; Glaser & Strauss 1987: 106-107; Strauss 1987: 58-64; Strauss & Corbin 1990: 63-74). These techniques are emphasized in the grounded theory style since they give precision and specificity to concepts (Strauss & Corbin 1990: 62-63). Comparisons and questions relating to the data (as well as to wider macroscopic elements which have been identified in earlier chapters) were therefore integral to the coding procedures in empirical study C.

Three major types of coding are used in analysis in grounded theory: open coding, axial coding, and selective coding. The lines between the three types are artificial, and the utilization of different types of coding is not necessarily done in consecutive stages (Strauss & Corbin 1990: 58). Each type of coding will be briefly outlined below, with particular reference to the most recent handbook (Strauss & Corbin 1990: 57-142) which provides the novice qualitative researcher with clear guidelines on the coding procedures, in comparison with earlier monographs such as that of Strauss (1987: 55-81) where the procedures were not yet as well refined.

7.5.1.1 Open coding

Open coding involves scrutinizing the data closely - paragraph by paragraph, sentence by sentence, line by line, or even word by word - in order to break it down into discrete parts. Each discrete part (for example, an event, idea, opinion, label) is then given a name which represents that particular phenomenon.

Open coding is the initial, provisional and unrestricted coding of the data with a view to generating *concepts* which appear to describe or fit the phenomena evident in the data. Concepts are the basic units of analysis, defined by Strauss & Corbin (1990: 61) as "conceptual labels placed on discrete happenings, events, and other instances of phenomena" evident in the data. Thus, the first step in the analysis of the data is done through open coding, where the data are conceptualized. As phenomena become evident in the data, questions are asked about these, and similarities and differences between the phenomena are sought and deliberated on.

Concepts are grouped, or classified, by means of categorizing. A *category* is defined as

A classification of concepts. This classification is discovered when concepts are compared one against another and appear to pertain to a similar phenomenon. Thus the concepts are grouped together under a higher order, more abstract concept called a category (Strauss & Corbin 1990: 61).

Categories are given conceptual names which are more abstract than those names allocated to the concepts which are classified under it. Names should preferably be graphic, and logically related to the data they represent. "Catchy" names (called "in vivo codes" (Glaser 1978: 70)) which suggest themselves from the data, provide a common source of names.

Categories are developed in terms of their *properties*, which can then be *dimensionalized*. Properties are "attributes or characteristics pertaining to a category"; dimensionalizing refers to "the process of breaking a property down into its dimensions" (Strauss & Corbin 1990: 61). Dimensions thus represent locations of a property along a continuum (Strauss & Corbin 1990: 69). Relationships between categories and subcategories are recognized from their properties and dimensions.

To summarize, in open coding concepts are identified, and then developed in terms of their properties and dimensions. By means of asking questions of the data, and looking for similarities and differences between phenomena in the data, categories for concepts are formed.

(a) *Methodology for empirical study C*

During open coding for empirical study C, the initial names for concepts were first listed separately (that is, not immediately onto the interview transcripts), with explanatory notes. Most of the names originated from terminology used in the literature consulted during the literature survey and from terminology specific to the Unisa situation. However, there were several "in vivo codes" used as concepts and categories which arose directly from the interviews (for example, "Alcatraz" to describe the Unisa library, and "minimal" to describe students who do the minimum amount of work required for a paper.) The concepts were then classified under relevant categories. A new classified list was then compiled, indicating the categories and related concepts. This list provided the researcher with an outline of concepts which could be allocated during initial open coding. Since *The ethnograph* program limits the length of a name to ten letters (see section 7.5.2.2), the list of concepts was edited so that names conformed to this requirement. That is, the concepts (names) were allocated codes

which identified them discretely.

The codes were then manually entered onto the interview transcripts which consisted of the printed data files generated by *The ethnograph* (see section 7.5.2.1.)

7.5.1.2 Axial coding

In axial coding, intense analysis is undertaken of the central aspects of categories, in order to identify any relationships which might link them together. Strauss (1987: 32) notes that during open coding, the very directed axial coding alternates with the looser open coding as new aspects of a phenomenon are examined, and runs parallel to the relationships being identified in the different categories. Thus, although the two types of coding are separate analytic procedures, the two modes are used alternately. The intense analysis undertaken in axial coding is part of the move towards deciding on eventual core categories.

Strauss & Corbin (1990: 96) define axial coding as

A set of procedures whereby data are put back together in new ways after open coding, by making connections between categories. This is done by utilizing a coding paradigm involving conditions, context, action/interactional strategies and consequences.

Whereas open coding fractures the data, and categories and their properties and dimensions are identified, axial coding puts the data back together in new ways. This is achieved by means of making connections between a category and sub-categories.

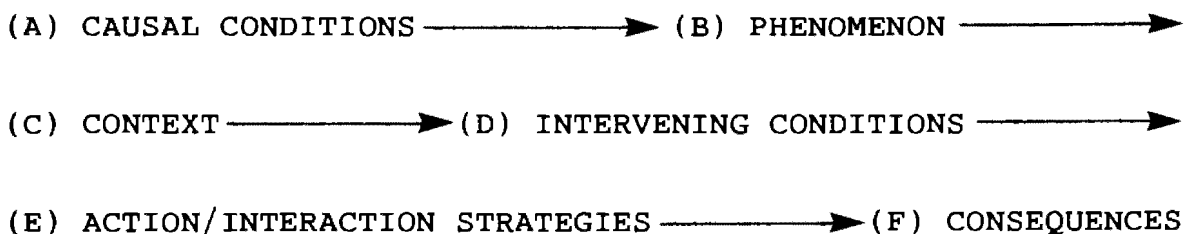
In axial coding, a category is specified in terms of

the conditions that give rise to it; the context (its specific set of properties) in which it is embedded; the action/inter-actional strategies by which it is handled, managed, carried out; and the consequences of those strategies. These

specifying features of a category give it precision, thus we refer to them as subcategories (Strauss & Corbin 1990: 97).

Subcategories are related to their categories through a paradigm model, simplified in Figure 7.1. By enabling the researcher to think about the data in a systematic manner, and to relate data in complex ways, the paradigm model ensures density and precision of analysis. By asking questions and making comparisons while following the paradigm model in axial coding, the researcher links and develops categories.

Figure 7.1 Paradigm model for axial coding (Strauss & Corbin 1990: 99)



The following brief explanations of the components of the paradigm model will illustrate how the model assists the researcher in linking subcategories to a category in a set of relationships (Strauss & Corbin 1990: 96-107):

* **The phenomenon** is the central idea about which a set of actions/interactions is directed, or to which the set is related. The phenomenon is identified by asking questions such as "What do these data refer to? What are the actions/interactions all about?".

* **Causal conditions** are the events, incidents or happenings which lead to the development or occurrence of a phenomenon. It is seldom that a single causal condition produces a phenomenon.

* A context is the specific set of properties which relate to a phenomenon (that is, the location of events or incidents along a dimensional range). Context is also the specific set of conditions within which the action/interaction strategies are taken in order to manage, handle, carry out, and respond to a particular phenomenon.

* Intervening conditions are the broader and more general structural conditions that could have an influence on a phenomenon. Intervening conditions act either to facilitate or to constrain the action/interactional strategies which are taken within a specific context.

* Action/interactional strategies are strategies which are devised in order to manage, handle, carry out, and respond to a phenomenon under a particular set of perceived conditions.

* Consequences are the results or outcomes of action and interaction which are taken in response to a phenomenon.

While asking questions, the researcher moves backwards and forwards in the data looking for evidence to support or refute the questions: that is, question statements are verified against the data. When a question is supported by data, or alternatively not upheld by data, the question can be changed to a statement of relationship (Strauss & Corbin 1990: 108). Thus, the data are constantly examined for evidence which supports the relationships identified in axial coding.

The discovery and specification of differences among and within categories, as well as similarities, is crucially important and at the heart of grounded theory (Strauss & Corbin 1990: 111).

While coding, the researcher moves constantly between inductive and deductive thinking. There is a continual moving between questioning and checking the data, and it is this that eventually makes the theory grounded (Strauss & Corbin

1990: 111).

Patterns in the data which relate to dimensional levels are noted through inductive and deductive thinking. However, any concepts or relationships which are identified through deductive thinking have to be verified against the data - if not supported by the data, they are discarded:

[The] final theory is limited to those categories, their properties and dimensions, and statements of relationships that exist in the actual data collected (Strauss & Corbin 1990: 112).

To summarize: In axial coding, subcategories are related to a category in a question-asking process and by making comparisons by means of inductive and deductive thinking. The process of linking categories at a dimensional level, which is integral to selective coding (the next step), is beginning.

(a) Methodology for empirical study C

The axial coding for empirical study C was done manually on the numbered data files over several sessions, the initial axial coding beginning while the open coding (using the code mapping format required by *The ethnograph*, explained in section 7.5.2.2) was entered on the files for the first time. Memos and conceptual diagrams (see section 7.5.1.4) were compiled throughout the coding processes.

7.5.1.3 Selective coding

Strauss (1987: 33) explains that selective coding occurs within the context which is developed during open coding, but becomes increasingly dominant as it is far more systematic than open coding. At the axial coding stage, categories were allocated according to their properties, dimensions, and paradigmatic relationships. At this level,

the researcher begins to note "possible relationships between major categories along the lines of their properties and dimensions" (Strauss & Corbin 1990: 117).

The generation of a grounded theory occurs around a core category, or more than one category. The core category is the central phenomenon to which all the other categories are related (Strauss & Corbin 1990: 116). In selective coding, therefore, the researcher reaches the stage where he starts to integrate categories to form a grounded theory.

Selective coding [is] the process of selecting the core category, systematically relating it to other categories, validating those relationships, and filling in categories that need further refinement and development (Strauss & Corbin 1990: 116).

Selective coding is accomplished in five steps by means of several techniques (the steps are not linear, and in practice they are indistinguishable): explicating the story line; relating subsidiary categories around the core category by means of the paradigm model; relating categories at the dimensional level; validating relationships against data; and finally, filling in categories. Thereafter, categories are grouped, and the theory is presented either in narrative or diagrammatic form as a grounded theory (Strauss & Corbin 1990: 119-142).

* **Explicating the story line.** The story is a written description of the central phenomenon. The story line is the conceptualization of this story - which is the core category. Making comparisons and asking questions of the data are intrinsic to discovering the story line, which is initially composed as a general descriptive overview of the main problem evident from the data. From this written description of the story, the researcher moves to conceptualization for the story line. One category (sometimes more) becomes the core category. This could be an existing category which appears broad and abstract enough to encompass all that the story describes; alternatively a new name

is allocated as the core category.

* **Relating subsidiary categories to the core category.** Here the paradigm model (see Figure 7.1) is followed in order to relate subcategories to the newly identified core category. Strauss & Corbin (1990: 124) note that "the problem is to identify which category denotes what part of the paradigm", so that the identification orders the categories into subcategories within the paradigmatic relationship. In order to do so, the researcher returns to the written story, and fills in more descriptive detail.

* **Relating categories at the dimensional level.** The expanded story, and the paradigm model, provide the basis for relating categories at the dimensional level.

Using such a story as a guideline, the [researcher] can begin to arrange and rearrange the categories in terms of the paradigm until they seem to fit the story, and to provide an analytic version of the story. Otherwise the categories remain just a list of items (Strauss & Corbin 1990: 127).

The purpose of the storytelling - writing a brief description of the main problem, then expanding this with more detail - is to identify the core category, and thereafter ensure the logical ordering of subsidiary categories. The story could now be graphically illustrated in an analytic diagram which indicates the core category (categories) and how the other categories relate to it (them).

* **Validating relationships.** From this analytic diagram, it is possible to write a hypothetical statement about the relationships between the various categories. This statement is then validated against the data - for example, to check that it holds in a broad sense for each of the persons in the study (Strauss & Corbin 1990: 130).

* **Filling in categories.** In validating the hypothetical statement against the data, it becomes apparent that the

statement lacks the complexity and variation that the researcher had discovered in the data (Strauss & Corbin 1990: 130). Recurring relationships between the properties and the dimensions of categories - or "patterns" (Strauss & Corbin 1990: 130) - became evident during axial coding. The network of conceptual relationships which make up these patterns must be incorporated during the selective coding, since it is these which give the theory its specificity. The network of conceptual relationships enables the researcher to state that under certain conditions, something particular usually occurs (Strauss & Corbin 1990: 130-131).

* **Grouping of categories.** With the patterns taken cognizance of and all the categories filled in, the researcher begins to systematically group the categories.

[The categories] are grouped along the dimensional ranges of their properties in accordance with discovered patterns. This grouping again is done by asking questions and making comparisons (Strauss & Corbin 1990: 132).

Questioning and comparing entails examining the data again critically and systematically. The final product becomes a diagrammatic or narrative explanation of how the data are related at a broad conceptual level, as well as at the property and dimensional levels for each major category. This product now represents the rudiments of a grounded theory (Strauss & Corbin 1990: 133).

(a) Grounding the theory

The theory is now laid out in detail, either diagrammatically or narratively. Using this as a base, statements relating to the category relationships under varying contextual conditions are generated. These statements are then validated against the data (Strauss & Corbin 1990: 133-134). Statements are made to denote the relationships between all the categories; these relationships are then compared against the data to both verify the statement and support

any differences between contexts at the dimensional level (Strauss & Corbin 1990: 138).

Statements are checked against each other to ensure they fit in most cases. Not every single case will necessarily fit exactly (Strauss & Corbin 1990: 139), and statements are then modified until they complement each other in fitting. There are few prototypical cases, where the statement fits the pattern exactly; the researcher has to choose the most appropriate (that is, the best) context in most instances (Strauss & Corbin 1990: 139).

However, a statement must not be forced to fit a context if it does not appear to belong anywhere. There are certain reasons why a match might not be found for a statement (Strauss & Corbin 1990: 139-141):

* The case could represent a *state of transition* because a change has occurred or is occurring within the conditions which lead to the main phenomenon. Such a change would alter the properties along their dimensions as well as the context which leads to action; the case could thus exhibit aspects of two different contexts. The case therefore fits neither contexts, but lies somewhere in the middle. This difference could be accounted for by including it into the grounded theory (Strauss & Corbin 1990: 139; 158-175).

* The case could be affected by *intervening conditions*, which denote a variation of the theory. The researcher could then determine what conditions cause the variation, and build this into the grounded theory (Strauss & Corbin 1990: 140).

Therefore, if a case does not fit the theory, the researcher returns to the data to account for the reasons, and then builds the differences or variations into the theory.

To summarize the processes involved in selective coding: In several steps - which are not taken in linear sequence,

since the researcher moves back and forth between steps - the story line is explicated and the core category (or categories) identified, subsidiary categories are related to the core category using the paradigm model, categories are related at a dimensional level, relationships are validated against the data, categories are filled in and then grouped, statements relating to the category relationships under varying contextual conditions are generated and then validated against the data, and finally a grounded theory is presented in either diagrammatic or narrative form.

(b) Methodology for empirical study C

The selective coding for empirical study C was done manually on both the printed data files and in the form of memos and conceptual diagrams. Once the coding was finalized, *The ethnograph* was used to simplify the coding procedure. Once the coding procedure was complete, the analytic and interpretive steps in selective coding were undertaken; the outcome of this is reported in chapter 8.

Two more aspects of the grounded theory style of qualitative research still need to be described before the final report is presented: the use of memos and conceptual diagrams during the coding procedures.

7.5.1.4 Memos and conceptual diagrams

Memos are notes written by the researcher to himself, related to the products of the analysis during coding procedures. A memo represents the researcher's abstract thinking about the data. Memoing is common to most types of qualitative research, and is discussed in most such methodology handbooks, for example Miles and Huberman (1984: 69-71), who provide Glaser's (1978) definition of a memo:

the theorizing write-up of ideas about codes and their relationships as they strike the analyst while coding ... it can be a sentence, a paragraph or a few pages ... it exhausts the analyst's momentary ideation based on data with perhaps a little conceptual elaboration.

Strauss (1987) also returned to Glaser's work in explaining about memoing, notably with regard to some rules of thumb for compiling memos (Glaser 1978: 81-92):

- * memos and data are kept separately;
- * coding should always be interrupted for writing a memo when an idea occurs;
- * the researcher can literally force himself to write a memo by writing about an aspect which is evident in a code;
- * memos can be modified as the research develops;
- * lists of emergent codes should be kept handy;
- * problematic digressions should be followed through elaboratively to indicate areas for future research;
- * keep memos open as long as resources allow, in order to develop diversity;
- * indicate in the memo when the category has been saturated;
- * talk conceptually about codes in memos - that is, maintain a conceptual level of analysis;
- * with two burning ideas, write them up one at a time in order not to lose either;
- * be flexible with memoing techniques.

Strauss and Corbin (1990: 197-223) discuss memos and diagrams together, noting that whereas memos represent the written form of abstract thinking about data, diagrams are the graphic representations (or visual images) of the relationships between various concepts.

The purpose of memos and diagrams is to add density to concepts and to help the researcher discover relationships between concepts and categories. Strauss and Corbin (1990: 199) note that memos and diagrams help the researcher to

gain analytical distance from the data by a movement away from the data to abstract thinking. Memos and early diagrams are seldom included in the final report of the project, but expanded diagrams often feature.

(b) Methodology for empirical study C

Initially, memos and diagrams were written on filing cards, given a heading and filed alphabetically. The date of initial compilation was indicated, as well as references to where the data which originated the idea could be located (for example, in published sources such as articles, or in data files). The first memos were compiled during the time when the interviews were undertaken, several memos were added whilst the literature search was being completed and several more were included whilst writing earlier chapters of the thesis. However, the majority of memos - and all the conceptual diagrams - were written whilst the researcher was immersed in the analysis of the data by open, axial and selective coding procedures. A parallel memoing system was compiled using word processing: this was helpful in instances when text needed to be moved around or duplicated, for example when several memos needed to "collapse" into one concept or category.

Several times during the coding procedures, the memos and diagrams were read and sorted in order to establish the core category and the relationship of other categories and concepts to the core category. The memos and diagrams were also sorted several times when compiling the story in the selective coding procedure. All memos and diagrams were consulted during the writing of the report in chapter 8; most memos feature in a greatly expanded form in the report.

7.5.2 Methodology for using *The ethnograph*

The ethnograph program assisted in preparing and numbering

data files, which were then coded manually. The code sets were entered on the program, new data files printed out, further coding was done manually, and these codes and necessary editing of existing codes were then entered. Finally, the program was used to search for coded segments and print these out, in preparation for the analysis of the data.

Strauss and Corbin (1990: 249) note:

A qualitative study can be evaluated accurately only if its procedures are sufficiently explicit so that readers ... can assess their appropriateness.

The methodology for each of the stages in the data preparation for the utilization of *The ethnograph* in empirical study C will be briefly explained, with reference to the user's manual for the program (Seidel, Kjolseth, & Seymour 1988).

7.5.2.1 Preparing and numbering data files

The data files referred to here are the transcripts of the ten interviews with Unisa lecturers of first year courses. These files were initially prepared using the *Wordstar 2000* word processing package. The files were then converted to ASCII, and subsequently converted to data files by *The ethnograph* program.

The ethnograph produced a numbered data file for each interview. Such a file consists of the transcript of the interview, with each line of the text numbered consecutively. This numbered data file was then printed, and used for manually coding segments of the data in the file. The length of the data files ranged between nine pages with 458 lines, and eighteen pages with 960 lines. The average length of a data file was fourteen pages of 740 lines.

7.5.2.2 Coding and code mapping

The numbering of each line of the data file assists the researcher in coding: that is, identifying and tagging features evident from the data in the file. This process is referred to as "code mapping" in *The ethnograph*, which describes the process as follows:

The process begins when you come into contact with some data, start to notice certain features and patterns in the data, and then begin to identify and tag those features and patterns for later retrieval and more intensive analysis. We call this process of identifying and tagging things "CODE MAPPING" (Seidel, Kjolseth & Seymour 1988: 7-7).

Coding is basic to the grounded theory style of qualitative research. In *The ethnograph*, the code mapping is done manually by the researcher on the numbered printout of the data file. As the data file was read and re-read during the open, axial and selective coding procedures of grounded theory, codes reflecting elements relevant for the analysis were entered manually on the printout, indicating the line numbers which relate to the particular coded segment.

The program enables the researcher to allocate up to twelve code words per segment, and up to seven overlapping ("nested") levels at these segments. Code words may not be longer than ten letters. The code sets allocated in the code mapping are then transferred into *The ethnograph*.

7.5.2.3 Entering code sets

Since coding is a flexible process which changes as the researcher's thinking about the data evolves, the program allows one to edit the codes (by adding or deleting) at a later stage.

Code sets, and their relevant line numbers (start line numbers and stop line numbers), are entered on the program.

The program also enables one to view on screen a summary table which reflects the code sets for a data file, and also to obtain a printout of all the code sets, the latter having the same format as the summary table.

With the code sets entered on the program, it is possible to print a data file with the codes indicated, if required. However, the main advantage of having the code sets entered on *The ethnograph* is that the program can now enable the researcher to search the data files for coded segments and then print these out - normally a time consuming task when done manually in qualitative research.

7.5.2.4 Searching for coded segments

Searching for coded segments is the heart of *The Ethnograph*. This is the point where you remove things that you have noticed in your data from their original context, and put them into a new context: the context of all similar things (Seidel, Kjolseth & Seymour 1988: 9-1).

The search procedure of the program enables the researcher to locate all occurrences of a code, and retrieve them within the original text segments. It is possible to search for segments using single code words, or combinations of up to five code words. Output from the searching can be sent to the screen, the printer, or a disk file. Search results can be sorted in alphabetical order according to code words if desired.

In empirical study C, the initial search procedure consisted of searching for each individual code in all the files. These were printed out, sorted into categories with reference to the paradigm model, and used as the basis for the analysis and interpretation which is contained in the report in chapter 8. This search procedure of searching for single code words resulted in almost 400 pages of coded segments; an example of such a printout of a coded segment can be seen in Figure 7.2.

Searches for combinations of code words were subsequently undertaken when required during the writing of the report, but these were interpreted on screen. It was found that since nested segments were indicated on the initial printouts (this is evident in Figure 7.2), the searching for combinations of code words in the case of empirical study C was not of particular help.

Although *The ethnograph* offers several facilities beyond those described above, only the basic methodology is outlined here to indicate how the program was used in conjunction with grounded theory, to generate records of instances of codes within the ten data files. Once the occurrences of the codes had been located, the analysis of the data was done by the researcher - that is, the interpretative and analytic aspects of the analysis of the data.

7.6 SUMMARY

This chapter has provided an introduction to the grounded theory which will emerge in the report of empirical study C. The qualitative approach to the interviews and the analysis of the data obtained during the interviews, has been explained. The chapter has outlined the methodology for selecting the purposive sample of first year papers whose lecturers were interviewed in empirical study C. The preparation of the interview guide, and the interviews with lecturers, have also been discussed. The analytic procedures followed for the grounded theory style of analysis of the data, and the utilization of *The ethnograph*, were described in detail in this chapter since their utilization is not easily evident in a report on the findings of a qualitative research project. The report on the findings of empirical study C follows in chapter 8.

Figure 7.2 Example of sorted output from *The ethnograph*, showing coded segments

SORTED OUTPUT FOR FILE BEC
 SORT CODE: LSWHAT

00:01

Page 22

BEC SJB +BEC M 1P

SC: LSWHAT

%-LSWHAT

:	double questions. Do you feel that	433		-%
:	the students actually do require	434		%
:	these skills?	435		%
:	M: What do you mean by library skills,	436		%
:	let me first define that. How to	437		%
:	use the library?	438		%
:	SJB: What do you believe library skills	439		%
:	are?	440		%

\$-READSK

:	M: I don't know. Reading skills. I	441	-\$	%
:	mean, if I read. I was never taught	442		%
:	library skills, but I can read a	443		%
:	book.	444	-\$	%
:	SJB: Right, but now if you go into a	445		%
:	library, what do you need to be	446		%
:	able to do in order to use that	447		%
:	library? That is library skills.	448		%
:	There are different levels -.	449		%
:	M: Ja, so we're not talking about the	450		%
:	skill in using literature	451		%
:	SJB: At a higher level maybe we are. If	452		%
:	you think of basic skills -?.	453		%
:	M: Okay, then. The skills, for, you	454		%

#-ALCATRAZ #-SRL

:	have to split it, for the students	455	-#	%
:	who can come physically here and	456		%
:	they walk into that building, and	457		%
:	this building still puzzles me, I	458		%
:	used to know the old system, and	459		%
:	now I now know the magazines and	460		%
:	journals are on the fourth floor,	461		%
:	and for the rest I go to	462		%
:	or I go to	463		%
:	and I say "Hey, where can I find	464		%
:	this?" But, so ja, the students	465	-#	%
:	who come here will need some train-	466		%
:	ing in how to use this vast (...)	467		%
:	But the student sitting in Kof-	468		%
:	fiefontein doesn't need that. He	469		%
:	needs to know how to fill in a form	470		%
:	to ask the library to send him	471		%
:	something. That does not require	472		%
:	library skills.	473		%
:	SJB: No, it requires an ability to	474		%
:	write. That's not a library skill.	475		%
:	M: So. So then we can talk about what	476		%
:	does he do with the book he gets	477		%

(Continued on next page)

CHAPTER 8

REPORT OF EMPIRICAL STUDY C: GROUNDED THEORY OF LIBRARY SKILLS NESCIENCE AT A DISTANCE LEARNING INSTITUTION

8.1 INTRODUCTION

The goal of grounded theory is to generate a theory that accounts for a pattern of behaviour which is relevant and problematic for those involved. ... The generation of theory occurs around a *core* category (and sometimes more). (Strauss 1987: 34).

The pattern of behaviour which is investigated in empirical study C is the Unisa lecturers' attitudes to library skills for first year students. These attitudes are relevant since a mastery of library skills could contribute to the students' information literacy; negative attitudes would be problematic since they could affect the students' chances of learning library skills. In addition, the teaching of library skills is a problematic issue in a distance learning institution, where the student body is geographically distanced from the campus.

The intention of empirical study C is to explore, by means of in-depth interviews, the role of library skills in the formal curriculum at first year level of a distance learning institution such as Unisa. This study will generate a grounded theory of library skills requirements for first year students at Unisa. The proposal of this theory relates to the problems identified in chapter 1, section 1.2.2.2, notably the role of library skills within the first year curriculum and the obstacles to library skills teaching at a distance learning university.

A grounded theory does not attempt to generalize, but rather to specify (Strauss & Corbin 1990: 191). The Unisa grounded

theory of library skills which is generated in this study is therefore specific to this distance learning institution. As will become evident from the paradigm model utilized in this chapter, the theoretical formulation of the Unisa grounded theory thus applies only to the unique conditions under which the phenomena investigated at Unisa exist. With this limitation in mind, an attempt will be made to generate a generalized theory of library skills teaching which could be helpful for other distance learning institutions (see section 8.4.4).

This chapter consists of the report of the findings of empirical study C. As outlined in chapter 7, the grounded theory style of qualitative analysis was followed. More particularly, guidelines for the grounded theory style as proposed by Strauss and Corbin (1990) were followed. The data on which this report is based were obtained by means of interviews with a purposive sample of lecturers from ten first year papers at Unisa. Owing to the small sample, the researcher notes the limitation of this study. The attitudes of the first year lecturers interviewed cannot be generalized to all Unisa lecturers, but the study does cast light on real problems and attitudes that exist at Unisa.

8.1.1 Format of report

With a view to deciding on the format for reporting the findings of empirical study C, reports of several research projects using the grounded theory style were studied (Conrad 1978; Doran 1980; Campbell 1984; Martin & Turner 1986; Mellon 1986; Miles 1987). Although all projects purported to follow the style for grounded theory, none of them was explicit about how the procedures were followed and techniques applied. The methods of reporting the findings differed in each instance.

Lacking examples of reports based particularly on Strauss and Corbin's (1990) guidelines (which relate essentially to

the analysis of data and not particularly to the format of the report on the findings), the researcher decided to present the theory by following Strauss and Corbin's paradigm model discussed in chapter 7, section 7.5.1.2 and as illustrated in Figure 7.1.

To begin with, the initial story as written during the selective coding is included as an introduction to what the ensuing theory proposes. The story line as originally conceptualized is then included, as this identifies the core category which is the central phenomenon of the theory. The grounded theory is then presented in brief form (Figure 8.1), following the lines of the paradigm model to indicate how concepts and categories identified during the coding procedure led to the development of the proposed grounded theory.

Strauss and Corbin (1990: 133-134) explain that validating the theory against the data completes its grounding, and the theory is then laid out either diagrammatically or narratively. The grounding was initially done by means of the memoing process and with conceptual diagrams, as explained in chapter 7, section 7.5.1.4. In the present chapter, the process is presented in detail - first by means of the brief diagrammatic paradigm model depicting the theory, followed by a detailed narrative which explains how the theory is validated against the data, and then finalized with more detailed diagrams.

The lengthy report which follows consists of discussions of the various categories and related concepts as they feature in the paradigm model. The text is freely illustrated with quotations from the interviews with lecturers, to illuminate the points under discussion. The vignettes and quotations, which are segments of the actual data analyzed, are included for "explanatory power" (May 1986: 150), or, as Strauss (1987: 224) suggests, to explain abstract meanings of the analytic interpretations, for "verstehen", or sometimes just for sheer colour. The report concludes with two diagram-

matic representations of proposed grounded theories (Figures 8.2 and 8.3).

8.2 IDENTIFICATION OF THE CORE CATEGORY

In order to identify the core category to which all other categories, subcategories and concepts relate, a story (see chapter 7, section 7.5.1.3) providing a general descriptive overview of the main topics evident from the interviews was written. From this description, the story line was compiled: this story line names the central phenomenon, and this becomes the core category of the grounded theory.

8.2.1 The story as written during selective coding

"Library skills, and the teaching thereof, are not regarded by lecturers to be important at first year level at Unisa. Lecturers feel that there are other more pressing needs at the entry level, since most students are underprepared for university studies.

There is the need to improve basic skills such as reading, writing and interpretation (that is, broad information skills) alongside teaching subject content in first year papers. Since lecturers need to concentrate on upgrading the general information skills of first year students, they feel that library skills are a "luxury" or "nicety" at this stage.

The wider information skills model provides a framework within which the lecturers teach and assess students, but the role of library skills within this model is not recognized by lecturers.

There seems to be a flip-flop in lecturers' attitudes towards library skills. They regard them as necessary at university level but do not assess them and certainly do not believe that they could be taught within the context of their already overloaded subject courses. Lecturers believe that most first year students are not proficient in library use, but they assume that students learn library skills elsewhere during their university studies. Lecturers assume that students need to use the Library for courses other than those they teach (in later years of

their particular subject course, or for other subject courses). However, they regard reference techniques as a library skill and stress the correct application of a reference technique in essay assignments.

It became apparent that few lecturers had actually thought deeply about the library skills issue.

The use of the Study Collection (recommended books) is no indication that students are expected to have library skills at first year level. Another point with regard to the Study Collection is that its policies seem to inhibit lecturers from either using recommended books for their papers, or from expanding or continuing with the use of recommended books.

The main problem appears to be that the general nature of the first year student body precludes lecturers from considering library skills as part of the learning process: the underprepared students, the heterogeneous student body, and the "minimal" type of student all have relevance here. The distance learning factor also comes into play when considering the teaching of library skills at Unisa."

8.2.2 The story line, core category and central phenomenon

The story line is the conceptualization of the story in order to identify the core category. The core category is the central phenomenon around which all other categories and their related concepts are integrated (Strauss & Corbin 1990: 116-121).

The core category for empirical study C is labelled "*Library skills nescience*".

The rationale for the choice of this conceptual label is that "nescience" is applicable to both the first year students' lack of knowledge or ignorance of library skills, and the lecturers' lack of knowledge or ignorance of the place of library skills in the reference framework of information skills within which they are teaching and assessing their first year students. That the central phenomenon relates to

library skills is not surprising due to the nature of the questions asked during the interviews. Although the concept of library skills was the main issue covered during the interviews, the lecturers brought in the wider context of information skills during their answers. The lecturers did not use the concepts of information skills or information literacy, apparently not being *au fait* with the terms, but the nature of the skills they did mention (for example, cognitive skills such as evaluation and interpretation - and even basic skills such as reading and writing) placed these within the information skills framework.

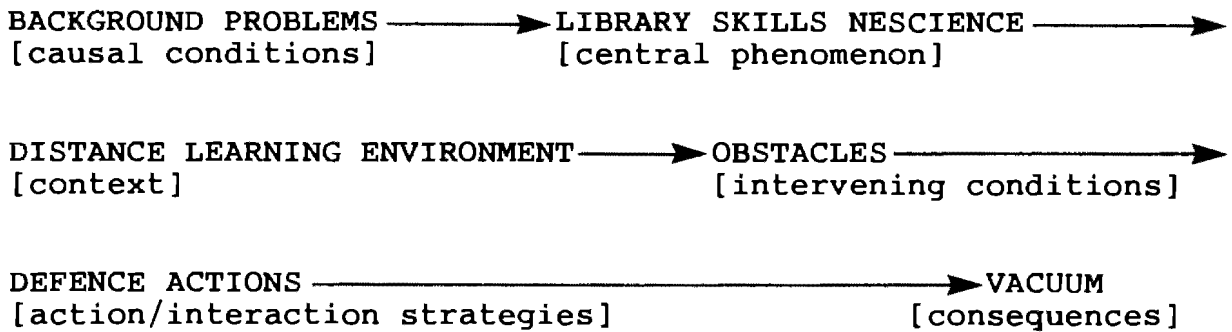
8.3 LIBRARY SKILLS NESCIENCE

The phenomenon of library skills nescience at first year level at Unisa is the core category and central phenomenon around which several other categories revolve. In this report on the investigation into the first year library skills requirements at Unisa, based on interviews with lecturers of first year courses, the discussion revolves around five categories related to the central phenomenon:

1. Background problems (causal conditions)
2. Distance learning environment (context of the central phenomenon)
3. Obstacles (intervening conditions)
4. Defence actions (action/interaction strategies)
5. Vacuum (consequences).

Placed within the Strauss & Corbin (1990: 99) model, the paradigm model of library skills nescience is illustrated in Figure 8.1. The diagram depicts the proposed grounded theory of library skills nescience at a distance learning institution, with particular reference to Unisa. The data which validates this grounded theory will now be explained in the context of the paradigm model of the theory.

Figure 8.1 Paradigm model of library skills nescience



8.3.1 Background problems [CAUSAL]

The phenomenon of first year students at Unisa lacking competence in library skills has several mitigating factors which relate to the students' background prior to their enrolling at the University. Unisa has no control over most of the factors, notably those which related to educational, sociological, economic and political conditions in the country at the time of the interviews (1990) and during the overall research project (1989-1992).

8.3.1.1 Problematic pre-tertiary education system

"Primarily, you see, our student body consists of a large number of students who ... because of the black education system, have had a very poor education ..."

As pointed out in chapter 1, South Africa has a problematic schooling system which has prevailed for decades, affecting the majority of black first year students at Unisa who have enrolled for tertiary studies with an educational disadvantage. From the data it is apparent that lecturers of

first year courses are aware of the lack of general information skills in the majority of their students, and acknowledge that this is due mainly to the pre-tertiary educational system.

In response to a question on whether he believed his students had become familiar with libraries and been taught library skills at school, a lecturer from one of the papers with the highest black enrolment figures commented:

"At the moment I think, the last five years, they're not being taught anything. The chaos in the education system ... [Libraries] are a luxury. Not from my point of view, but from the socio-economic conditions. I think libraries feature very low, if at all. I mean, obtaining textbooks seems to be a major problem ... let alone additional books for library purposes."

The "chaos in the education system" would refer, in a wider sense, to boycotts, stayaways, and strikes (by both teachers and pupils) at black schools. The turmoil which such events have caused in the education system over the past few years has exacerbated the poor schooling received by the majority of black pupils in the country. In addition, since most black secondary schools do not have functional media centres, the teaching of information skills and library skills in particular has been problematic for a number of years.

8.3.1.2 Library skills taught at school level?

Responses by other lecturers with regard to whether they believed their students were familiar with libraries and had been taught library skills at school level were along similar lines to the opinion quoted above:

"Ek dink hulle het daarvan gehoor, maar hoe om dit te gebruik, twyfel ek."

"No I don't. Certainly not."

"I don't think so."

"Doubt it."

"Nee, ek betwyfel maar."

"No."

"I would say not. From my experience of students in this department, I would say that they're not given adequate training at all."

"I don't think so. Even at the better schools ... they might learn how to go to the library and find a book of interest on the shelf and take it to the attendant and have it stamped and take it off and then return it in two weeks or whatever. But I don't think, beyond that, no."

One of the lecturers did not commit himself completely to a negative response, but made a valid point with regard to the way in which such skills need to be taught:

"Ek kan net uit my eie ondervinding sê, hoewel ons in die skool geleer is dat daar sekere vaardighede is wat 'n mens in 'n biblioteek gebruik, is jy nooit gewys op die belang daarvan vir die res van jou lewe nie. Die navorsingsaspek van die gebruik van 'n biblioteek is nooit beklemtoon nie ... die ontsluiting van kennis aspek, die navorsingsaspek, word nie genoeg beklemtoon in die skole nie. Dis bloot ... soos 'n resep wat jy leer, maar om die koek te gaan bak is nog iets anders."

It would seem to be evident from the data that lecturers at first year level do not believe that the majority of their students are competent in library use when they arrive at university. Students who do possess library skills might not be aware that such skills are useful for their university studies. The wider problems of information skills competency, underprepared students, and awareness of the learning process also arose when lecturers spoke about skills:

SJB: "Do you think that students realize that these skills are actually transferrable to other situations?"

X: "I shouldn't think so [laughter.] They should be shown that, yes. Not unless they are very, very aware sort of students. Which most of them aren't [laughter.]"

8.3.1.3 Students underprepared for university studies

One of the strongest properties of the various categories which featured during the analysis of the data was related to the fact that a large percentage of first year students were underprepared for university studies. Without exception, the lecturers mentioned problems in this regard, since it relates directly to the information skills competencies of their students and affects the teaching approach. The lack of general information skills in students entering universities is a problem evident throughout the world. The phenomenon has been discussed in earlier chapters, and is especially relevant to the information skills and information literacy movements.

Although the majority of underprepared students in South Africa have a disadvantaged educational background, many of those from a better schooling system also arrive unprepared for advanced study. The gap between the lecturers' expectations of general information skills competencies and the real situation is naturally most evident at first year level:

"But at first year I think we require more. Whether they do it is another question. Whether they comply with our demands is another question."

Lecturers had mixed opinions on the educational role of the library in reducing the gap between what they expect and what they get with regard to the level of information skills competence. Although the educational role of libraries and library skills has relevance later in this study, it relates here to a lack of library skills and a lack of basic knowledge of books:

"I don't know. I mean, I can only speak for [this subject]. It's the basic student we get. I mean, our students are totally, haven't been exposed to books and libraries, or at least 80% of our students ... and then also, I think one should take into account that we do get very bad students,

undereducated or whatever, not well prepared for university. So by sending them into a library doesn't solve the problem. They need some guidance. I mean, you have to even give them specifically what book, come back and we'll discuss the contents."

The non-residence factor of distance learning increases the problem of underprepared students. One lecturer noted:

"I think more effort must be made, given Unisa's situation and position, to promote the use of libraries and skills ... I think more than any other university, we're sitting with the problem of not having students on the campus, and then attracting very unprepared students. So it's a vicious combination."

Lecturers of first year papers do not feel that the lack of library skills in particular is the major problem. The lack of information skills in general in the underprepared student body becomes the major issue for these lecturers - and the extremely low level of these skills is evidenced in their claims that even basic skills such as reading are poorly developed:

"I have to almost do remedial work in some cases ..."

"Wel, ek kan net sê ek sien ons studente kan nie lees nie. Behalwe dat hulle ook nie kan skryf nie. Maar, ek dink die groot ding is dat die mense nie weet hoe om te lees nie."

"I wouldn't like to single out library skills as being the need ... there are reading skills, comprehension skills, and while I say that it is particularly of black students ... white students are not better off. And more often than not it's white students who ring and say "What do you want?" In other words, they are plugging into how we perceive things and not in fact how, in broad universal terms, how they should be educated. In other words, they're pandering to us. I find an abysmal lack of thinking and so on."

These points predicate the need for academic support programmes, as well as the minimal attitude to their studies that many students take. (The latter aspect is discussed later.)

X: *"If the University is concerned about writing skills [it] should include a writing course, because we cannot teach them. I mean, we're busy trying to teach material, content of another subject, and in the process we must say "Really, you know, the way you express yourself ..."."*

SJB: *"If you think of the movement we have towards academic support, would you then say that this type of additional teaching doesn't really belong in an -" [interrupted]*

X: *"Academic department?"*

SJB: *"Right. You think that it is something separate?"*

X: *"Yes, yes, yes."*

The need for academic support (or bridging) programmes is another property which featured throughout the data.

8.3.1.4 "Minimal" type of student

The data revealed that lecturers felt that the student body comprised a large number of what are here termed "minimal" students - that is, students who do the minimum amount of work, and are not prepared to put in the extra effort which is required for meaningful study. (*"Hulle kies die maklikste pad."*) That students might "plug in" to the minimum the system requires of them, or "pander" (that is, provide what they perceive the standard recipe to be for that particular lecturer's requirements), became evident in the preceding section. The properties of the minimal type of student featured throughout most of the major categories, indicating that lecturers do not believe their students are the cream of the crop. "Minimal" is one of the many *in vivo* codes used in this report; it appeared in the following comment:

"And I find - even at Honours level - that many of the students who worked through Unisa - it's different at Master's level - are minimal types of people. In other words, because many of them are working at full-time jobs ... they do what is the basic expectation ... which is a pity."

Many lecturers felt that the students' attitudes to learning were often flawed:

"Students don't come to university to learn anything ... they come for a degree, and I would say five percent of our students come to learn. The older person, the person who's in business ... your people who do courses for non-degree purposes, they actually come to learn something."

"[The] problem is, quite a lot of students are pretty lazy. They'll do the bare minimum. Not to be horrible, but ... most people avoid difficulty as much as they can."

The minimal type of student is unlikely to become acquainted with the Unisa library:

"If they don't have to use the Library, they won't. Well, would anybody if they didn't have to? Except a very motivated person."

"There is no way a student sitting in, even Johannesburg, will drive over here just to ... look through Unisa library. I mean, there might be the odd exception."

Many of the lecturers mentioned that students' reading skills are not well developed, and that they tend to read the bare minimum. This reflects not only on reading skills and library use, as many students pay little attention to the tutorial letters they receive:

"We pointed out to her that it was all in the first tutorial letter, and she said yes, but she never reads her first tutorial letter. So a lot of students read the bare minimum."

Mention was made of how the schooling system encourages rote learning, resulting in first year students whose cognitive learning abilities are underdeveloped:

"Op skool gaan dit oor onderskeidings ... hulle kry 'n klomp goed in, soos papegaaie leer. Ek is seker besig om te veralgemeen, hoor."

8.3.1.5 Heterogeneous student body

"The problem is that you have at Unisa a great variety of students, from older students to younger students, to people with different lan-

guage backgrounds, colour backgrounds, education systems."

Many lecturers commented that they were generalizing in their comments with regard to first year students, since the student body is so heterogeneous, and some conceded that there are indeed good students. However, the general feeling was that the majority of first year students needed to hone their information skills before they were ready to cope with the subject course material. The heterogeneous student body is a problematic aspect with which lecturers have to deal, and many felt that good students might be "shortchanged" since it had become necessary to spend more time on upgrading and assisting the poorer students.

8.3.1.6 Summary

Unisa students are, on the whole, older than those at residential universities. Unlike first year residential students who are essentially fresh from school, many Unisa students have working experience which might presumably have improved their information skills. In spite of these factors, the background of the first year student body at Unisa results in enormous problems for the lecturers.

The phenomenon of library skills at first year level must therefore to be considered against certain background problems pertaining to the student body; namely, the poor schooling system which results in pupils having a low level of information skills and basically no library skills; students being generally underprepared for tertiary studies; and students being "minimal types" with regard to the desire to learn.

8.3.2 Distance learning environment [CONTEXT]

Several aspects of the Unisa distance teaching method have

been described in earlier chapters. These include the use of prescribed material in the form of prescribed textbooks, and study guides and tutorial letters; recommended material supplied by the Study Collection and additional material which is kept in the open collection; the finding of empirical study B that half of the first year papers use the "lecture-textbook" approach (that is, recommended material is not required for extra subject information); the assumption that students do not require any apparent library skills in order to obtain the recommended material from the Library; and the user education programmes as outlined in empirical study A. These aspects provide the framework within which subject courses are taught, and the only framework within which library skills for students might presumably be relevant at Unisa.

8.3.2.1 Compiling study material

All of the lecturers interviewed in empirical study C had compiled the first tutorial letters which their students used in 1990 and, with only one exception, all concerned had been involved in the writing of the study guides used for their papers that year. This has relevance in that, should a lecturer have been of the opinion that library use requirements for the paper were not satisfactory, he was in a position to make changes in this regard (for example, introduce or drop the use of recommended material). It can therefore be assumed that the indications of library use requirements for the paper for 1990 were consistent with what the lecturer felt his students required of the Library, and indirectly an indication of the extent to which the students were required to make use of library services.

8.3.2.2 Different teaching modes

Half of the sample surveyed for the data in empirical study C represent papers which made use of recommended material,

and half of the represented papers did not. Thus, there is an equal representation of papers which take either the "lecture-textbook" or "lecture only" approach to teaching a subject, and half which take the "reserves-lecture-textbook" approach (chapter 5, section 5.6.4 examines these concepts in relation to the information skills and information literacy issues).

Of the five papers which have no recommended material in the Study Collection, three have prescribed books to accompany the study guides and tutorial letters; one has two prescribed books, the others each have one. Two of the five papers have no prescribed books (that is, the paper is based on the study guides and tutorial letters only). None of these five papers list additional material.

Of the five papers which use the Study Collection, all have prescribed books as well, the number of prescribed books ranging between one and thirteen. The number of recommended titles kept in the Study Collection for these papers ranges between five and twelve. Most of the recommended sources are textbooks in the traditional sense, but there is an increasing use of composite works which are termed "books of readings" or "readers". These are monographs composed of several articles (or chapters from books) by different authors on the same subject. Two of these papers also list additional sources for students. This material is not in the Study Collection.

At first year level there are thus differing requirements for students' extra reading. These range from the "one-stop-shop" papers (the "lecture-only" approach) where none is required since all the necessary information for assignment and examination purposes is in one study guide, to papers which have study guides, prescribed books, recommended reading and additional reading. The additional reading is usually listed for use by what are termed the "better students" who might want to read further on a topic. However, this reading is not really expected by the lec-

turer. A course with ten recommended and sixteen additional titles finds that few students consult all these:

"Very few students do. It's, they tend to limit themselves to the study guide, and then perhaps the prescribed book and then the recommended, to perhaps two or three titles on the recommended list. I think it's very seldom that students consult all the books in the recommended list for any particular assignment. Most often, students don't read all the material."

One paper listed additional material in the form of dictionaries, other reference works and audio-visual material such as videos, cassettes and records, but the lecturer was unable to say to what degree the students used these. One paper provided five one-hour tape cassettes as part of the study material, and also broadcast eight lectures on Radio Unisa. Both media were used only for further explanation of the prescribed textbook.

Teaching of first year subjects at Unisa thus follows the form of the study guide and tutorial letters format (the "lecture") for all papers, but beyond that there could be either no extra information sources or an extensive variety. All papers use the assignment method to assess how well students have grasped the subject matter. Here the students' information skills abilities are tested.

8.3.2.3 Assessing students' information skills

By means of assignments and examinations marked by lecturers, students are assessed as to their grasp of subject matter. Their understanding of the subject matter is indicated by the manner in which they present their assignment or examination answers. Although there are several different methods involved here, the most common methods of setting and answering questions are the written essay-type answers, and the multiple choice questions which are answered on optical reading cards and then marked by computer. Since the introduction of the multiple choice type question there has

been debate among lecturers concerning the extent to which these can effectively assess students' understanding of the subject and their application of cognitive skills.

Although five of the first year papers in the sample had multiple choice question assignments, only two of the lecturers interviewed expressed an opinion on the use of this method. These opinions are opposing and reflect the two main arguments usually presented by lecturers for and against multiple choice questions. It is worth illustrating the arguments here. The one argument relates to the large number of students and consequently the large number of assignments to be marked, the other relates to the belief that the multiple choice question method cannot assess the higher order cognitive skills effectively. One lecturer whose paper and examination consisted entirely of multiple choice questions (which had been thoroughly evaluated as to reliability and success) said:

"We cannot have five, six thousand students sending in essays, and one person marking them ..."

That students prefer the multiple choice questions over essays became evident from this paper, as it had, prior to 1990, introduced a choice between an essay and a multiple choice assignment: *"the highest number of essays for one due date was 38"*. Protagonists of the multiple choice method might find a parallel between this outcome and the minimal type student.

From the lecturer who was against the method:

"I am averse, absolutely dead against [multiple choice questions] ... it means they get through two modules without ever having to express a thought, write an articulated sentence, string together some logical concepts, have a structured way of presenting the material - a beginning, a middle, and an end - and trying to sum up material, synthesize material, giving an indication that they understand it, that they can recall it or that they can interpret it."

This indicates the information skills which are assessed by lecturers. It appears that such assessment is done in the essay-type assignment, since all opinions on this aspect were offered when lecturers discussed essays.

Other indications of the information skills which lecturers assess include:

" ... try to build into it consciousness-raising in terms of how you study ... use three keywords: understand, recall, interpret."

"Kyk, by ons gaan dit oor die logiese oplos van 'n probleem ... Hier sit jy met 'n probleem, nou hoe gaan jy hom oplos? Watter stappe, wat is die logiese en intelligente stappe om te volg ..."

"And built into it is the process of the thinking mechanism as reflective meditateness."

"We require some factual, but what we really want is their interpretive skills."

"Well, I think we look at the general understanding of the concept or the issue which they are to discuss or analyze or describe or perhaps compare. And then we look at, perhaps the ordering of their thoughts, organization of their thoughts, the references to the material."

It appears that the essay is the instrument through which a student is assessed on various higher order cognitive skills alongside the subject content. In most first year papers the students' reference techniques are also assessed. (This will be discussed in more detail in section 8.3.3.5.)

None of the lecturers mentioned that independent information seeking was required of the student; that is, seeking further than the already-provided sources either in the form of a study guide, prescribed book, or pre-selected material obtainable from the Study Collection. Furthermore, the use of the recommended material is not required for a pass mark.

A property which featured at various levels and in several categories throughout the analysis of the data relates to the degree of competence of information skills which are ex-

pected at first year level. It will be included here with the discussion on general information skills.

It appears that the types of skills, and levels of these skills, depend on the subject itself, the student's competence (at minimum level and higher) expected by different departments, and even on the expectations of different lecturers teaching the same paper. The technical aspects related to the presentation of the essay also differ considerably. There is evidence that lecturers feel that there are widely differing requirements at first year level and at subsequent levels as well. The continuum of information source material for papers ranges between one study guide (where all the assignments and the examination questions for the paper are multiple choice), to the following:

SJB: "If they do an assignment based only on the study guide and the prescribed book, can they pass?"

X: "No, well, it depends upon the assignment question. I think it depends upon the lecturer. But I think generally ... we require that students do look at at least some of the recommended books ... If I find they haven't looked at one or two perhaps ... they won't do so well."

"Die student wat wel gebruik maak van eksterne literatuur - ons sal kyk hoe hulle daardie literatuur benader het, hoeveel eksterne bronne het hy geraadpleeg, het hy daardie bronne verstaan in die sin dat hy sy in sy eie woorde weergegee het in die werkopdrag, of is dit bloot 'n geval dat ... hy daardie boeke gaan oorskryf."

In such papers, the use of wider reading sources is claimed to be given recognition, in that higher marks are given to the student. One lecturer would like to see the use of the study guide as a stepping stone to the student's independent use of wider sources, but doubts that the the University intends this to be done at undergraduate level: *"Maar dis seker 'n "pie in the sky"; dit sal ons graag wou sien."*

An example of how widely the type of information skills differs according to the subject is illustrated here with reference to a foreign language paper:

"The questions are very basic, a little bit of interpretation perhaps, but largely translation, grammatical sentences, grammatical comment, this sort of thing. So they wouldn't need to refer to anything."

Several lecturers believed that "other departments" expected less of students than they did with regard to information skills. Comments here include students being "programmed into taking the material, playing with it, regurgitating it", some departments requiring students to "learn a lot of facts", with students tending "to parrot" sources, and other departments "giving them the answer" and not requiring interpretive skills.

The fact that first year papers usually lay the foundation for later years could also apparently colour the department's attitude to the degree of information skills required, especially independent information seeking skills. Some departments prefer students of an introductory course to learn the fundamentals (on which later courses need to build) as given in the prescribed material, and not to find additional information on their own as they could become confused:

"And because ... everything else that would happen hereafter would depend on what happens [at first year], I have chosen to rather teach it than to leave it to be kind of researched on their own."

This lecturer believes that expecting wider information seeking requirements of students would simply turn the course into an "obstacle race", making it difficult for students to proceed.

With the "reserves-lecture-textbook" approach to teaching, the usual method followed is explained here:

"We build it up, from fairly limited reading to more extensive reading. The first assignment is based purely on the study guide, the second one

on the textbook and study guide, and then we give them recommended reading."

It appears from the data that information skills could be evaluated at varying levels of competence by different lecturers - but all lecturers feel they are assessing high level cognitive skills in both essay and multiple choice assignments. Independent information seeking skills are not assessed at all. The minimal information seeking skills which are involved in locating information in already-identified sources are evaluated in only some of the relevant papers. There is therefore not a common level of information skills assessment for first year papers. Students enrolled for more than one first year paper cannot follow a general approach to assignment writing for the various papers. The actual skills which students are being assessed on in conjunction with their grasp of the subject differ from paper to paper, as does the level of acceptance of the lecturer as to the students' information skills competence.

8.3.2.4 Use of the Library

The context within which the Library is used in the Unisa distance learning environment has been described in chapter 6, sections 6.4.1.2 and 6.4.1.3. For example, first year students only need to make use of the Study Collection if the paper has recommended material. They either personally visit a Unisa library and locate books according to the alphabetical shelf arrangement, or send in a postal request. Neither method requires library skills.

Also discussed in chapter 6 (section 6.3) are the user education programmes offered by the Unisa library. In 1990, the year in which the interviews were undertaken, there was no user education provided for undergraduate students (see section 6.3.7). From 1991 onwards, the new programme of library skills workbooks was introduced, and by 1992 all

students at the first and second levels received the workbooks which form the basis of the undergraduate user education programme. The use of the workbooks is neither compulsory or credit bearing, and at first and second levels the skills are not related to particular subjects. The onus is on the student to gain or improve library skills by the workbook method.

None of the lecturers interviewed was aware of the workbook project which would be introduced the following year (1991), but four were aware in general of the earlier user education programmes provided by the Library for students. One lecturer mentioned that the library orientation lecture had been presented during his discussion classes in the past. He said he believed it was a good idea:

"Almost anything that was said to them about the Library would have been news to them and would have been good for them."

But he also noted that the students did not seem to like having the orientation lecture make up part of the discussion class and would have preferred to have subjects related to their paper covered instead. The lecturer also mentioned that the presentation of the orientation programme during discussion classes gave the subject lecturers a chance to have a welcome break from a day of lecturing! Comments from the other three lecturers included: the fact that many students did not like library orientation lectures at subject discussion classes; and that library orientation was probably a good idea for those students who studied regularly in the Library. When a lecturer did not mention these programmes during the interview, the researcher referred to them and explained what they aimed at. In these instances, there were seldom any substantial comments from the lecturers, indicating that they were not very interested.

From the comments made by the two lecturers on the library orientation programmes which were presented from within a subject at discussion classes, and from the lack of comment

from other lecturers interviewed, it appears that neither lecturers nor students took the user education programmes very seriously. This argument is expanded in section 8.3.4.1.

Lecturers seldom referred their first year students to the Library for further information (that is, apart from the recommended material which might be listed for the paper), but would be more inclined to refer postgraduate students - who they felt definitely require library skills.

Lecturers make use of the main Unisa library on the campus for their teaching and research requirements. The lecturers interviewed appeared to rely heavily on their subject reference librarians (that is, librarians who are responsible for assisting the staff and postgraduate students of particular subjects), for whom they have high regard:

"We are blessed with [name of librarian]. She is so committed, and she's extraordinary, and regularly sends us everything that's out."

"Ek dink hulle is wonderlik; regtig waar."

"... die vakreferente ... dis mense wat uit hulle pad uit gaan om inligting aan ons beskikbaar te stel."

In fact, the subject reference librarians provide such an extensive and personalized service that some lecturers do not need to practise their own library skills! The first quotation is from a lecturer who had been explaining what library skills she might expect from her students:

"Nie die lui stappe soos ek maak, en die vakreferent vra ... Ek is 'n baie goeie vriend met my vakreferent, so ek tel 'n telefoon op."

"I used to know the old system, and now I know the magazines and journals are on the fourth floor. And for the rest I go to [names of two librarians] and I say "Hey, where can I find this?""

SJB: "Is u 'n gereelde gebruiker van die biblioteek?"

X: "Ja, maar ek vra die vakreferent altyd."

"Ja, ... as jy 'n navraag het, daar gaan soek hulle die goed, maar ek het dit al self nie gedoen nie. Hulle doen dit vir ons."

Most lecturers felt they used the Unisa library fairly frequently, but had been more regular users before it moved to new premises in 1987. The majority said they were regular library users during their own undergraduate studies (mostly undertaken at residential universities), and the majority relied most heavily on the library when doing research for further degrees. Six of the lecturers interviewed were very happy with the services provided by the Unisa library; the others mentioned several problems they encountered, such as books missing, or the lack of current newspaper files. Other more general problems which all lecturers mentioned (not only those who felt a bit dissatisfied with library services) will be discussed later, since they can be seen as obstacles in the paradigm model.

In two cases where the lecturers were not very familiar with the range of services provided by the Unisa library, and were in fact not very regular users of the Library, their papers fell under the category of the "one-stop-shop". However, on the whole there did not appear to be any correlation between the lecturer's own use of a library (both as a student and as a lecturer), and the use he expected his first year students to make of the Unisa library services.

8.3.2.5 Summary

The context within which the central phenomenon needs to be studied has been outlined. This context reflects several properties of the phenomenon of library skills within the Unisa distance learning environment. The data reveals that the lecturers determine the library use requirements of their first year students, and that these requirements in turn determine whether a paper has what is regarded here as

a "one-stop-shop", "lecture-textbook" or a "reserves-lecture-textbook" type teaching approach. There are differing requirements concerning extra reading (that is, recommended and/or additional material) required of students for first year papers at Unisa.

Lecturers assess their students' information skills competencies alongside their grasp of the subject matter, but it appears that there is not a common level of assessment of information skills at first year level. There is no indication that first year students are required to undertake independent information seeking for their studies. User education programmes are available for students; at this stage the data indicates that neither the students nor the lecturers take these programmes seriously, and there is no indication of a partnership between librarians and lecturers in the preparation and presentation of the programmes. Students at first year level do not require library skills in order to obtain material from the Study Collection, and the lecturers themselves might not need any advanced level of library skills since they receive highly personalized service from the subject reference librarians.

In short: within the distance learning environment of Unisa, the methods and modes of teaching do involve the assessment of students' general information skills, but the assessment of library skills in first year students is precluded. However, non compulsory, non credit bearing library skills workbooks are provided by the UELO division of the Library for all these students.

8.3.3 Obstacles [INTERVENING CONDITIONS]

The obstacles considered in this section are those that relate directly to library skills - obstacles which, according to the data, prevent first year students from learning or applying library skills as part of their studies in the distance learning environment. Obstacles in this regard, as

evident in the data, include the lack of general information skills, the workload of students, limitations concerning access to the Unisa library, the lecturers' perceptions of library skills and their nescience of library skills.

The reason why library skills are given low priority at first year level becomes more apparent when one considers the intervening conditions present in a distance learning environment. It is not that library skills are considered unimportant - indeed, all of the lecturers believe the skills are very necessary for university students - but that they are regarded as a "luxury" at the entry level where "*almost remedial*" teaching needs to be undertaken together with the teaching of the subject content of the paper.

8.3.3.1 Necessity for "almost remedial" teaching

The lack of competence in general information skills in the underprepared student body is one of the largest obstacles faced by those teaching first year students. In addition to teaching subject content, there is a need to teach basic information skills. Lecturers are not all of the same opinion when it comes to upgrading students' information skills. In some papers the lecturers might concentrate on the subject matter and turn a blind eye to information skills-related problems such as poor language usage, whereas lecturers of other papers might try to address the problem by using graded assignments, where students are taught within the assignment writing process how to utilize certain basic information skills. It has become apparent from earlier discussions that the application of library skills does not appear to be a strong prerequisite for first year assignments. The methods used by lecturers in an attempt to close the gap do not include the teaching of the application of library skills, and these are given low priority in first year papers where more pressing needs are evident.

The differing standards required with regard to the applica-

tion of information skills at first year level must be confusing for students, who might find that what is acceptable for one paper is not for another. This could be carried through to library use: if one paper for which the student is registered does not require recommended material, the student could assume that another paper (which lists recommended material for assignment purposes) does not either, and the additional sources will therefore not be consulted by the student.

8.3.3.2 Workload of students

It appears that phenomena which make up the overall background problems in the paradigm model might be having an effect on the amount of study material first year students are required to read or study. The phenomena of underprepared and minimal type students seem to have caused lecturers to feel that first year students cannot carry too heavy a workload. This would seem to manifest itself in the "one-stop-shop" and "lecture-textbook" approach to teaching, and also in the curtailment in the use of recommended material, as will be seen in section 8.3.4.3.

The lecturer of a "one-stop-shop" paper, who believes library skills are important for students, but not at the first year level, made the following comment:

"I mean, they're overwhelmed by the volume of work ... It's such a culture shock, coming from a school to a university. And then to study part-time, which puts extra demands on them time wise. They've got limited time anyway. I think it's unfair, I think it's just overwhelming to ask them to do that [make use of recommended material]. And then for them to then order the book, and the book gets sent, but the book is not quite there ... you know, it's different at a residential university."

A lecturer who is a strong supporter of independent learning, but who feels first year students cannot cope with library skills at this stage, explains in relation to the

study material in her half-course:

"The guide has 296 pages. In addition to that they have a book and a half. Now ... that's a fairly substantial piece of material. Because they do twenty modules of this kind [for the degree], and if you were to visualize that bulk of material placed in any given space of any time, it comes to a very substantial amount."

The lecturer of a course with a large number (80%) of under-prepared students finds he has changed his requirements to fit circumstances. He now regards his previous wider-reading requirements as "impossible standards" for the underprepared students to maintain. He has therefore taken a more lenient approach than before to students' assignments which did not make use of recommended material.

The background of first year students as it affects their preparedness for, and attitude towards university studies therefore appears to be an obstacle for the lecturer who can no longer present the course in the way it had been done in the past. Adjustments in requirements (including curtailing the use of a wider range of information sources) appear to be needed in order to accommodate the high number of under-prepared, and minimal, students. Whether the "adjusted requirements" have the effect of lowering the previously-held academic standards of the first year level, is a moot point.

The general indication from the data which relates to the students' workload is therefore that lecturers believe that the underprepared and minimal first year students do not have the time required for extensive reading on the topics of their subject papers. The implication is that first year students are not expected to use library facilities in order to obtain additional information for study purposes.

8.3.3.3 The Library: access limitations

When considering access to the Unisa library as an obstacle, there are two groups to consider: the lecturers and the students. Three years before the interviews were held with lecturers, the main Library had moved from its original position in the main building on the campus to a new building which was situated quite a distance from the majority of the lecturing staff. Lecturers had not yet become accustomed to the layout of the new Library, some did not see it as an aesthetically appealing building, and all were very negative about its distance from their offices. Possibly the main reasons why lecturers were, however, still satisfied with the services provided by the Library was the personalized services provided by the subject reference librarians, and the fact that the serials section of the Library still delivered to departments the latest journals in their subject fields.

The most common obstacles which limited access to the Library could probably be described as psychological barriers:

"It puts you off. I found in the olden days ... I used to go there regularly ... now I tend to go less often. You just don't feel you want to go there because it takes you hours ..."

"But it's a major exodus nowadays. You must combine [a library visit] with certain things. You're out of your office for a long time ... It's very formidable and unfriendly. I don't know what the point is, but apparently one can't criticize. I just find it unmanageable. I think it's enormous. ... I used to be [a regular user] when it was friendlier and closer, not standing with its back to us."

One of the persons who took part in the pilot interviews for empirical study C, said of the new Library building:

"I mean, it looks like Alcatraz"

and "Alcatraz" subsequently became an *in vivo* code to

describe the adverse feelings about the new library building. Whether the negative attitude towards visiting the Library had an effect on the lecturers' general attitudes towards library skills for their students is difficult to say, but the possibility should be mentioned.

Most lecturers noted that an obvious obstacle to teaching library skills to Unisa students is the fact that they are geographically dispersed, and not necessarily within easy reach of the Library. The isolated student in "Pampoenfontein", "Koffiefontein", "Holfontein", or "some unknown, some small town in Natal", they felt, could not be expected to visit the Library. If the student did visit, he was likely to "go in and be confounded by our marvellous Library".

That students might use a library seriously is not given much thought by many lecturers. Students might merely visit in order to "wander around", or "just walk into a library and look around". They are unfortunate compared to residential university students who might serendipitously discover the university's library:

"If you are on a daily basis on a university campus, you are more likely - it just stands to reason you are more likely to wander into the library, even by mistake."

If the Unisa student does have serious library use intentions, is disadvantaged by having a full-time job which leaves him with insufficient time to study, and has the advantage of living in Pretoria, he can visit the Library. But then there are additional obstacles. He has to "fight" for what he needs:

"When they come up here after work, so is everybody else up here after work, and it's a matter of fight for what you need and use it as quickly as you can, I think."

This comment, from a lecturer of a paper with no library use requirements, indicates ignorance of the situation where

multiple copies of books are kept for first year students, and the Library is busier during office hours than after hours. The lecturers did not take into consideration that, apart from the main Library on the Pretoria campus, there are also library facilities for Unisa students in Cape Town, Durban, East London, Johannesburg, Soweto, Pietersburg, and Windhoek in Namibia.

There are other obstacles:

"Students have to have cards to go into the Library. They might be somewhat intimidated by the administrative procedure ... in getting a card ... And then, the overwhelming size of the Library ... where do you start ... the unfamiliarity with the technology and computers ... how do you use the reference books alongside the computer ..."

An argument presented by a few of the lecturers was that because the student is geographically distanced from the Library he does not need to use it and therefore does not require the skills related to information seeking:

"The vast majority of Unisa students do not need library skills ... because they're too far away to actually physically come here."

"But at Unisa, [library use] is totally impractical ... so I've never considered library skills as part of my teaching media. It's because of the distance orientation, but I'm not anti-library or anti the use of literature or that. That's not what we're talking about. We're actually talking about a very specific situation."

On the other hand, one lecturer believes that the distance factor actually makes the student dependent on a library. This opinion comes from the lecturer of a course which makes extensive use of recommended material, even though the students can pass assignments without using the material:

"Hy sit by die huis en hy moet biblioteekboeke kan gebruik om sy werkopdragte te kan skryf en te kan slaag ... anders as by 'n residensiële universiteit waar 'n biblioteek miskien 'n minder belangrike rol speel ... ek dink Unisa leen hom daartoe as korrespondensie universiteit dat die

studente is afhanklik van 'n biblioteek, of dit spesifiek Unisa is of hulle plaaslike biblioteek, hulle is afhanklik daarvan."

Some lecturers noted that they felt students would be able to cope with the simpler Study Collection system but not with the online catalogue. They themselves found the Library's computerized catalogue system an obstacle, and thought that it would be even more so for students should they need to use it:

"I noticed that a number of the students can find their way around [the Study Collection] because it goes from A to Z, but to find a book just willy-nilly ... and now having to be confounded with this machine, it doesn't make it any easier."

The online catalogue system of Unisa has had an unhappy history in that the system was, at the start, complicated and "unfriendly" - a problem identified by all the lecturers interviewed. Their opinion of the catalogue as a difficult enough tool for lecturers colours their view of their students being able to cope with using it.

" ... to use the catalogue, if it works ..."

"It's less obvious now, but there was a time when you never could use the computer catalogue. Always off-line, which was most frustrating, particularly if you had to walk all that way. That I find really off-putting."

"By a process of trial and error I've worked out how to use it ... I wouldn't expect [first year students] to be able to cope with ... the complexities of that computer system [laughter]. I have some very strong views on it ... it's extremely unfriendly, and having just seen other systems at many other universities round the world ... I cannot understand why it's such an incompetent system, I really can't. And each time they change it it actually seems to get worse."

The overall impression of lecturers was that their first year students would not be able to cope generally with the complications of the sophisticated Unisa library system. This view is illustrated here with reference to how even a

postgraduate student might struggle:

"Kyk, met afstandsonderrig soos wat ons dit by Unisa ken is 'n biblioteek vir die meeste studente 'n monster. Hulle weet nie waar om te gaan nie. My eie vrou het op M-vlak met vrees en bewing na Unisa se bib ingestap en gewonder wat moet sy met die ding doen. So ek kan my nie indink dat die studente 'n vriend in die biblioteek van Unisa sien nie. Nie ons eerstejaarstudente nie, veral as hy iewers ver sit van Pretoria af ... Ek dink dis vir hulle 'n duister plek waar daar baie maniere is om by 'n boek uit te kom waarvan hy niks weet nie."

The feeling was that even if the distance factor was not relevant, the whole library system (and especially the computerized catalogue) would be problematic for students. No lecturers noted that first year students (indeed, all undergraduate students) had no need to use the catalogue or any other services since they were not required for Study Collection use.

That the students' geographic distance from libraries is problematic is undeniable. However, the lecturers' comments made with regard to the role of library skills in a distance learning situation indicated three major issues with regard to their library skills nescience. First, that lecturers had given the library skills issue little thought and were ignorant of the role such skills could play in the learning process. Second, an aspect which has become evident in the preceding section, is that they suffered from the "flip-flop" syndrome. Finally, lecturers gave little thought to the fact that the main Unisa library and its branch libraries are located in areas of South Africa (and Namibia) where the majority of the students are concentrated.

8.3.3.4 Lecturers' library skills nescience

That the lecturers were somewhat taken aback at being asked questions about their attitude to library skills for their students was evident in most of the interviews. Two examples

illustrate the lack of thinking on the issue:

"Yes, umm, I don't think, yes, it's difficult. Umm ... I don't know. Can you repeat that again? [Question was then rephrased] ... Uh, I mean, you know - detective work. Yes. I really don't know."

"Ja, but I mean a thing like that would be useless for a B. statistics degree. You know, I mean it's not really related to anything."

One lecturer admitted outright that he'd never given the matter much thought:

"You know, you're asking me questions that I've never thought about, because I haven't sat down and thought about the Library like you have thought about it."

If pressed on the issue of library skills being taught to students, some lecturers were not very enthusiastic:

X: "Well, somewhere they need to be taught about it. Because, I mean if they're not going to use it in our course they're definitely going to use it in one of the others."

SJB: "Right, so you see a need for these skills to be taught to students?"

X: "Well, maybe a little, like a self-contained guide being sent to every first year student when he registers, which he can always look at later for reference purposes."

SJB: "Do you feel one should start to teach them at first year level?"

X: "Ja, I suppose so."

When interviewing two lecturers simultaneously for one paper which did not have library use requirements, it became apparent that the two had differing (but not firm) opinions. Both had earlier said that library use was not required in any of the undergraduate papers in their subject. From the following dialogue between the two, it seems likely that neither had thought about the problem:

X: "At third year, I think you need to be able to make use of the Library. Definitely on a higher level..."

Y: "No, I want to disagree with you. I think you can go through until third year without using the Library."

X: "Ja, not extensively, but to a small degree. I

didn't mean extensively."

Y: "I mean he does not need it to pass."

X: "No, definitely not. No, that's just for ... if he wants to know more about the subject, but he can pass it without."

One lecturer spent a long time explaining how he believed Unisa students make use of other university libraries to obtain material. The method involves knowing someone who works in that library who will then obtain the required books for them, thus not necessitating the use of Unisa's library system:

"Kom ons neem 'n voorbeeld van 'n student wat in Bloemfontein bly, wat 'n kennis het in die Vrystaatse universiteitsbiblioteek ... Sy sal vir daardie betrokke persoon in daardie biblioteek vra om een of twee boeke uit te neem ... Ek dink dit gebeur dalk dikwels."

That this might occur occasionally is not queried here; the point is that the lecturer believes this is more common than Unisa students using the Unisa libraries. The lecturer is so convinced that students avoid Unisa's libraries that he suggested a possible survey:

"Dit sal interessant wees om so 'n studie te onderneem om vas te stel wat die persentasie [Unisa studente] is wat die biblioteke van Unisa wel gebruik."

When each interview was viewed globally, this showed that most of the lecturers suffered a "flip-flop" in attitudes to library skills. For example, a lecturer might state that his students were not able to use libraries but then would later mention that he often saw some of his students using the online catalogue. Lecturers who were emphatic that it was not possible to include library skills teaching at first year level, later suggested that the place for teaching such skills lay in a first level language course such as English, a general first year skills course, a short course presented by the Library, or a bridging programme. The general attitude was that students should eventually learn these skills, but that the lecturer himself was not responsible

for teaching library skills. A common "flip-flop" case is the fact that courses might list recommended reading but not actually require its use by students.

Another noticeable paradox is that lecturers believe they are regular Library users, but then say they go there less frequently because of its distance from their offices. When asked about their use of facilities and technology such as interlibrary loans and CD-ROM searches, it became apparent that on the whole they were not regular users and not always aware of the newer technology used in the Unisa library. This could be due to the personalized services provided by the subject reference librarians.

It appears that few of the lecturers interviewed had ever clearly thought about, or evaluated, their students' use of libraries (or their own use of the Library). None of the lecturers recalled reading items on library use which had appeared in the journal *Progressio* (issued by the Bureau for University Teaching at Unisa and distributed free of charge to all academic staff), and it appears that the topic was not of much interest to them. Possibly the only times that a lecturer is faced with the issue of his students' library use is when he is planning the first tutorial letter and needs to consider the list of recommended reading (when relevant). More commonly, a lecturer might become aware of library use when a student requests extension for an assignment because he has not yet obtained a recommended book.

8.3.3.5 Lecturers' perception of library skills

The general unawareness of the role of library skills has a consequence: most of the lecturers did not acknowledge a link between library skills and other aspects such as information skills, independent learning, or basic research methodology. Although they did claim to believe that university students need library skills, they were not very sure what these comprise. This was evident earlier in their

hesitant replies on what library skills are. The lecturers were vague about the library skills which undergraduate students might require, and "flip-flop" views were evident here. Lecturers were also vague about library skills for postgraduate students, but were more definite about these advanced students needing to apply the skills for their studies.

What do the lecturers believe the library skills are that their students might require? The concept of library skills was introduced by the researcher very briefly before the interview began; the skills were not identified, since the lecturer's views of what the skills are was to be explored during the interview.

SJB: "Do you feel that the students actually do require these [library] skills?"

X: "What do you mean by library skills, let me first define that. How to use the Library?"

SJB: "What do you believe library skills are?"

X: "I don't know. Reading skills? I mean, if I read. I was never taught library skills, but I can read a book."

SJB: "Right. But now, if you go into a library, what do you need to be able to do in order to use that library? That is library skills. There are different levels -" [interrupted]

X: "Ja, so we're not talking about the skill in using literature?"

SJB: "At a higher level maybe we are. If you think of basic skills -" [interrupted]

X: "Okay then. The skills ... you have to split it for the students who can come physically into that building ... will need some training in how to use this vast thing. But the student sitting in Koffiefontein doesn't need that. He needs to know how to fill in a form to ask the Library to send him something. That does not require library skills."

The dialogue continued in this manner without an indication of what the actual library skills might be, but eventually arriving at "literature skills" - which were also not defined by the lecturer.

Most lecturers were vague at first, but gradually warmed to the topic (albeit still rather vaguely) as the following il-

illustrates:

"Um. Oh yes. Oh yes. Yes. Yes. It's ... [long pause] ja, um ... [long pause]. Ja, one needs to, you know, one needs to learn where to find certain, certain material. Um, to learn that, um, you know, that, well, that certainly the layout, the organization of the present Library. That you can find material by computer from 1984 to the present, and for older material you look at the card catalogue. It has, the Library has an archive, it has a reference section, it has a, and so on. It has a Study Collection, it has a journal collection, it has a general book collection."

With a bit of encouragement, the lecturer carried on:

"Uh yes, yes. Yes, I think, ja, certainly, certainly, that the um, you know what, um the, yes. How to access material, the layout of the Library, that the Study Collection for example has, contains recommended books. What to do if one can't get a recommended book; you fill in an application form [a reservation card], and the student is informed later on when the book is available; it is sent to the student. The need to, ja, well, emphasize to students that they need to plan ahead their assignment writing. That the Library only has a limited number of recommended books, and they can't always get what they want. Renewing the book. That it takes say from the time you request to the time it arrives at the student's desk at home say four, five, six days."

The general orientation-type of information as suggested by this lecturer was the most common of the proposals for library skills, especially at first year level.

Most of the lecturers mentioned reference technique (for example the Harvard method of referring to sources consulted) as a library skill. Some emphasized this so heavily that it became the only library skill they discussed in any depth - even after prompting as to the possibility of other skills:

"Ja, ek voel so. Dit is definitief van toepassing, indien 'n student 'n bibliografie moet skryf, byvoorbeeld, en hy weet nie waar om die inligting in die boek te kan kry nie om die bibliografie te verwys nie. Ek meen, as hulle die bibliografie nie behoorlik kan doen nie. So, hy

is afhanklik van die, van sy kennis om biblioteekboeke byvoorbeeld te gebruik om sy teksversorging ... daarom voel ek is dit belangrik dat wanneer 'n student, veral kom ons sê 'n eerstejaarstudent, in die Biblioteek kom, en hy doen navraag oor 'n boek by 'n vakreferent, en sy help hom met die verkryging van daardie betrokke bron, en hy sal weer daarna na haar toe gaan en navraag doen oor byvoorbeeld sekere inligting van daardie boek te kry, byvoorbeeld die datum wanneer hierdie boek uitgegee is ..."

The upshot of this convoluted monologue was that it was not necessary for the subject reference librarian to give the student a short course in library skills, but that the subject reference librarian did need to show the student

"... hoe om die betrokke boek te kan raadpleeg. Nie net wat inhoud betref nie, maar ook om wat gemik is op die tegniese versorging."

When asked whether his students would benefit from a course in library skills for students, he was sure they would:

"Hierdie departement, en ek praat nou van ons departement wat klem lê op tegniese versorging van werkopdragte, kan dus 'n behoefte stel dat daar wel 'n kursus in biblioteekvaardighede aangebied moet word."

Although this was an extreme case, reference technique qualified as one of the most important library skills from the data. Another aspect which often emerged was that lecturers believed the subject reference librarians had the task of assisting undergraduate students, which is not the case - their role revolves around assisting postgraduate students and lecturers. Possibly the high profile of the subject reference librarians in assisting lecturers has led the latter to believe that their services range wider than they do.

Several lecturers' discussions of library skills trailed off by noting that students should realize they could get help at the information desk, or from the subject reference librarians:

"So, die kaartkatalogus en die rekenaar is die eerste plek van ontsluiting soos wat ek dit sien ... en 'n ander belangrike ding is die studente moet besef in die Biblioteek is daar mense wat hulle kan help ... Die rol van die vakreferent moet meer studentgerig word, ook. Die student moet weet daar is iemand wat in hierdie vak die kennis kan ontsluit. So hulle moet in die eerste plek hulle self darem kan help met die bibliografiese verwysing en dit kan interpreteer, kaartkatalogus, die computer, die ding kan ontsluit, dat hy darem kan weet hierdie ding is in die Bib, of nie in die Bib nie. En van daar af moet hy besef dat daar mense is wat hom kan help werk."

It does not appear from the data that any lecturers would regard library skills as synonymous with information skills:

X: "[Biblioteekvaardighede] is bloot tegniese vaardighede, dis nie ontsluitingskunde in 'n wetenskaplike sin van die woord ... hy moet weet hoe om by 'n boek op 'n sekere rak uit te kom ... Hy moet die wiele en die paaie van die biblioteek ken om by die eindpunt uit te kom - dis die inligting."

SJB: "Wanneer die student daardie boek ... gekry het, die manier waarop hy die inligting gebruik, die assimilasie -" [interrupted]

X: "Mmm, dis 'n ander ding. Dis nie meer biblioteekvaardigheid, dis 'n akademiese vaardigheid."

"First to recognize titles, to find their way to titles, access to titles ... But I would say firstly, how to find a title and then how to find information in the book. But I don't think that's part of the library [skills]."

Some actual library skills were mentioned, usually after prompting by the interviewer. Apart from the general orientation type requirements, library skills mentioned were: using the card catalogue and the online catalogue; using the "reference books alongside the computer" (that is, the Library of Congress subject headings); and using periodical indexes. With regard to the last mentioned, when asked if he thought his first year students needed to know how to use indexes, a lecturer said:

"I don't think so, I don't think so. It certainly is necessary at later years, particularly Honours

year."

Although all lecturers interviewed were vague about undergraduate library skills, they were certain that the skills were necessary at postgraduate level. However, when considering which actual skills were necessary at this level, their replies were not any more specific than those which related to first year students.

It is quite apparent that an obstacle to the teaching of library skills is the fact that lecturers are not clear as to what such skills are, and how the use of the skills would assist their students in the learning process. The lecturers interviewed in empirical study C were not aware of the role of library skills within the information skills framework.

8.3.3.6 Study Collection inhibits library use

"We just give [students] a list of books, they send in their little cards, receive the book, it's a package deal."

In practice, this "package deal" has several problems. The provision of hundreds of thousands of books to tens of thousands of students has tremendous practical problems which were not denied by the lecturers. The comments they made are used here to illustrate how they perceive the practicalities of the Study Collection system.

"Ons sou graag wou gesien het dat die studente die aanbevole werke vir die werkopdragte hanteer en verwerk, maar die probleem is altyd die beskikbaarheid van die boeke."

Since all undergraduate students' library requirements are met by the Study Collection, these students are not likely to become acquainted with wider library services, notably the open stacks and the reference collection. Thus, the policy of the Library to separate undergraduate materials from the rest of the collection could be seen as inhibiting students from searching for additional information in a more

independent manner.

However, other factors relating to the Library's policies, as well as problems which are experienced in the use of the Library, appear to inhibit its use. The way in which Study Collection's policies are interpreted by the lecturing staff can be considered here, as well as the way in which problems experienced by students in obtaining recommended books affect the lecturers' teaching activities.

With regard to the second aspect - problems experienced by students - one of the lecturers stated that this was the reason she no longer made use of recommended books, and had as a result altered the paper to a "lecture-textbook" approach. Her own experiences as a Unisa student apparently made her more sensitive to the students' problems regarding books from the Library:

"I have also been studying at a distance, and I know that if you are to ask what I've been through myself as a distance student, in trying to get a limited number of recommended books ... You want to do an assignment, you ring or write well in advance, and you wait and wait ...

"You might have as many as 250 students ... now you have twenty or 25 recommended books in the Library ... then that number of students are trying simultaneously ... and you've only a limited time span ...

"And this was one of the reasons why I dropped them: "Please may I have an extension?" [for the assignment due date]. Now in that case you've been morally obliged to give them the extension because if they are able to do it and if they've been hampered by the inability to get the recommended book from the Library, then if they are that eager and it's not their fault, you cannot say no."

This is a general problem with papers which make use of recommended books; the lecturers' marking programmes for various assignments overflow, and

X: *"... you were into number three when people were still doing number one. And it really made chaos."*

SJB: *"So it was past experience that made you decide it would be easier to do without?"*

X: "Yes. Yes."

The short loan period allowed by the Library was also noted as a problem, as was the inevitable waiting list:

"If you live in Newcastle and you've got a three week period, it goes and takes a week to get there. You have it for a week, you have to send it back. It just doesn't work."

"Or they've written to the Library and the Library says "We're sorry but your name is on our list for request". And then the student gets frustrated."

Not all lecturers perceived the extent of such problems as experienced by students. One lecturer thought it took from four to six days from request to receipt of a book by post. Students in rural areas especially have problems in this regard, and few lecturers warn students in tutorial letters of the necessity of planning well in advance. Many under-prepared students are ignorant of the need for forward planning in their studies.

In some of the interviews it became apparent that the steps which the Study Collection takes to reduce problems have a detrimental effect on the lecturers' desire to continue making use of recommended material. Some of the solutions attempted by the Study Collection appear to inhibit lecturers. This aspect was most evident in a paper which has a large number of students, and which used the full complement of ten recommended books. The lecturer here felt he was under pressure from the Study Collection to reduce the use of recommended books by students, the reduction being effected by replacing the ten titles with one book of readings.

"We are thinking of a reader that they can either take out permanently, keep in their possession, or a reader that they can buy. So that may replace those [existing recommended books in the] Study Collection.

"... One increasingly gets the message that you shouldn't [use Study Collection]. But increasingly, I mean judging from my contact with the Study Collection, is that - it's not directly said, but you get the message ... either to com-

bine extracts from [existing recommended] books into one reader ... or, as I said before, [students] must buy it. So, there really is some pressure not to expand ... I mean, I think I'm expected to do away with Study Collection ... We're aiming for that. So it would be replaced by a reader."

The book of readings issue is discussed in section 8.3.4.3. It is noted here as it is perceived by the lecturer as an obstacle since the approach inhibits him from utilizing recommended books in his paper. A further obstacle to the use of recommended books might be the fact that all tutorial letters 101 are checked by the Study Collection, and any with recommended reading which have bibliographic or availability problems (for example, listed books are not adequately described in the tutorial letter, or are out of print and can therefore not be ordered) are returned to the lecturers concerned. These lecturers then have to rectify matters with some urgency. A further problem often arises when lecturers wish to add new titles and/or delete existing titles in their lists of recommended reading, which often involves problematic negotiations with the Study Collection. Although neither of these two problems featured in the data analyzed, they might inhibit lecturers from making further use of recommended titles.

8.3.3.7 Summary

There are wide-ranging obstacles which could prevent Unisa students from being taught and then applying library skills during their studies at first year level. There is a need to upgrade the students' basic information skills; however, library skills are not seen as being integral to these general information skills. The belief that first year students already carry too heavy a workload is regarded as a reason for not burdening them further with library skills requirements. Limited access to Unisa libraries - not essentially a valid reason, since most students are probably within reasonable distance from a Unisa library (or, for

that matter, any library) - is seen by lecturers as an obstacle to teaching library skills to students.

However, it appears from the data that the major obstacle to first year students learning and applying library skills is the lecturers themselves. The data shows that the lecturers have not thought about the library skills issue, that they are not familiar with the wide range of library skills and how these are related to the wider information skills framework and that they have limited ideas as to what constitutes library skills. Furthermore, although they claim to believe that Unisa undergraduate students should know how to use libraries, they neither provide their first year students with the opportunities to learn how to do so, nor do they appear to encourage any attempts by the Library or the students themselves to expand their limited knowledge of library use. The lecturers appear ignorant of how library skills could assist their students to become independent learners.

One aspect which is evident from the data, and which is particularly paradoxical, is that, although the Library makes provision for first year papers to recommend library use for students, such use is actually discouraged. This is evident from the policy that recommended (and/or additional) material may not be regarded as essential for study and examination purposes. It also appears that, by encouraging books of readings to replace or curtail the recommended reading which is catered for, the Study Collection is inhibiting the use of the Library by first year students. A further paradox is that the Library makes provision for user education for first year students although these students do not require library skills for their papers and are not encouraged by their lecturers to develop such skills at this stage.

8.3.4 Defence actions [ACTION/INTERACTION STRATEGIES]

The defence actions which are considered here are the action/interaction strategies which, according to the data obtained in empirical study C, have manifested as responses to the central phenomenon of library skills nescience of both first year students and their lecturers at Unisa.

Most of the defence actions have already become apparent in the paradigm model by this stage. Actions and interactions which are considered here arose essentially in response to the obstacles which materialized in the distance learning environment of Unisa, with its very particular background problems.

Due to the nature of the research undertaken in empirical study C, most of the defence actions identified here are those taken by lecturers of first year courses - that is, the actions have become apparent from an analysis of the data contained in the interviews with the sample of lecturers. However, there are other defence actions evident when one considers the macroscopic realm of the phenomenon, notably those of divisions within the University (such as the Unisa library, and the Student Services Bureau (SSB)), and possible defence actions of students themselves.

According to the paradigm model, the action/interaction strategies are any actions which are taken in response to the central phenomenon. Whereas some defence actions (such as the user education programmes of the Unisa library) are seen as a direct response to students' lack of library skills in particular, other defence actions relate to a broader context, that is, the context of general information skills shortcomings in students. Yet other defence actions relate to the lecturers' lack of appreciation of the role of library skills within the information skills framework. Thus, the defence actions identified here are undertaken by different divisions or persons within the Unisa context, with a variety of reasons for the manifestation of the defence

actions.

The strategies discussed here are accordingly wide-ranging, and cover the user education programmes of the Unisa library, academic support for underprepared students, the curtailment of recommended reading, modifications in teaching methods and modes, emphasis on reference techniques, the claim that a paper does not lend itself to the teaching of library skills, excuses based on the fact the Unisa is a distance learning institution, and various defence actions of students themselves (as reported by lecturers).

8.3.4.1 User education programmes

The most obvious strategies undertaken to redress the problem of lack of library skills in Unisa students are the user education programmes of the Unisa library, notably the latest programme which takes the form of a workbook project (refer to chapter 6, section 6.3).

The response of teaching departments to the user education programmes during the period 1986 to 1989 was one of the criteria used to select the purposive sample of first year papers whose lecturers were interviewed for empirical study C. To recollect activities during one particular year of this period (as outlined in chapter 6, section 6.3.3): in 1986, the UELO division of the Unisa library approached teaching departments to request their cooperation in the presentation of library orientation to students at group discussions. Of the 27 departments approached, only thirteen agreed to take part in the project, thus indicating that departments' interest in user education for their students was not particularly strong.

It became evident from the data for empirical study C that in 1990 (that is, four years after the establishment of the UELO division and three years after the introduction of the first library orientation programmes for students) only four

of the ten lecturers were aware of the students' user education programmes. Of the four, two represented first year papers which had included the library orientation lecture as part of the discussion classes; neither of these two lecturers had remained with the class while the orientation lecture was being presented: "*I was never actually physically present*"; "*Ek was nie daar gewees nie*". (It was mentioned earlier that one of these lecturers noted that the orientation lecture presented a chance to have a break.) Comments from the four lecturers who were aware of the programmes were not positive:

"I know that [a member from the UELO division of the Library] tried at some stage to use our discussion classes to expose the students to basic information ... she always uses the first session of your discussion class to try to do that. Many students don't like it ... the more privileged educationally don't like it very much ... they feel they're familiar with the basic things ... very unpopular ... they would rather have the content of [the subject of the paper]."

None of the ten lecturers interviewed were aware of the workbook project which was due to start in 1991. It therefore became apparent that lecturers were not well informed about the library skills programmes for students, and in fact the data also suggests that they did not seem to take them seriously.

Thus, although the Library has introduced the major action strategy in response to the phenomenon of students' library skills nescience, the lecturers are not seen as contributing to any extent to, or being regarded as part of, this particular defence action. The necessary partnership between librarian and teaching staff is not evident therefore.

The UELO division also provides for the user education of lecturing staff, such as orientation lectures for new teaching staff and the publication of library guides. These aspects of the UELO division's activities are generally known by the lecturers; several of those interviewed

referred to these activities.

8.3.4.2 Academic support for underprepared students

Unisa has found it necessary to take steps to assist underprepared students to upgrade certain basic skills such as reading, writing and studying. These underprepared students generally have a lack of library ethos and accompanying lack of library skills. However, the actions taken by Unisa in an attempt to assist the underprepared student body have had to concentrate on broader information skills aspects. With the exception of the radio programmes on library skills (which were compiled by the UELO division of the Library and broadcast as part of the Student Services Bureau (SSB) activities on "Radio Unisa"), the programmes of the SSB and the various strategies used by individual lecturers do not focus on library skills. The defence actions taken in this regard probably do not positively affect the students' use of libraries and allied library skills. In fact, if the upgrading of skills is being attempted without reference to the role of the library in the learning process, the students are arguably not being made aware of how resource based learning will help them to become information literate, lifelong learners.

8.3.4.3 Curtailement of recommended reading

Several of the obstacles which were identified in the data and discussed in section 8.3.3 have resulted in first year papers curtailing the use of recommended reading. For example, the lack of general information skills in the underprepared student body, the concern over the workload of first year students, the perception of limited access to the Library, and problems related to the use of Study Collection have all contributed to what appears to be an emerging trend in first year papers: either not to use recommended reading at all; or to gradually move away from the existing use of

recommended reading. Using terminology particular to this study, therefore, there appears to be a movement away from the "reserves-lecture-textbook" approach, towards either the "one-stop-shop" approach or the "lecture-textbook" method. (This aspect is discussed from a different angle under section 8.3.4.4 as a separate defence action.)

Some lecturers believe that by avoiding recommended reading they are reducing the workload of their students who, it seems, have in the past complained about the amount of reading. This comment from a paper which is based solely on one prescribed book:

"You know, they complain. I don't know if you've seen our textbook [shows it] ... that's what they have to study. That's thick, that's a lot of material. So for them to work through that, and they're part-time students. For me to load them with more reading material and so on would be just too much."

Most of the lecturers who do not make use of recommended reading state that it is not because they do not regard the wider reading as beneficial; the workload and other obstacles to students are the main reason for the "one-stop-shop" and "lecture-textbook" method:

"... as I have said, I see other things as primary there. But it isn't because it's not important. I've weighed the pros and cons, and then found that by and large it causes them more trouble than gain."

In most of the first year papers where recommended books are suggested, the students are not really expected to make use of these. Thus, an assumption of this study that using the Study Collection could be a requirement for gaining admission to the examination for the course (thereby indicating a very basic library use/library skill requirement), is proved false:

SJB: "So it is not a necessity that they actually use [recommended books] in order to get exam admission?"
X: "They can. Uh, the better student will. But I

mean, they can still obtain exam admission without going to libraries ... Some time ago we were fairly strict. We would expect the student to consult at least two or three recommended books. Nowadays ... they can get a good mark with only the study guide and the [prescribed] book."

"Omdat die aanbevole literatuur so 'n lae profiel het, [dosente] gee nie eintlik om of studente aanbevole werke gelees het of nie. Hy kan deurkom met die voorgeskrewe werk. En die studente besef dit, kom hulle nooit in die Biblioteek nie."

First year papers which list recommended reading for students could perhaps only be following a tradition in their department ("I mean, it's expected of us"). In theory, it appears that students need to consult the recommended books for assignment purposes; in practice, this is generally not necessary. The changing student body (that is, more under-prepared students than in the past) appears to have altered the study requirements in many papers. The following two cases represent the opinions of lecturers from papers which have some of the highest first year enrolment figures; these opinions are strongly indicative of defence actions:

"Obviously we would prefer students to make more use of recommended reading ... but I was also very idealistic when I first came here. I mean, students had to read. If there was no additional reading in their bibliography I failed them. But you just suddenly realize it's impossible. I was setting impossible standards ... You're forced to adapt. You either do that or you don't have students."

"At first year level we're quite keen that they make some use of the Library, but we feel that they are not yet ready to make very much use of the resources in the Library ... We keep [use of Study Collection] down because of the very reason that we feel students are not yet ready to make too much use of critical material."

The latter lecturer then noted that his first year students were better off not using critical material as it would merely confuse them.

As evidenced in the data, there is a movement towards the use of a book of readings as opposed to the use of several

different sources. There are several arguments in favour of this method:

"a reader that they can either take out permanently [from the Study Collection], keep in their possession. Or that they can buy [as a prescribed book]."

"A reader can be a small library on its own. I mean, it's not real physical books - I'm all in favour of that, but given the situation at Unisa, you know, you can provide students more effectively with material or reading that they would have missed out on ... by ordering it late, or [there not being] enough copies, which happens ... I won't totally disregard readers. I think they're not the best, I mean they're not libraries. But I think they're second best ... you provide [students] wherever they are - in rural areas they can have this on their shelf or wherever. So I think it's a viable alternative, but it's not the ideal."

"... the textbook is in the form of a reader. I mean, it consists of various chapters by various authors, so it is quite comprehensive, complete, and advanced - unfortunately too advanced - so they can write a very good essay on the basis of those."

One lecturer found the increasing use of books of readings dubious:

"rather unsettling ... In the Unisa context where we do produce library readers for second, third and Honours years - we are producing a reader commercially for first year students to use ... yes, the person could go right through first year to third year without ever going into the Library."

The reduction or replacement of recommended reading for a paper with the introduction of a book of readings could be seen as a defence action on the part of lecturers as well as on the part of the Study Collection. The ensuing curtailment in the number of, or the complete cessation in the use of, recommended books reduces the students' contact with the Library - minimal as it was before, it was nevertheless still a contact. A further problem is that such curtailment reduces the actual base which is required for resource based

learning. This could give students the impression that the (necessarily limited) information supplied to them in their study package is complete. It also leaves them without the knowledge and skills necessary in order to become independent information seekers.

Although the curtailment of recommended reading would appear to be regarded by the lecturers as beneficial to their first year students in that certain obstacles to their study are thereby removed or reduced, the researcher interprets the curtailment as an indication of the lecturers' library skills nescience. If lecturers were *au fait* with the role of library skills within the reference framework of information skills, they might be less likely to regard library skills as a "luxury" or "nicety" for first year students. Thus their defence action is seen as negative in the context of this project. Similarly, the evident "encouragement" by the Study Collection to curtail or cease the use of recommended books (budgetary or administrative reasons for doing so notwithstanding), is also seen as negative in that it reduces the students' contact with the Library and the wider reading for which this contact could make provision.

8.3.4.4 Modifying teaching methods and modes

Unisa's original intention was to provide tutoring through the printed medium alone (hence its traditional description as being a "correspondence" university). However, over the years the University has introduced the use of other media to complement the printed mode. Additional media include the use of various audio-visual modes such as video, slide-sound programmes, slides, radio broadcasts and teleconferencing. Some courses also make use of computer technology, for example by providing students with information contained on floppy disks. The group discussions provided also represent a deviation from the printed mode. The various departures from the printed mode could all be seen as defence actions which were taken to enhance the students' learning process

and thereby promote their chances of improving their general information skills. Since the UELO division makes extensive use of additional media such as slide-sound programmes, such defence actions have also been directed at library skills.

The printed medium remains the major mode of providing tutoring and receiving feedback from students. However, data in empirical study C revealed several instances where first year papers made use of additional media, for example radio broadcasts, slides, cassette tapes, videos and slide-sound programmes.

Other particular changes in the teaching approach which became evident in the data relate to the methods of teaching. The introduction of the multiple choice type assignment, for example, was essentially to reduce the lecturers' marking workload in subject courses which have high enrolment figures. The defence action favours the lecturers, but whether it favours students as well could not be established in this study.

The characteristics of the underprepared student body present obstacles for the lecturer in his assessment of information skills. For example, this lecturer is referring to writing skills:

"But I'm here to teach them [subject], not writing skills. If we want to teach them writing skills we should make English 1 ... or a writing course a compulsory part of our studies ... I can't in any case teach them writing skills by asking them to write an essay ... then we're no longer teaching them [subject], we're teaching them English. And I cannot do that."

The paper for which the lecturer quoted above is responsible has over 5 000 students, and uses only multiple choice questions in both assignments and examinations. This could be regarded as a defence action, since multiple choice questions do not require any writing skills, and the lecturers do not need to struggle through reading poorly written essays. However, students require good reading skills in order

to understand the questions posed in multiple choice assignments, and cognitive skills such as comparing and evaluating can be tested by means of multiple choice questions.

The "one-stop-shop" and "lecture-textbook" methods of teaching preclude the need for students to make use of recommended reading, and therefore preclude the necessity for any library skills on the part of students. This type of defence action might be claimed to be in the interests of the students in that there are fewer obstacles for them, but could be interpreted as library skills nescience on the part of the lecturers.

Of the papers which do not make use of recommended books, there are some which are "one-stop-shops" where all the required information is in one source, and where the paper is based solely on the study guide, or on a prescribed book:

"In fact, [the examination] is not even set on the study guide, because the study guide is set on the prescribed book."

"[Other sources are] not necessary, because this is basically an introductory course. What they have to know is the language, and then they do little reading passages to teach them the language. But we give them all the background they need in [the study guide]."

X: *"As we said, in our course ... you can even be a very good student without going to the Library, because the guide -"*

Y: *"They're so well-contained and they consist of so many different exercises and examples that, I mean, you've got enough. I mean, you're getting enough practice from it."*

X: *"Definitely, yes."* [Interview with two lecturers from same course.]

The "one-stop-shop" extends through to the third year level of the last-quoted paper:

Y: *"There are no prescribed books in any of our courses. In fact up to third [year], I think there's just one course that uses an actual textbook."*

Lecturers of the first year papers which take the "one-stop-shop" approach believe that any additional reading beyond the study guide or the prescribed book would merely confuse the students:

Y: "Ja, you see, if they go to other handbooks a different notation can maybe confuse them."

X: "Ja, Oh yes. Definitely." [Interview with two lecturers from same course.]

"At this stage, any background reading would confuse them more than anything else. ... [The study guides] cover everything that we feel a student needs to know."

The defence action here is thus based on the belief that "one-stop-shops" avoid confusion for students; but again, this could be seen from the other angle and regarded as library skills nescience on the part of the lecturers. If lecturers believed that the utilization of library skills was an important part of the learning process, they might be less likely to reduce the students' opportunities of applying these skills in order to gather additional information for their subject courses.

8.3.4.5 Emphasis on reference technique

All the lecturers interviewed stated that they thought library skills were essential for undergraduate students, but due to the problems identified earlier they could not include the teaching of library skills at first year level. What is most interesting from the data is that lecturers appear to regard reference technique as an important library skill. The emphasis which was placed on reference technique could be interpreted as it being the only library skill which is actually being assessed at first year level.

The data showed that lecturers regard reference technique in an essay type assignment as a necessity. Although there are varying degrees of acceptance in the competence level of students' application of a reference technique, it becomes

clear from the data that lecturers regard its application as an essential part of the study programme, and that they consider it to be an important library skill:

X: "We ask that students follow the Harvard."

SJB: "Are you quite strict about it?"

X: "Reasonably so ... if they don't get the reference quite right ... we might just point it out and say, you know, please follow the guidelines ... but it's unlikely to determine whether he'll pass or fail."

"... die Nuwe Testamentiese werkgemeenskap van Suid-Afrika het 'n standaard metode van aanhalings en verwysings, en ons werk op die Harvardmetode ... Daar is 'n probleem onder ons lede [in die departement]. Party reken dat dit nie belangrik is dat studente dit moet weet nie. Ek voel dis so belangrik. Ek voel dat dit so belangrik is dat ek in die eksamen 'n vraag [wou] gevra het: "Orden die volgende inligting oor die voorgeskrewe werke volgens die Harvardverwysingsmetode" en ek het alles deurmekaargeskom mel - datum, die boek se titel, die outeur ... twee punte. [My kollegas] het gesê dis nie voorgeskrewe werk nie, ons kan die studente dit nie vra nie."

"We explain [the use of reference technique] to them ... in the tutorial letter 101. It's certainly repeated every time we find a fault in this area ... Frequently we comment on this in the script ... We insist on acknowledging sources, and we tell students that if they don't, they're at risk of not being allowed to write the exams."

"We're out of step with the rest. We require them to use footnotes ... Now if they copy or if they refer to information that is not their own, we ... point that out, we penalize them. Particularly for plagiarism."

"Ons maak hoofsaaklik gebruik van die Harvardmetode ... ons is redelik streng wat betref die verwysingstegniek ... word ook gepenaliseer. Ek, byvoorbeeld, ken 'n persentasie van twintigpersent aan die verwysingstegniek ... Die skakel, van hoe ek dit sien, is die Biblioteek. Indien hy nie weet hoe om 'n boek te kan raadpleeg nie, sal hy nie noodwendig tegniese versorging behoorlik kan doen nie."

"Elke departement se verwysingstegniek verskil. Dit maak 'n student so deurmekaar dat hy nie weet na watter kant toe hy moet gaan nie. Een is moeiliker as die ander een, en nie een kom met

*die ander een ooreen nie ... Dit moet eenvormig
gedoen word, en dit is die werk van die Biblio-
teek."*

Unisa does not prescribe a particular referencing method, but it does provide booklets describing various methods such as the Harvard, the Augmented Harvard, and the use of footnotes and endnotes. From 1992 students have been able to buy these booklets for a minimal amount. For many years, the booklets were available gratis from the Library - possibly the reason why lecturers seem to regard reference technique as a library skill. Since there is no prescription of one referencing method, it is left to individual departments to prescribe their choice of method. Students usually discover that they need to use different methods for different subjects.

But why do lecturers at first year lay emphasis on this skill, which students find difficult and confusing? It could be because they need to teach students not to plagiarize sources of information: extensive plagiarism is a common problem with underprepared students, probably due to the rote learning style common in the school system. However, the emphasis on reference technique could also be a subconscious way for lecturers to excuse their lack of library use requirements. Since lecturers appear to regard reference technique as a library skill, and since no other library skills are really assessed at first year level, there might be the chance that the emphasis on reference technique eases the lecturers' consciences on the lack of library use requirements and library skills teaching in their papers. Thus, emphasis on reference technique as a library skill would also relate to the lecturers' nescience of library skills.

8.3.4.6 Course does not lend itself to library skills

The finding that the first year students' workload is seen to need trimming has probably had an effect on subject

courses over the past few years. What previously might have been regarded as necessary reading (prescribed, recommended or additional material) for a paper has now probably been reduced, with the essence incorporated in study guides. The result is that most lecturers feel their papers are already too full - and definitely too full to incorporate any kind of library skills teaching. Few of the lecturers interviewed saw any connection between library skills and those used for research methodology.

"Obviously the courses are so full already, and [students'] practical conditions are so bad - family, working, and so on."

"We're hard-pressed at the present time to fit all our material into three years ... Just as an example, there's been a suggestion that we present research methodology right from the first year to the third year level. That it might be a useful skill to teach students. But just where does one fit it in?"

When asked whether they thought library skills teaching could be built into their subject courses, none of the lecturers believed it belonged there. Many suggested other subject courses where they felt it would definitely be useful - Business Economics, Psychology, Sociology, English, History (three of these courses were actually part of the group in empirical study C, but the lecturers did not believe their courses lent themselves to library skills!) - in fact, the message was clear: any other courses, but not mine.

Such responses are interpreted as defence actions against having to teach library skills. In theory, therefore, library skills are seen as important, but in practice they are not seen as related to a subject. A quotation included under section 8.3.3.5 suggested that library skills were not regarded as "academic" skills, but rather as technical skills which should be taught by the Library and not by an "academic" department.

The nature of the subject being taught could determine whether lecturers believe that students would benefit from

extra sources to consult. Subjects which teach methods (for example grammar of a foreign language, or mathematical or statistical techniques) could provide all the required methodology explanations in one or two sources, at the level (and in the language) suitable for a first year student:

"Nou, uit 'n redelike wye veld ... so in die eerste jaar dek ons net sekere dele. Verskillende outeurs gebruik verskillende notasies, so die student raak totaal en al verlore as hy op eerstejaarsvlak in die eerste plek gaan soek in 'n boek - want die boeke is redelik omvattend, hulle dek die hele veld - dan moet hy na 'n spesifieke veld gaan soek en hy moet daardie ou se notasie ... en daar is nie een boek in Afrikaans nie. Dis alles Amerikaanse en Britse boeke."

A common defence action against having to teach library skills is evident in the lecturer's belief that his subject does not require it, or that the students would get confused if presented with differing approaches or opinions which they might come across in wider reading in a library context.

8.3.4.7 The Excuse: distance learning

"So it isn't only the use of the Library. There are a lot of other things that are a disadvantage. But we provide a great service. I mean, just think of the thousands of students who would not have the exposure to university education if it wasn't for Unisa."

Unisa fills a void in the tertiary education system, but the fact that it is a distance learning institution is often given as the reason why certain things are not possible. The distance factor was presented as a defensive excuse for several aspects in this study, notably that since the University is non-residential students cannot be expected to use the Library:

"Nou die groot probleem is dat Unisa se hele opset, dink ek, leen hom nie daartoe. Anderste moet ons revolusionêre verander in ons benadering ..."

One wonders if the excuses are always warranted, or whether they are merely defensive attitudes held in order to avoid having to make major changes. The library use excuse, for example, might not be valid: the Unisa libraries (and other types of libraries) countrywide cater for large number of fulltime Unisa students who go there every day to study. It has been estimated that 42% of students are within reasonable distance from the Unisa main library alone (Gous 1992a: 3).

With the constant changes brought about by, and future scenarios envisaged by the use of, innovative information technology (IT), *The Excuse* will become less and less credible. The outcome of the IT project which was underway at the time of writing (refer to chapter 9, section 9.3.3) could change completely the manner in which Unisa and its students will utilize teaching and learning methods and modes in the future.

8.3.4.8 Students' defence actions

Although no students were interviewed for this study, the data obtained from interviews with lecturers indicates that defence actions could be evident in students as well. It was mentioned under section 8.3.1.3 that students could "plug into" what the minimum requirement for a paper is. If the minimal type students are not expected to do something - and if they do not get additional credit for doing it - they most likely will not make the time or take the trouble to do it. Of relevance here are library-related aspects like the use of recommended books, and the utilization of the library skills workbooks.

8.3.4.9 Summary

A variety of defence actions were gleaned from the data.

These action/interaction strategies include actions undertaken by the Unisa library, the SSB, the lecturing staff, and the students themselves. It has been suggested that the defence actions of the lecturers might, on the surface, appear to be aimed at reducing the obstacles faced by the first year students. However, the indication could be that the defence actions are also the result of the lecturers' library skills nescience. If the lecturers had a knowledge and appreciation of the role of library skills in the information skills framework, they might be more disposed to including library skills in their particular subject courses.

The user education programmes of the Unisa library were not seen in a positive light by the lecturers, and the indication is that the lecturing staff were not involved in the programmes and are therefore not aware of their possible value for their subject courses.

8.3.5 Vacuum [CONSEQUENCES]

In this final component of the paradigm model, the consequences of the various responses to the phenomenon of library skills nescience are considered. The central category here has been named "vacuum". From the earlier discussions, the illustrative quotations, and the interpretations related to the preceding parts of the paradigm model used to depict the grounded theory (that is, the causal conditions, the context, the intervening conditions, and the action/interaction strategies relating to the phenomenon) one factor has emerged as prominent. There is a vacuum when it comes to library skills, a vacuum which relates to students as well as lecturers.

In spite of the library skills teaching which is offered by the Library, and the use of the Study Collection ostensibly required by students of half of the first year papers, there is a lack of library skills or library use requirements at the first year level.

The lecturers have responded to the broader context of general information skills incompetencies of first year students. However, as the data indicates that lecturers manifest an ignorance of the role of library skills within the reference frame for information skills, there is also a vacuum in library skills awareness in lecturers. As a result of the lecturers' nescience, they in turn have not paid attention to the library skills of their students and have thus exacerbated the problem of library skills nescience in first year students.

The properties and subcategories of the identified vacuum will be only briefly discussed since they have mostly been covered throughout the earlier discussions of the preceding parts of the paradigm model. Aspects of the library skills vacuum which are highlighted in this final section are the nonrelevance to first year papers of the first level user education workbook, the denial of a role for library skills at first year level and the consequent delay to second or third year level (or perhaps not at all during undergraduate studies) for requiring such skills of students, and the "horrified" reaction of lecturers to the thought that a student could graduate without having used a library.

8.3.5.1 User education: workbooks not relevant

Since there are no library skills requirements for students at first year level at Unisa, the workbooks which are provided by the UELO division of the Library are not relevant to the first year students' studies. For "one-stop-shop" and "lecture-textbook" papers, the students do not need to make use of any library services, and therefore do not require the workbook. For "reserves-lecture-textbook" papers, the students could soon "plug in" to the fact that they can pass assignments without recourse to information in recommended books, can therefore gain examination admission without use of the library services, and thus do not need to

utilize the workbook.

Unless a first year paper specifically makes a connection between the library skills workbook and the subject content of the paper, or workbooks themselves make the connection between library skills and specific subjects, the user education at first level has little relevance for the students. The UELO division is responsible for the vacuum in this regard, since the lecturers were not aware of the workbook programme which would be introduced for their students in 1991, and the workbooks at first level are not, in any event, subject related.

The workbook programme at first year level therefore does not fill the vacuum; to a certain extent it exacerbates it since the students could be confused if they receive a workbook which has no relevance to the subjects they are studying.

Although the majority of lecturers made no connection between library skills and the subjects of their papers, one lecturer did say that he believed that library skills need to be subject related. When replying to questions regarding who he felt could be responsible for ensuring that students learnt library skills, the lecturer commented:

"Somebody who knows about libraries in general, obviously, but who also is able to make some connection with the needs of a particular department ... a student reading Law is going to [have] very different requirements from a student reading Psychology or a student reading English or a student reading Mathematics. The requirements will vary depending on the department ... There are certain general skills, how do you use a catalogue, how do you get a book issued to you, basic things. But there are also highly specific skills that pertain to the particular discipline, and those should be looked at rather than that there should be a blanket course."

The lecturer quoted here was the only one who saw the possibility of library skills being incorporated within the

first year paper he taught. One other lecturer saw the possibility, but was referring only to the library skill of reference technique.

8.3.5.2 "Let George do it": denial and delay

When questioned as to who they thought could be responsible for teaching library skills, or where such skills could be taught, most lecturers felt it should not be part of the "academic" teaching, and certainly not part of their paper. Their suggestions about where the teaching should emanate from were mostly in favour of the Library (one lecturer suggesting that it was the task of the subject reference librarian, another saying it was not the task of the subject reference librarian). Some suggested the Department of Library and Information Science or an academic support programme; one suggested the SSB, another said not the SSB. If there were any strong feelings on the issue, these related to the fact that the library skills teaching was not an "academic" department's responsibility:

"Dis nie deel van ons onderrig nie. Want biblioteekkunde sodanig, en inligtingsontsluiting, is 'n vakgebied op sy eie waaraan ons ons nie moet gaan lol nie."

"Ek voel ons kan net 'n student bloot verwys na die Biblioteek, maar die wyse hoe om die Biblioteek te kan gebruik, dit voel ek is die verantwoordelikheid van die biblioteekpersoneel."

"I don't think it would [be part of] an academic department ... maybe the Library."

There were also no particularly strong feelings about the length of possible library skills courses or methods and modes of teaching. Few lecturers felt that such a course would warrant any type of credit towards a degree. The majority, however, felt that students should be taught the skills but they did not know where.

"I can't see it as an isolated course, carrying some credit ..."

"I don't know how [we're] going to accommodate it. But it is required."

The "flip-flop" syndrome discussed earlier indicates that lecturers are aware that their first year students arrive without library skills; they say they believe that undergraduate students should possess library skills - but that they do not require these at first year level; they claim there are more pressing needs at first year level that preclude the possibility of teaching library skills; they show little interest in the user education programmes provided by the Unisa library or are ignorant of the existence of the programmes; they are not very clear as to what library skills actually encompass; they feel the workload of first year students is already too heavy; they believe that they (lecturers) are regular users of the Library, but do not show much evidence of this and rely on the services and assistance of the subject reference librarians; and they assume that library skills are being taught to their students somewhere beyond the paper that they are teaching.

This all indicates a property of the vacuum in library skills at first year level which is here referred to as the "Let George do it" syndrome. Lecturers are blindly relying on some other division or paper to ensure that their students eventually become library users and possess library skills.

Whether the lecturers seriously believe that undergraduate students should know how to use libraries for independent information seeking is not clear. The possibility exists that the lecturers simply felt obliged to claim the necessity for library skills in students. This could be due to the researcher (interviewer) being from the library profession; it could be due to the fact that the lecturer felt guilty about not having seriously considered the role of library skills in his paper; or it could merely be that library use is seen as a traditional part of being a student:

"Because to me, using a library is part of being a student. Being a student is not only passing assignments and passing degrees, getting degrees. Being a student is knowing how to accumulate information in the most efficient way. And obviously using a library is part of that."

The "Let George do it" syndrome demonstrates elements of denial and delay. There is no place for library skills at first year level; teaching is therefore delayed until later years. But what if the denial/delay situation is similar at second and third year?

8.3.5.3 Mock horror

The possibility that a student could go through three years of a subject without having used a library was not something that most of the lecturers had considered. When the researcher suggested that this could quite feasibly happen (and that a student might be able to go through a whole degree without library use), lecturers reacted with surprise. This concept was labelled "mock horror" during coding, owing to a strong choice of words in relation to a generally lackadaisical attitude to library skills for students:

"Good grief, that sounds to me to be ominous [laughter] ... My impression is that it is certainly true. Certainly even those getting into Honours are sometimes crudely lacking ... library skills. I think that's shocking, I think that's disgraceful. It shouldn't come to that."

"It's rather unsettling to think that ... it certainly does [concern me] ... I was thinking back now. I think we did have a student, an Honours student, who didn't know how to use the Library ... which is very disturbing, very very disturbing."

"Ek dink dis 'n skande."

"Oh, that's abominable, the very notion. It's, you know, it's inconceivable."

"But how can there be third year courses where a student doesn't need to know the Library? It's

simply impossible. Good heavens. Incredulous. I can't believe it, I really can't believe it. ... I'm so totally flabbergasted at the thought. Really, that people can go through university without using the Library ..."

8.4 CONCLUSION

The investigation into the attitudes of Unisa lecturers with regard to the phenomenon of library skills has revealed a vacuum in the students' learning of such skills at first year level. Lecturers appear to be the major obstacle to students learning library skills. The lecturers' ignorance of library skills and their nescience of the role that these play in the learning process, decrease the students' chances of mastering library skills.

8.4.1 Summary of findings

The main findings of the survey can be summarized under four broad themes, namely the underprepared student body, the workload which can be expected from distance learning students, the skills framework within which lecturers assess students, and Unisa library related issues.

8.4.1.1 Underprepared student body

* The underprepared student body at first year level is a major problem for lecturers. The large number of students at this level magnifies the problem.

* The most serious problem with first year students is their lack of general information skills.

* The lack of library skills is not seen as important when compared to the lack of information skills in general.

* Methods of academic support consequently do not focus on library skills.

* Lecturers feel that most students at the entry level are not competent in library skills, and they do not believe that students learnt such skills at school.

* Lecturers appear to regard most students as not being capable of benefiting from library use. They feel that only the "better" students might be inclined to use a library of their own accord.

* Many lecturers feel that utilization of additional information sources from the Library would merely confuse students in their subject courses.

8.4.1.2 Workload issue

* There is a belief that part-time students do not have sufficient study time, and there appears to be a movement towards reducing the students' workloads. This reduction relates to the amount of prescribed material with which students can be expected to cope, as well as a reduction in the use of additional information obtainable from the Library.

* There appears to be an emerging trend of turning first year courses into "one-stop-shops".

* There is evidence that unless students are expected to make use of the Library for the purposes of their studies, they will not do so.

* The student body includes a number of "minimal type" students who do the minimum amount of work in order to pass assignments and examinations.

8.4.1.3 Lecturers' skills framework

* The level of information skills expected from students seems to vary between different teaching departments. There does not appear to be a common level at which all first year students are assessed.

* Independent information seeking is not required of students in first year courses.

* Library skills are not recognized within the lecturers' reference framework of information skills.

* Lecturers state that library skills are important for students, but they do not take any steps to rectify the lack of such skills in students.

* Lecturers regard reference technique as an important library skill - perhaps the most important library skill for first year students.

* It is apparent that lecturers have not given the library skills issue much thought.

8.4.1.4 Library related issues

* Lecturers appear unaware of the role the Library can play in the learning process.

* Lecturers do not believe it is their task to ensure that students have a mastery of library skills.

* There is a lack of a partnership between the Library and the lecturers with regard to the user education programmes for students.

* Lecturers do not take the user education programmes seriously.

* Lecturers rely heavily on the services of the subject reference librarians, and it appears that lecturers might not need to utilize library skills themselves.

* There did not appear to be a correlation between the lecturers' use of the Library and the library skills which they expect of their first year students.

* The policies of the Study Collection could be inhibiting lecturers from recommending Library use by their students.

* There appears to be pressure on lecturers to make use of books of readings to reduce the number of recommended books at first year level.

8.4.2 Discussion

On the whole, the lecturers were not particularly concerned about where students learn library skills, and assume that at some time during their undergraduate studies the students will be taught such skills. Most lecturers were, however, quite adamant that their paper was not the place to incorporate such skills teaching. They had not thought about the possibility that students might graduate without having used a library, but most were "horrified" at such a notion.

At the time of writing, the success of the workbook project had not yet been evaluated by the UELO division of the Unisa library. No conclusive findings in this regard can be noted for the grounded theory on library skills requirements of Unisa first year students. However, it does appear that the lack of partnership between the Library and the teaching departments could exacerbate the lecturers' library skills nescience. At this stage (1992), the library skills workbook at first level is being sent out into a vacuum, where neither students nor lecturers would see the relevance of

any library skills to the first year subjects.

Students arrive at the University with little or no knowledge of library skills, and there is thus library skills nescience of students on enrolment at first year level. Since it is unlikely that students learn any degree of library skills during their first year of tertiary studies, there is thus library skills nescience of students on their entrance to second year level.

The analysis of the data and the interwoven descriptive material from the interviews revealed many aspects beyond the issue of library skills in a distance learning university. The study has shown that the background of students prior to their enrolling at Unisa results in problems for lecturers. A major problem is the general underpreparedness of most first year students: they matriculate with underdeveloped information skills competencies, and their library skills abilities are minimal. In the students' first year of tertiary studies, lecturers need to pay attention to upgrading general information skills, at the same time teaching subject content. Since the additional remedial work which is required at first year level is already overloading both the lecturers and the students, there is no inclination on the part of lecturers to pay attention to the "luxury" of library skills.

The lecturers' apparent reason for precluding library skills at first year level is therefore that the adjustments in teaching methods and modes which are required for the upgrading of general information skills are already burdening both students and lecturers. However, the data suggests a concealed reason for the preclusion of library skills: the lecturers are themselves nescient of library skills, and are unaware of the role of library skills within the information skills framework. Their ignorance of the value that library skills could have in upgrading or teaching information skills means that their students are not being given the opportunity to learn or apply library skills at first year

level.

The data show that the Library has provided for library skills teaching through its user education programmes, notably the workbook project. However, since the utilization of the workbooks is neither compulsory nor credit bearing, nor related to any subjects taken at first year level, and since the lecturers have not been involved in the Library's workbook project, the user education programmes will be unlikely to have any effect on the first year students' library skills abilities.

The consequence of all these factors is that Unisa students can enter first year studies without a knowledge of library skills, can pass first year without having learnt or shown competence in library skills, and therefore are able to register at second year level with the same library skills nescience they left school with. Library skills nescience would thus manifest as a problem at second year level as well.

8.4.3 The Unisa theory of library skills requirements

The grounded theory of library skills nescience at Unisa was presented along the lines of the Strauss and Corbin (1990) paradigm model. The proposed theory was illustrated briefly in Figure 8.1 (section 8.3) prior to the extensive descriptive analysis which generates the following grounded theory:

1. The context within which students are taught at first year level at Unisa requires no application of library skills.
2. Owing to particular background problems, students enrol at first year level with undeveloped library skills.
3. The methods and modes of teaching within this distance learning environment, and the lecturers' unfamiliarity with

the role of library skills within the information skills model, result in students being denied the opportunity to learn and apply library skills at first year level.

4. Students therefore enrol at second year level as nes-cient of library skills as they were upon enrolment at first year.

5. Since the teaching context and the library use requirements are similar at all undergraduate levels at Unisa, it can be deduced that students can graduate without having shown a mastery of library skills.

Figure 8.2 is an expanded version of Figure 8.1, and represents a diagrammatic illustration of the grounded theory proposed for the library skills situation at Unisa.

8.4.4 A generalized theory of library skills teaching at distance learning universities

The limitation of the Unisa grounded theory was mentioned in section 8.1. Although the qualitative study produced sufficient data to support a theory in the Unisa context, it cannot be suggested that the theory is applicable to other distance learning institutions. The causal conditions, context, obstacles, defence actions and consequences which would be relevant to other such institutions are likely to differ substantially from those which manifest themselves at Unisa.

However, by generalizing the categories pertaining to the Unisa situation, the proposed grounded theory might be useful for similar investigations at other tertiary distance learning institutions. The grounded theory as proposed in this report is therefore illustrated diagrammatically in a more generalized manner in Figure 8.3. The generalized theory of library skills teaching is proposed merely in the hope that it might assist in further research into the

library skills phenomenon at distance learning institutions.

In the next chapter the findings and implications of empirical study C, as well as the other two empirical studies, will be related to findings from the literature and current developments in the Unisa context.

Figure 8.2 Detailed diagrammatic representation of proposed grounded theory of library skills nescience at Unisa

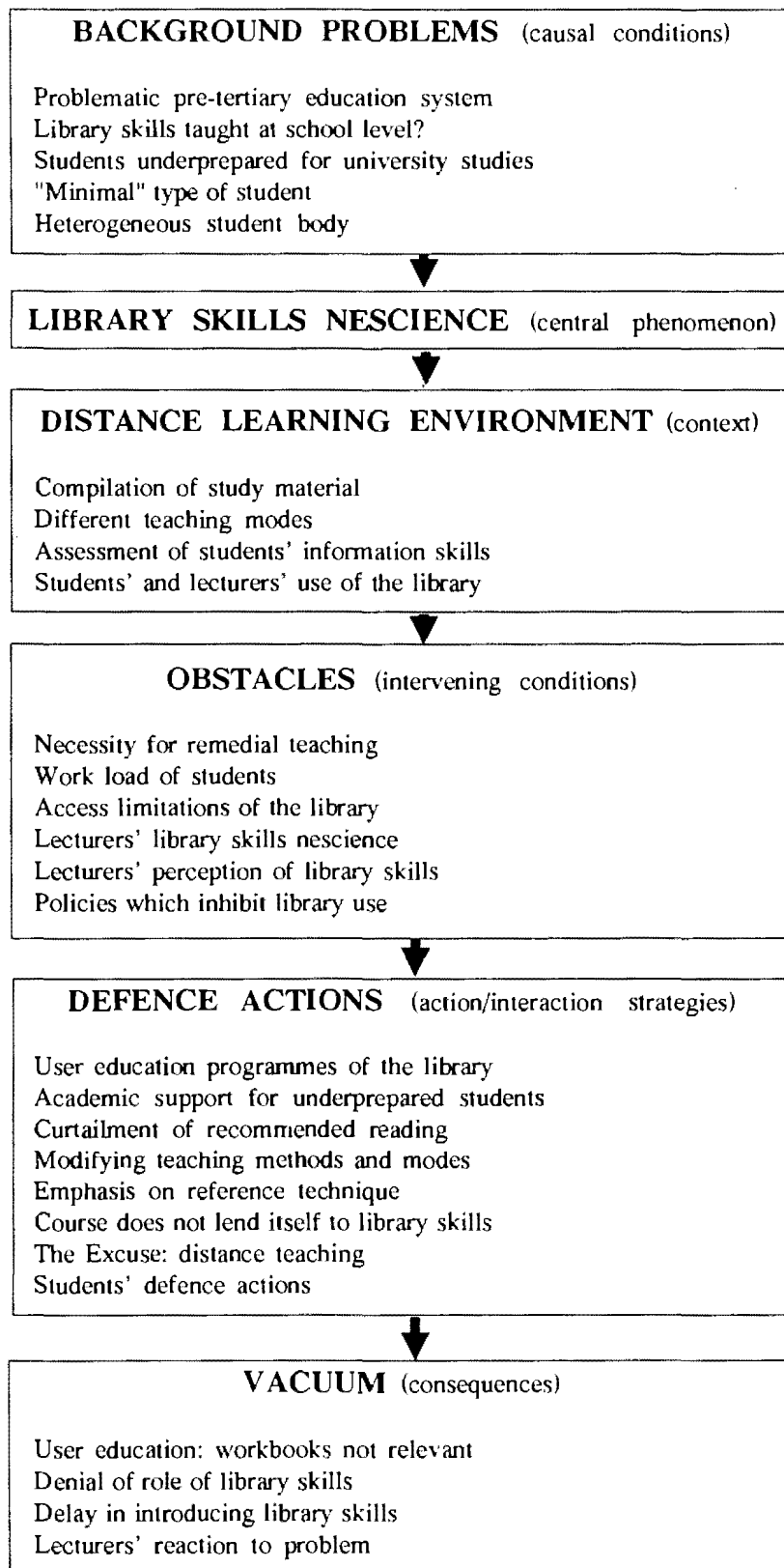
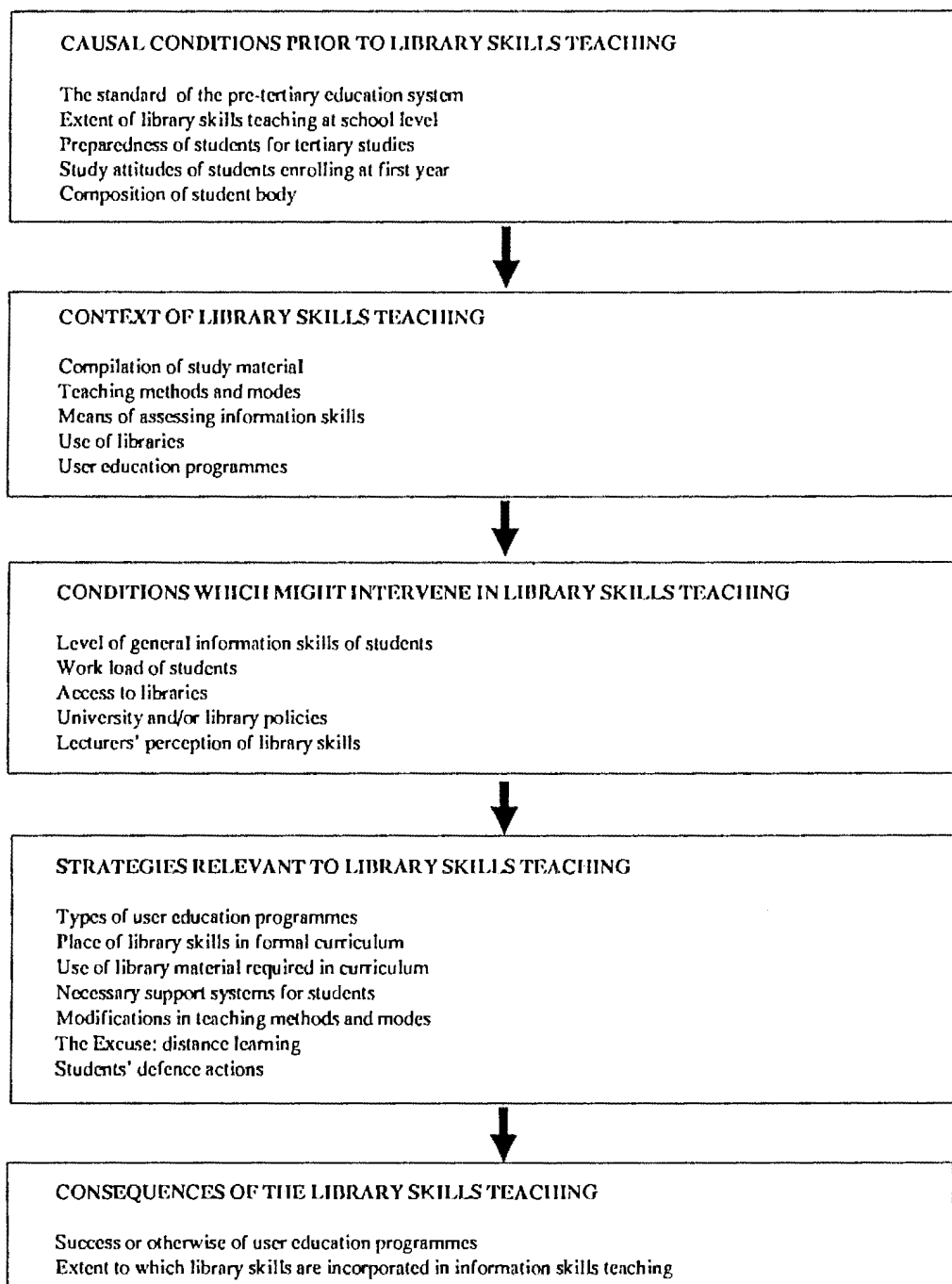


Figure 8.3 Generalized theory of library skills teaching at a distance learning university.



CHAPTER 9

CONCLUSION

9.1 INTRODUCTION

The first chapter of this thesis contextualized the problem under investigation, which was demarcated in the following problem statement included in section 1.2.2.2:

Are library skills an essential component of the information skills that are needed by information literate graduates? If so, is the role of library skills recognized within the first year curriculum of a distance learning university?

The project thus comprised two components, the second being subsidiary to the first:

1. establishing whether library skills are essential for information literacy
2. investigating the role of library skills at a distance learning university.

These two components were distinguished in the five subproblems:

1. What does information literacy entail, and how do information skills relate to it?
2. What are library skills?
3. What is the relationship between library skills and information skills?
4. What library skills are expected of first year students?
5. What obstacles are there to teaching library skills as part of the formal curriculum of a distance learning institution?

The first three of these subproblems were investigated through conceptual analyses based on the literature (chapters 2 to 5) and the last two subproblems were explored by means of empirical studies (chapters 6 to 8). The empiri-

cal components of the research project used the University of South Africa (Unisa) as an illustrative example of a distance learning institution.

This final chapter summarizes the main findings of the literature and the empirical studies, provides additional interpretations and suggests implications of the findings. The chapter concludes with recommendations and proposes areas for further research.

9.2 THE LITERATURE STUDY

The main findings in the chapters dealing with the conceptual analyses of information literacy, information skills and library skills are summarized first. This provides the framework within which the interpretations are made and implications observed.

9.2.1 Findings

In order to establish whether library skills are essential for information literacy, conceptual analyses were done of "information literacy", "information skills" and "library skills". There is a semantic problem involved when one analyzes these three concepts since they are often used synonymously and interchangeably in the literature. However, the conceptual analyses showed that there are clear distinctions. Whereas information literacy denotes a mastery of information skills and these two concepts are thus closely linked, the concept of library skills is too narrow to be considered as synonymous with the other two.

9.2.1.1 Conceptual analyses of information literacy and information skills

The conceptual analysis of information literacy was under-

taken in chapter 2, and that of information handling skills in chapters 3 and 4. The concepts were analyzed separately since the former arose in the USA and the latter in the United Kingdom, and the connection between the two is seldom made in the literature. This study has indicated that both concepts arose as a result of education reform needs - in the USA and the United Kingdom respectively. The reform recommendations that scholars and students needed to possess information handling skills dovetailed with the beginning of advances in user education programmes in the two countries. Some library based programmes which had previously taught only traditional library skills were beginning to expand to teach a broader range of information handling skills.

The conceptual analysis of information literacy followed the usage and meanings of the term through two decades, from its origin in the USA in 1974 (Zurkowski 1974) to the start of the 1990's when its meaning had been firmly established. By this stage its importance in today's society was being firmly entrenched by an influential report of the American Library Association (ALA) (*ALA Presidential Committee ...* 1989). The chronological exploration of information literacy also highlighted extensions in the meaning of the concept as societal changes (such as the extensive use of information technology (IT) for information handling) influenced its meaning.

The use of information for problem solving and decision making was stressed in early definitions of information literacy (Burchinal 1976). It had also been suggested that there are a wide variety of information resources available (people and collections of sources), that there are certain strategies for the acquisition of information, and that the library profession is linked with information literacy (Taylor 1979). By the end of the 1970's it had become evident that information literacy related to an expanded set of skills which was required in order to handle the amount of information which was becoming available. This set of skills is referred to as information handling skills or, more

simply, information skills.

Several new definitions of information literacy had been proposed by the middle of the 1980's. Demo (1986) suggested that a definition emanating from the field of user education defined information literacy in the most functionally relevant way. This definition (see chapter 2, section 2.3.2) remains one of the most detailed expositions to date, and is especially notable for a point it makes on how information literacy cannot be confined:

Information literacy is not:

- (only) knowledge of resources
- library dependent (as sole source)
- information finding (also understanding and evaluating) (Breivik 1985).

Although the definition had its origin in the user education arena, it emphasized that libraries are not the only resources for information and that information literacy extends beyond mere locating of information.

By the end of the 1980's it had become apparent that library skills was too narrow a concept for the information handling needs of society (Breivik 1989a), and librarians were tending to expand their user education programmes to encompass the wider implications of information literacy and the information skills that this required (Irving 1985; Euster 1987; Hopkins 1987; Mensching & Mensching 1989).

Two documents which appeared in 1989 emphasized the importance of information literacy in formal education, and the role of the library in teaching information literacy (*ALA Presidential Committee...* 1989; Breivik & Gee 1989). By the time the decade came to a close, information literacy was no longer an embryonic concept, and the influential report of the ALA had confirmed the relevance of information literacy for modern society.

Definitions of information literacy emanating from the early

1990's stress the importance of information handling skills (Curran 1990; Kwasnik 1990; Bjørner 1991). However, the notion of information skills had arisen prior to the entrenchment of the idea of information literacy. For example, the necessity of students having "information collection skills" (Breivik 1974) or "information handling skills" (Breivik 1977) had been suggested in the USA during the 1970's. The notion of information skills had arisen as early as 1966 in Australia (Grimison 1986), in an education reform report which proposed that libraries could do more than merely provide books and should also inculcate information skills in students. Thus, even during the 1960's, information skills were envisaged as related to library skills, but were seen as being broader in scope.

Early writings on information handling skills (Winkworth 1977; Irving & Snape 1979; Brake 1980; Marland 1981) tied the skills to library-type information location skills. However, it became more apparent that information skills were broader in meaning and moved beyond lower level locating skills to higher level cognitive skills such as analyzing, synthesizing and evaluating the located information.

Information skills can be categorized into taxonomies or typologies. An analysis of such taxonomies indicates that information skills are related to several other skills such as learning skills, problem solving skills, thinking skills and research skills. What distinguishes information skills from the others, however, is that taxonomies of the former focus particularly on skills which are directly related to information handling. The analyses of taxonomies of information skills indicated that there are three main stages in the handling of information: planning, retrieving and organizing. These stages are accomplished in eight steps:

1. defining an information task
2. deciding on a search strategy
3. locating relevant sources
4. selecting the information

5. evaluating the information
6. synthesizing the information
7. presenting the information task
8. evaluating the completed task.

Using these three stages and eight steps, the PRO typology of information skills was compiled (see chapter 4, section 4.6 and Figure 4.4), and it was suggested that the information handling process takes place within a milieu of information awareness.

It becomes evident that information literacy and information skills can be defined and explained without confining the skills applied, and resources used, to the library domain. It thus becomes evident that library skills are subsidiary to information skills.

9.2.1.2 Conceptual analysis of library skills

The terminology related to library skills is extensive. There are several terms which are used interchangeably in this field, including the broader concepts of information literacy and information skills. Although plenty of definitions of information literacy and information skills were found in the literature, few exist for the narrower terminology related to library skills. Those that do exist are often contradictory, and the lack of standard definitions has resulted in a terminological quagmire in the field of library skills. In spite of an attempt made over two decades ago to standardize the vocabulary (ACRL 1979), confusion still reigns; this has been noted by several writers (Arp & Wilson 1989; Breivik 1989b; McCrank 1991 and 1992).

Of the almost two dozen related terms which were identified in the literature, the most commonly used were library skills, user education, library instruction, library orientation, library literacy and bibliographic instruction. These terms were analyzed in this section of the study. The

broadest of the terms proved to be user education, which is also the only one of the terms recognized in a standard terminology dictionary for the Library and Information Science (LIS) discipline (Prytherch 1987).

User education denotes the programmes provided by a library to teach its users skills in utilizing the library's stock and services (Prytherch 1987; Fleming 1990; Ochoggia 1990). In section 9.2.1.1 it was noted that by the 1980's libraries had started to extend their user education programmes into teaching information skills as distinct from library skills. However, current definitions of user education still concentrate on the use of a library as opposed to the utilization of information found in a library or any other resource which provides access to information. The analyses of the concepts of library skills and library literacy, on the other hand, showed some indications that the meanings are becoming broader (Fatzer 1987; Kuhlthau 1987b; Bell 1991).

On the whole, however, the library skills-related concepts analyzed refer to instructing library patrons in the utilization of a library's resources. Current meanings of the concepts of library skills and library literacy indicate that the terminology is in a state of flux, probably due to the advent of the notions of information literacy and information skills. It is, nevertheless, apparent from the present definitions that library skills are not synonymous with information skills, since the latter are broader ranging and not confined to libraries for information gathering. More importantly, library skills still appear to be confined to location skills.

The confining meaning of library skills becomes more apparent when taxonomies of library skills are analyzed to identify the actual skills involved. Unlike information skills which boasts several taxonomies, few taxonomies of library skills are to be found in the literature. The most useful remains that of Winkworth (1977), whose taxonomy was drawn up before the notion of information skills had become

topical.

By analyzing the extensive literature on types of user education programmes, a typology of library skills was drawn up and the skills were categorized under four sections:

1. orientation to the library
2. the library's internal organization methods
3. the library's resources
4. accessing the sources held by the library.

It became apparent that many of the "skills" listed under these four sections did not relate to skills or abilities in the true sense of the words, but refer rather to pre-existing knowledge which is required in order for certain skills to be applied. Skills in the true sense of the word become relevant only at the fourth stage of the typology, where the sources in the library are accessed.

When the typology of library skills is slotted into the PRO typology of information skills, it is seen that library skills are subsumed only under steps three and four of the eight-step information skills typology. The resulting model of library and information skills shows distinctly that library skills are far narrower than information skills.

9.2.1.3 Programmes for information literacy, information skills and library skills

Programmes or courses which prepare students for library skills in particular, as well as those aimed at the wider notion of information literacy, can be presented in any number of ways. The literature study covered the various programmes which can be presented. The literature in this area especially demonstrates the terminological confusion between the three concepts. Some programmes which claim to teach information skills in effect cover only traditional library skills (which stop short of the higher order cogni-

tive skills evident in the later steps of the PRO library and information skills model). On the other hand, some bibliographic instruction programmes, for example, evidently attempt to cover the higher level skills of utilizing the information located.

Although this analysis concentrated on user education programmes (chapter 5, section 5.5), it became apparent that there are also programmes which cover the wider spectrum of information skills which are required for information literacy. Examples of information literacy programmes are found essentially in the subject related courses, such as those offered in the medical field (Maranda 1989; Tyler & Switzer 1991).

Notable similarities are found in investigations on how skills programmes should be taught in order that they be effective. From the early writings of Knapp (1966) and Breivik (1974) to the more recent writings (for example Cleaver 1987; Heeks 1989), the need for the skills to be taught in a subject related, course integrated manner is emphasized. That is, the skills teaching must be integrated within students' general (credit bearing) curriculum. The skills teaching should be based on resources of the "real world" (including, but not only, those provided by libraries). The concept of resource based learning is used in this regard, and implies that independent information seeking becomes part of the learning process. These aspects also ensure students' awareness that the skills are transferrable to other situations, and students are thus prepared for lifelong learning.

The notion of resource based learning being the most effective method of teaching skills is prevalent in the literature, and was integral to the ALA report on information literacy (*ALA Presidential Committee ... 1989*). Where the instructional role of libraries in library skills, information skills and information literacy programmes is considered, this inevitably stresses the importance of a

partnership between librarians and teachers (for example Baker 1988; Heeks 1989; Breivik & Gee 1989; Ridgeway 1990).

9.2.1.4 Lecturers' attitudes to library skills

The literature study revealed that the partnership issue is crucial, but is dependent on the librarians' knowledge of how lecturers view the importance of library skills in the learning process, as well as the extent to which lecturers expect their students to be proficient in library skills. This aspect has not been widely researched by librarians, but surveys which are reported in the literature provide little comfort for librarians envisaging expanding their user education instruction to information literacy teaching. The findings of these surveys generally indicate that although lecturers might expect library skills in their students, they more often than not find them lacking, and almost always make no effort to improve the situation. The usual attitude of lecturers is that they prefer to have the responsibility of teaching library skills off their hands. Overall, the finding is that if lecturers have negative attitudes towards library skills teaching, their students have little chance of learning these information seeking skills.

The findings of the surveys on lecturers' attitudes will be covered in more detail in section 9.3.1.2 where they will be compared with the findings of the survey of Unisa lecturers which was undertaken for empirical study C.

9.2.2 Interpretations and implications

Information literacy can be seen as an umbrella concept which encompasses the terms information skills and library skills. The ability to handle information effectively and efficiently (that is, information skills) is necessary for information literacy. Library skills are a subset of information skills, and relate to only some of the skills which

are necessary for effective information handling.

All of the skills required for an information handling process were categorized in the PRO typology of information skills. These skills are practised within a milieu of information awareness. This framework of information awareness includes a knowledge of all types of resources which could provide access to information, including, but not only, libraries. The totality of information skills comprises a set of interconnected abilities, most of which are regarded as higher order cognitive skills.

The conceptual analysis of library skills, and the placement of these particular skills within the information skills typology to form the PRO library and information skills model, showed that library skills cover only part of the model, notably steps three and four in the retrieval stage. The pre-knowledge which is necessary in order to practise library skills can be regarded as part of the information awareness framework within which the various information handling skills are practised.

It might be deduced from the position of library skills in the PRO model of library and information skills that information skills could be dependent on library skills. It appears that library skills could be pivotal for the higher level cognitive skills in the model, since the later steps in information handling are dependent on information gathering for the information which is "handled" during the evaluation and synthesizing steps. However, it would be more correct to maintain that a proficiency in information skills is dependent on (generalized) information gathering strategies, since libraries are not the only resources where information can be gathered.

Library skills thus essentially denote lower level location skills. This limitation has relevance for user education programmes which claim to teach the totality of information skills but which, in reality, cover only part of the library

and information skills model.

9.2.2.1 Are library skills required for information literacy?

It therefore cannot be conclusively claimed that library skills are such an integral part of the whole information handling process that they are necessary for information literacy. And, by extension, it cannot be concluded that university students need to master library skills if they are to be considered information literate. This statement must be qualified, however, since students do require generalized skills in gathering information in order to utilize information at the higher stages of the information skills framework.

(a) Using library skills as a prototype of general information gathering strategies

It is suggested that user education programmes take the approach of using library skills as a prototype of general information gathering strategies. This could be done by identifying the basic skills which are necessary for information seeking in a more general manner. The transferability of these strategies to other information seeking situations could then be made apparent. This approach has implications for the terminology related to library skills - terminology which has been shown to be problematic and in any event in a state of flux. The suggested approach would necessitate that limiting terminology such as "library skills" and "user education" would not be used in teaching the general information gathering strategies. The terminology related to library skills could be to the detriment of any attempts librarians make to provide information literacy education, or to form partnerships with lecturers in developing information skills curricula.

The library-based information literacy and information skills movements have remained essentially a librarianship issue, despite librarians' claims of the significant role they could play in ensuring that students become information literate. Where librarians have managed to establish a niche in the teaching of skills for lifelong learning, this has only been successfully accomplished when undertaken in partnership with lecturers. This is an issue which relates to the necessity for skills to be taught in a credit related, subject specific, curriculum integrated manner.

The information literacy movement is topical in librarianship today. It appears that, having discovered what its place is in the quest for educational excellence, librarians will strive to promote their role in the teaching of information skills. Whether such teaching will remain confined to library skills, or successfully expand into the wider realm of information skills, will depend on whether the education sector can be convinced that librarianship does indeed have something to offer in the learning process. In the university realm, this implies that both the lecturers and the top management of the institution must have positive attitudes towards what librarians are suggesting for the learning process.

Librarians must be able to convince their prospective partners in teaching that "library skills" programmes need not concentrate only on lower-level locating skills but can advance to the higher level intellectual skills evident in the information skills model, notably if the skills are taught in a subject related manner. The librarians' aim should not be primarily to develop library skills, but rather to facilitate the whole learning process through the development of information gathering strategies. This has important implications for the training of librarians, since the curricula in the Library and Information Science (LIS) discipline would need to pay attention to additional aspects such as didactics, learning theories, and the wider implications of information skills as compared with library skills.

9.3 THE EMPIRICAL STUDIES

The three empirical studies provide an illustrative example of how Unisa, as a distance learning institution, perceives the role of library skills within the learning process. Sub-problems investigated in this component of the research project are what library skills are expected from first year students, and what obstacles there might be to teaching library skills as part of the formal curriculum of a distance learning institution.

9.3.1 Findings

In chapter 1, the problem under investigation was contextualized by outlining several aspects which constitute the circumstances under which the information literacy of distance learning students is investigated. Two background problems have a strong influence on the library and information skills issue as it relates to Unisa, namely the under-prepared student body at first year level, and the lack of a library ethos in many students. These two factors determine that there are deficiencies in the information skills in general, and the library skills in particular, of many students at the entry level to the University.

Unisa has attempted to address these problems in various ways, for example by offering courses to upgrade reading, writing and study skills, by making adjustments of an academic support nature within specific first year courses, and by providing user education programmes. The background problems and the attempts made by the University to address these must be seen in the context of the large number of first year students and the fact that the distance learning factor determines Unisa's teaching methods and modes.

9.3.1.1 Library skills teaching and library use expectations at Unisa

Empirical study A determined that the Unisa library makes provision for library skills teaching at undergraduate and postgraduate levels. All first year students from 1991, for example, received in their study package a workbook on basic library skills. Students do not need to visit a library to utilize the workbook, and the content of the workbook is not related to particular subjects.

The second empirical study investigated the extent to which first year courses expected their students to make use of Library services. The mere use of these services (by means of obtaining recommended books from the Study Collection) was taken as the absolute minimum library skill requirement, even though the Unisa method of supplying undergraduate students with library materials does not require any library skills. This approach in establishing library skills requirements might seem fatuous in view of the fact that the highly evolved library services make it relatively easy for students to obtain library material. However, it is the only feasible method to determine library use requirements (and by extension, possible library skills requirements) of the subject courses at this distance learning university.

Empirical study B established that half of Unisa's first year courses do not expect students to make use of Library services. Thus, half of the first year courses had no indication of library skills requirements.

9.3.1.2 Attitudes of lecturers to library skills

In empirical study C, the attitudes of Unisa first year lecturers to the necessity of library skills for their students was explored, and a grounded theory of library skills requirements for Unisa was proposed. Although this theory - briefly, that the context within which students are taught

at first year level at Unisa requires no application of library skills - summarizes the essence of the findings of empirical study C, it in no way provides an indication of the wide-ranging issues which arose in the qualitative analysis in this part of the project. It is not possible to include in such a theory the tapestry of reasons for the lack of library and information skills in students, and why lecturers regard the teaching of library skills as a luxury at the entry level.

The core category in the qualitative analysis was nescience (in both the first year students and the lecturers) of the role of library skills in the learning process. From the data, the lecturers' ignorance appears as a concealed reason for their not requiring library skills of their students, and is related mainly to the lecturers' nescience of library skills as a component of information skills. There was also the indication that lecturers did not need to practise library skills to any great extent themselves, since the Library, through the subject reference librarians, provides lecturers with a high level of personalized service.

The overt reasons for lecturers precluding library skills requirements at first year level are manifold. A major problem is the underpreparedness of most first year students for tertiary studies. Lecturers need to concentrate on upgrading general information skills (including basic skills like reading and writing), while at the same time teaching subject content. The additional remedial work which is required in first year courses is seen as already burdening both students and lecturers. As a result of the enormity of the problem at first year level, lecturers regard library skills as a luxury which they do not see their way clear to providing.

There is also strong evidence that lecturers had never thought about library skills as relevant to the learning process.

One of the wider issues which became evident in empirical study C is that the policies of the University and the Library could be inhibiting lecturers from encouraging students to use the Library.

(a) Findings related to other surveys

If the findings of the survey of Unisa lecturers' attitudes to library skills are seen in the light of similar surveys undertaken elsewhere (see chapter 5, section 5.4), they confirm most of the findings of other surveys. These include that lecturers expect students to have library skills, find these lacking, but do not regard it as their task to ensure that such skills are taught (Thomas 1984; Kemp & Nofsinger 1988; Wheeler 1988; Haws, Peterson & Shonrock 1989; Maynard 1990). Other findings, for example that lecturers themselves are not necessarily proficient library users, were also noted in the literature (Kenney 1983). The "flip-flop" (discrepancies) in attitudes was also found by Wheeler (1988) and Maynard (1990).

That lecturers need positive attitudes towards the whole issue of library skills teaching is mentioned in most studies (for example Knapp 1958; Cowley & Hammond 1987; Cowley 1988; Baker 1989; Morris 1990; Hardesty 1991). The most extensive survey of lecturers' attitudes was undertaken by Hardesty (1982 and 1991); his findings were outlined in detail in chapter 5, section 5.4.2.1. The survey of Unisa lecturers' attitudes confirms most of Hardesty's findings. One of Unisa's unique findings - that the lecturers' emphasis on reference techniques could be a way of easing their consciences on their lack of library skills expectations - could have a parallel in Hardesty's findings. He suggested that lecturers' task in book selection for the library could be their way of easing their consciences on their lack of library skills requirements.

Few surveys of the attitudes of distance learning institu-

tions' lecturers exist (examples are Haworth 1982a and 1982b; Grimison 1988; Burge, Snow & Howard 1989). None of the distance learning institutions covered in these surveys reported that the student body at entry level was largely underprepared for university studies. Since this was a major finding of the Unisa survey, no comparisons can thus be made.

There are, on the whole, few surveys of lecturers' attitudes to library skills reported in the literature (Maynard 1990; Hardesty 1991) and the Unisa study could thus make an important contribution to the field, especially with regard to distance learning institutions. The findings of the Unisa study could also be of particular relevance to any university which has a large body of underprepared students.

9.3.1.3 Summary of findings of empirical studies

At Unisa, library skills are not required at first year level and it can be inferred that such skills are not required at subsequent undergraduate levels either. The Library does provide library skills workbooks to undergraduate students, but the study suggests that this approach is unlikely to improve students' library skills. The attitude of Unisa lecturers towards the library skills issue at first year level is not positive and it appears that lecturers are ignorant of the role of library skills in the learning process.

9.3.2 Interpretations and implications

Against the background of the findings of this study, what are the implications for the teaching of library and information skills in a distance learning institution? Since Unisa was used as an illustrative example of a distance learning university, the interpretations and implications will be outlined as they relate to Unisa specifically. The

recommendations which are made in section 9.4 are based on the implications of the Unisa findings, but are generalized in order to be relevant for wider consideration.

The overall finding of the empirical studies is that, in spite of Unisa's first year students being provided with user education and although some first year courses ostensibly expect students to make use of services of the Library, it is unlikely that either of these "requirements" will ensure that students move from the entry level into second year courses with the ability to utilize a library for their studies. Since the same approach to user education and to the use of the Library is applied at second and third year levels, it can be inferred that the chances of Unisa students possessing library skills when graduating are slim.

In view of the problem statement which guided this study, it can be concluded from the findings that the place of library skills in the information skills model is not recognized by lecturers at Unisa, and that library skills are not relevant at the first year level of the University.

Although the Library had started (in 1989) to take the route of proposing that a credit bearing, subject related library skills element be incorporated in the formal curriculum, this route was abandoned and the present stand-alone workbook method was introduced instead. There was no evidence of a partnership between the Library and teaching departments in the workbook programme for first year students, and the programme had not yet been evaluated at the time of writing (September/October 1992).

It was suggested from the findings of empirical study A that it is unlikely that first year students will improve either their library skills or their general information skills by means of the present workbook approach. The workbook is neither Unisa-library-specific nor Unisa-course-specific, and there is little incentive for students to complete the workbook since there is no recognition given in the form of

credit for its successful completion or the application of any of the skills to subject courses.

The findings of the study also showed that independent information seeking skills are not expected of students. Courses which are based solely on study guides ("lecture" approach) require no independent information seeking. Courses which add a prescribed book to the study package ("lecture-textbook" approach) require some information seeking, but this cannot be regarded as independent information seeking in the true sense of the words. Courses which rely on the Study Collection to provide students with recommended books ("reserves-lecture-textbook" approach) ostensibly require the most information seeking of students. Even in the latter case, however, the information seeking could not really be regarded as independent, since the material has been preselected by lecturers and made easily available by the Library. In any event, the policy of the University is that the use of recommended material cannot be regarded as essential for examination purposes. This implies that, for examination purposes, students need not study any sources beyond those which are prescribed.

The lecture-centred mode of teaching possibly denies students the opportunity of learning how to undertake independent information seeking. As a result, there is the possibility that most Unisa students are merely passive learners.

All the factors mentioned here could provide obstacles to the teaching of information gathering strategies to Unisa students. Other potential obstacles could lie in several contradictions which became evident in this study.

Empirical study B revealed a strange paradox in Unisa's policies. Lecturers can recommend extra reading material for students if they so wish. The Library will then provide these sources to the students at their request, but - the catch-22 situation - the University does not deem any infor-

mation beyond that provided in prescribed material as necessary for students anyway!

When the various findings on library skills at Unisa are viewed globally, a number of striking contradictions are evident. There appear to be gaps between rhetoric and practice in several areas. From the paradoxes, it can be inferred that the University lacks an overall policy on the library use requirements of students.

9.3.2.1 Paradoxes

The paradoxes discovered in this study could provide obstacles to the successful teaching of independent information gathering strategies to Unisa students. Unisa's Mission Statement (Unisa [1990]) and its Policy on Formal Teaching (Unisa 1984) both imply that the development of information handling skills is part of a student's intellectual development. The Unisa library's Mission and Aims (Willemse 1991: 521-522) are in support of this interpretation, and particularly state the Library's commitment to developing library skills in students.

Yet the policies and practices of the University could be denying its students the opportunity to fully develop the full range of information skills. Students cannot become information conscious in a situation where they are provided with a package of study material and are not expected to undertake independent information seeking in order to expand this package of preselected information and thereby learn how to learn.

(a) User education

The most evident paradoxes relate to the user education programmes of the Library.

* Undergraduate students are provided with library skills workbooks, but they do not need to apply library skills in either the Library or their subject courses.

* While the UELO division of the Library provides user education (which presumably is intended to encourage and help students to use the Unisa libraries), the Study Collection division appears to be discouraging library use by suggesting that lecturers recommended fewer books, and by promoting the use of a book of readings to replace recommended books.

* The main teaching approaches of the University ("reserves-lecture-textbook", "lecture-textbook" or "lecture only") are contradictory to the whole objective of user education, which is to make students independent information seekers.

* Although research strongly indicates that library skills should be taught in a subject related, course integrated manner, and that this requires partnership between librarians and lecturers, this approach has not been followed by the Library in the workbook programme at first and second levels.

(b) Recommended books

Apart from evidence that a "reserves-lecture-textbook" approach does not support or encourage independent learning, there is irony in a situation where recommended books are supplied to students, but the University states that the use of such material is not necessary, and the lecturers do not regard the utilization of such sources as obligatory. The Library goes to the expense of providing sources and services to undergraduate students which are essentially not required.

(c) Removal of study obstacles

The University's approach in removing or reducing factors which might provide obstacles to study could be decreasing students' chances of becoming independent learners. It is ironical that, as the characteristics of the information society become more pronounced in South Africa, Unisa's evolving teaching methods appear to be moving away from resource based learning. The lecture-centred teaching approach appears to be increasing, whereas it needs to decrease. It should rather extend into methods which demand of students that they independently supplement a basic study package with additional information which could be located in a variety of sources and resources, including those provided by libraries.

To support Unisa's lecture-centred study approach, students' access to information in the Library is made easier through the recommended books/Study Collection method. By simplifying the use of Library services, the University has ironically ensured that undergraduates do not need to apply independent information seeking skills.

(d) Changing student profile

Although the student profile at Unisa appears to have changed substantially over the past decade, it might be found that the University's teaching methods and modes do not suit this altered student body. Unisa still provides tuition essentially through its traditional means suited for "off campus" students who, in the past, were mostly prepared for the higher level of study required at tertiary institutions.

* The printed mode is the main method of providing tuition, although this might not be the mode most suited to students from cultures where oral communication is the norm.

* There is the indication that a substantial number of students could be within easy distance of a Unisa campus or study centre.

* Unisa has found it necessary to provide study facilities for students. This indicates that an increasing number of students have become "residential" in that they use a Unisa campus or study centre on a daily basis.

* Lecturers believe that students should not be overburdened since they are studying part time, yet there appears to be a growing number of full time students.

* The phenomenon of private tutorial colleges (Gous 1992b), which provide tuition for Unisa students, raises several questions with regard to the distance learning methods and modes of Unisa. For example, the existence of these colleges could indicate that some Unisa students might be in a position to attend classes regularly, that some are full time students, that many are not coping with the existing teaching approaches of the University, that students may be prepared to pay extra tuition fees for additional (face-to-face) teaching, and that many might feel isolated from other students.

* The underprepared first year student body is no longer a recent phenomenon, and the problem is not expected to reduce in the near future. Yet there has been a hiatus since the decision in 1990 to discontinue the bridging courses. Apart from the (elective) programmes of the Student Services Bureau (SSB), the (non-compulsory) use of the library skills workbooks, and the (discretionary) remedial approach taken by some first year courses, in 1992 there was no formal approach within the curriculum to address the problem of the underprepared students. The methods of addressing the problem appear to have remained reactive, not proactive. (See section 9.3.3.)

(e) Lecturers' ambivalence

Lecturers state they believe students should acquire library skills. However, it is apparent that lecturers have not thought about the issue, and they do not see students' lack of library skills in such a serious light that they are prepared to address the problem. Lecturers are not sure what library skills comprise, yet they react with surprise at the thought that a student might graduate without such skills.

(f) Information technology

There is a dependence on information technology (IT) for administrative procedures on the various Unisa campuses. The Unisa library also offers services which are heavily reliant on IT to provide ease of access to information. There is no doubt that the University is operating as a highly automated organization within an information society. It has the IT facilities, the people resources and the information resources necessary for educating students in the use of IT. Yet the resources are utilized essentially for administrative purposes. With few exceptions, the University's IT resources are not being utilized to help the majority of its students become acquainted with the technology - a knowledge which is essential to information literacy today.

9.3.3 Rumblings of change

Several investigations and projects which were still underway towards the end of 1992 could ultimately have an influence on the role of library and information skills at Unisa. Although it is not possible to correctly forecast how any such projects could affect the findings of this study, they will be mentioned briefly here to indicate how the library and information skills issue might be affected in

the near future.

* A committee is investigating the present Unisa practice of students registering for an "academic year", the existing model being similar to that of residential universities. Alternative models are being investigated, for example undergraduate registration being possible throughout the year, and several examination sessions being held a year (*'n Nuwe model vir Unisa* [1992]).

* A project investigating the use of IT at Unisa has been underway since 1990. The objectives of the project are to determine the IT environment required by the University to support teaching, research, community service, managerial and administrative functions, and to draw up and implement a strategic plan for the establishment of an integrated IT environment (Smit 1992).

* The Study Collection division of the Unisa library is continuing with its approach in suggesting a reduction in the number of recommended books used for undergraduate courses, especially at first year level. The emphasis here is on using books of readings to replace recommended books. The intention is to eventually replace all recommended books for a first year course with a single book of readings. This volume would either be provided by the Library or another department of the University (on a year long loan, or for sale), or would be supplied as part of the study package for which the student pays on registration. This project would be the second stage of a pilot project (the first one which started in 1991 not having proved successful), and could involve the nomination of at least ten first year courses to be used as part of a pilot study (Shillinglaw 1992).

* A proposal for the introduction of a course on online searching for postgraduate students was submitted to the Academic Advisory Committee in 1991 (McGillivray [1990]). Further proposals, including a curriculum for such a course (which would be elective for postgraduate students), have

been made by a committee appointed to investigate the matter (Harley 1992).

* The Department of Library and Information Science is introducing a new three year Information Science course which will also be open for B.A. students from 1994. The first year course provides an introduction to the information phenomenon; one of the papers at second year level is on information literacy. (The curriculum for these new courses is not related to the study undertaken for this thesis. The new curriculum does not follow the same approach to information literacy as this study.)

* A new approach to addressing the problem of under-prepared students has been suggested by an *ad hoc* working group (*Akademiese ondersteuning*. [1992]). This working group was formed as a result of the decision in 1990 to phase out the three existing bridging courses offered by the English, Afrikaans and Accountancy departments, and to investigate another method of academic support (Harley 1990). The *ad hoc* working group's report defines the shortcomings in Unisa's present approach to academic support for underprepared students, outlines the conditions which are necessary for academic support to be successful, and proposes a model for "student development". The proposed model suggests that each degree should have one compulsory first year course which aims at developing students (upgrading skills which are lacking) within the teaching of the subject matter of that course. The proposed model is based on findings that, in order for academic support to be successful, it must be credit bearing, subject related, and compulsory. The proposed model was under discussion by Faculties at the end of 1992, since the proposal suggests the implementation of a compulsory student development component from 1994.

9.3.3.1 Implications

Certain implications for Unisa are evident in the light of

the investigations underway. Three particular implications which relate specifically to the findings of this research project are noted here.

(a) Recommended material and the Study Collection

Proposals that recommended material be replaced by books of readings are not new. The idea was suggested, for example, at a distance learning conference in 1987 when possible alternatives for the Study Collection's procedures were mooted:

Alternatives to the large scale duplication of whole titles need to be investigated. It satisfies the academic aims ... to supply the distance student with a package of reprinted material rather than with a list of books to order. The package would perform the same educational function as the books for the distance student, and would reduce for the student the waiting time implicit in the postal delivery system, waiting lists and other delays (Shillinglaw 1987: 195).

That such a "package" would reduce obstacles for students, and simplify the Study Collection's procedures, is not questioned. However, certain issues need to be considered in relation to undergraduate students' independent information seeking skills.

* The resulting reduction in library use would be contrary to the objective of providing user education.

* Students would be exposed to an even narrower range of sources providing preselected information.

* There is the possibility that the book of readings could eventually be incorporated in the student's study package received on registration. Ultimately all Unisa courses could become "one-stop-shops".

* Independent information seeking would become even less

relevant to Unisa courses.

* The matter has not yet been thoroughly investigated, for example by establishing the attitudes of lecturers, or by first considering the role of library skills (in theory, and within the learning process at Unisa) before taking steps which would reduce library use by students.

(b) Formal approach to the problem of underprepared students

It appears that the majority of first year students in future might be compelled to register for a student development course. The aim of such a course would be to bridge the gap between the low level of information skills found at first year, and the higher levels of such skills required at subsequent undergraduate years. It appears that the proposed student development courses (there would not necessarily be only one course, since each Faculty could nominate a different first year subject course to incorporate the student development element) would be compulsory, credit bearing and subject related.

The proposed new model for student development courses as envisaged at the end of 1992, passed through Senate in October. Even should the courses not eventually be implemented as suggested in the model proposed by the *ad hoc* working group, it is apparent that the University is on the road to implementing student development for underprepared students by means of a formal approach. It is envisaged that specialists in the area of academic support (for example with regard to the upgrading of reading, writing, and study skills) will advise lecturers on the preparation of student development curricula. If the proposed new system of student development is successful, there should be an improvement in the general information skills of students by the time they register at second year level. Suggestions were also made that student development could be extended to

cover all undergraduate curricula, starting with an intensive remedial approach at first year level and then continuing with developmental features through to the final year of undergraduate study - and possibly also at postgraduate levels such as Honours.

(c) Information gathering strategies

It appears that the new approach which will be taken to address the problem of underprepared students provides an ideal vehicle for the teaching of information gathering strategies to undergraduate students.

* The student development approach is in line with findings that library and information skills are most successfully taught in a subject related, credit bearing manner.

* If specialists are to be used in an advisory capacity for the development of new curricula, specialists in the area of information gathering strategies should be included in this panel of experts.

9.4 RECOMMENDATIONS

In view of the findings, especially that first year students (and ultimately possibly all undergraduate students) in a distance learning context are not expected to apply library skills, certain recommendations are made. Although these recommendations are based on the findings in the Unisa situation, they could be relevant for any distance learning institution. The recommendations are therefore generalized here for wider consideration.

9.4.1 Partnership between library and lecturers

The institution's library should take steps to ensure that

it works in partnership with teaching departments with regard to issues related to students' use of the library and their learning of independent information gathering strategies. Such a partnership would be beneficial for mutual positive attitudes, for example in connection with library skills programmes, or with regard to the teaching of information gathering strategies.

9.4.2 Information gathering strategies in the learning process

The library should ensure that the role of library skills or independent information gathering strategies in the learning process is recognized by the teaching departments of the institution.

9.4.3 Information gathering strategies and student development

Any steps taken by the institution to address the problem of underprepared students should include the consideration of the importance of information gathering strategies for lifelong learning.

9.4.4 The library and development of students' skills

The library should be represented wherever other sections or committees of the institution are involved with issues concerning the upgrading of students' skills.

9.4.5 Students and libraries

The institution should establish what the role of its library, and other libraries to which students have access, should be in the formal curriculum, and suggest what degree

of library use could be expected of undergraduate students.

9.4.6 Active learning

The institution should investigate whether its present teaching approach is suitable for encouraging active learning in students.

9.5 SUGGESTIONS FOR FURTHER RESEARCH

A number of topics which warrant further investigation can be suggested as a result of the literature study and empirical studies undertaken in this research project.

* Methods of incorporating information skills teaching at school level in South Africa, taking cognisance of the fact that the majority of schools do not have functional media centres.

* The identification of potential sources from the whole spectrum of information resources (also referred to as "resources of the real world") for particular subject courses, especially those which are taken for professional degrees (for example law, social work, nursing). Such sources and resources would not be limited to those which are library-related.

* The role that library skills can play in improving the study methods of underprepared students.

* The role of resource centres in teaching information literacy.

* How the attitudes of lecturing staff towards library skills can be influenced positively.

* A curriculum for information handling skills to be in-

tegrated across a distance learning university curriculum (in all subjects, from first year level to final year of undergraduate study).

* A programme on information literacy for students, presented on a commercial basis, which would be recognized for credit purposes by universities in South Africa.

* An investigation into whether the present Unisa library system is suited to mass undergraduate student requirements.

* The possibility of each Unisa student being affiliated to a suitable library near to him (for example a Unisa library, another university or technikon library, a public library, or a resource centre) for the purposes of learning and applying independent information seeking skills as part of his studies.

9.6 COMMENT

One of the main intentions of this study was to establish that library skills should be a requirement in order for students to graduate from university. However, this was not found to be the case, since it would appear that a more general approach might be more useful, notably that information gathering strategies be taught instead.

This finding provokes certain questions on the role of a library in a distance learning institution:

* Is there merely an assumption that students should make use of the institution's library?

* If students of a distance learning institution are not able to tap the resources of the library, what justification is there for the institution to have a library?

* If the library of a distance learning institution exists essentially for the purposes of the lecturing staff, is the use made of it extensive enough to warrant the expense of providing library services to this limited group?

APPENDIX 1: TRANSLATIONS OF AFRIKAANS TEXT

CHAPTER 1

Section 1.1.3

p.5: Information utilization is resource utilization, but how many students nowadays are actively taught and motivated to independently and systematically develop this resource?

Section 1.2.1.5

p.17: Scientifically justified choice of information sources, formulation of problems and goal statements in scientific investigations, criteria for determining the extent of scientific character and other signs of expertise in the content of information sources, economical use of the sources (including the application of economical reading methods), criteria for the citation of texts and abstracting, compilation of bibliographies (literature consulted and so forth), and scientifically justified report writing.

CHAPTER 2

Section 2.3.2

p.50: ... the individual's conscious knowledge of his own information needs and his active conduct to satisfy those information needs. Hence, information literacy comprises knowledge of required information; knowledge of the place where information can be obtained; skills to obtain it (which includes, *inter alia*, computer literacy); knowledge of the way it can be used to change the attitude, behaviour and the skills of an individual; and the motivation to obtain and use the information.

Section 2.3.3.1

p.65: Information education can be defined as the process of education by which people are intellectually equipped to effectively use information as a resource in their lives, whether for decision making and/or education and/or recreation and/or development and/or problem solving, *et cetera*.

p.65: Information literacy is merely a "condition" of literacy, or "level", and must be regarded as the "product" or "result" of a process of information education ... information education is thus the process by which individuals

are equipped with specific information attitudes, knowledge of information and information use, and appropriate skills in information and information use.

CHAPTER 8

Section 8.3.1.2

p.268: "I think they have heard of it, but how to use it, I doubt it."

p.269: "No, I rather doubt that."

p.269: "I can only speak from my own experience. Although we were taught at school that there are certain skills one uses in a library, the importance of this for the rest of your life was never pointed out. The research aspect of using a library was never emphasized ... the retrieval of information aspect, the research aspect, is not emphasized enough in the schools. It's merely ... like a recipe you learn, but to go and bake the cake is something else."

Section 8.3.1.3

p.271: "Well, all I can say is that I see our students can't read. Except that they also can't write. But I think the big thing is that they don't know how to read."

Section 8.3.1.4

p.273: "At school it all revolves around distinctions ... they take in a lot, learning like parrots. I'm probably generalizing, though."

Section 8.3.2.3

p.279: "Look, with us it has to do with the logical solving of a problem ... Here you sit with a problem, now how are you going to solve it? Which steps, what are the logical and intelligent steps to follow ..."

p.280: "The student that does make use of external literature - we'll look at how he approached that literature, how many external sources he consulted, did he understand those sources in that he used his own words in the assignment, or is it merely a case of him copying from the books."

Section 8.3.2.4

p.284: "I think they are wonderful, really."

p.284: " ... the subject reference librarians ... they're people that go out of their way to make information available to us."

p.284: "Not the lazy steps that I take by asking the subject reference librarian ... I'm very good friends with my subject reference librarian, so I pick up the telephone."

p.284-285: SJB: "Are you a regular user of the Library?"
X: "Yes, but I always ask the subject reference librarian."

p.285: "Yes, if you have a query, then they go and find the stuff, but I haven't done it myself. They do it for us."

Section 8.3.3.3

p.292-293: "He sits at home and has to use library books to write his assignment and to pass ... it's different from a residential university where a library possibly plays a less important role ... I think Unisa, as a correspondence university, lends itself to students being dependent on a library. Whether it is Unisa specifically or their local library, they are dependent on it."

p.294: "Look, with distance education as we know it at Unisa, a library is a monster for most students. They don't know where to go. My own wife at M-level walked into Unisa's library in fear and trepidation, and wondered what she had to do with the thing. So I can't imagine that the students see a friend in the Unisa library. Not our first year student, especially if he's somewhere far from Pretoria ... I think it's a mysterious place for them, where there are many ways to get hold of a book, about which they know nothing."

Section 8.3.3.4

p.296: "Let's take an example of a student living in Bloemfontein, who has an acquaintance in the University of the Orange Free State library ... She'll ask that person in the Library to take out one or two books ... I think it probably happens often."

p.296: "It would be interesting to undertake such a study to determine the percentage [Unisa students] that do use the Unisa libraries."

Section 8.3.3.5

p.299-300: "Yes, I feel that way. It is definitely applicable. If a student has to write a bibliography, for example, and he doesn't know where to find the information in the book to refer to in the bibliography. I mean, if he can't do the bibliography properly. So, he's dependent on his knowledge of using library books for the technical aspects ... for that reason I feel it is important that when

a student, especially let's say a first year student, comes into the Library and he enquires about a book from the subject reference librarian and she helps him to locate that relevant source. And he'll go back to her again and enquire about, for example how to get certain information from that book, for example the date of publication ..."

p.300: " ... how to consult the relevant book. Not only concerning the content but also that which is geared towards the technical presentation."

p.300: "This department, and I'm speaking now of our department which emphasizes the technical aspects of assignments, can therefore state that a need exists for the presentation of a course in library skills."

Section 8.3.3.5

p.301: "So, the card catalogue and the computer, as I see it, are the first points of retrieval ... and another important thing is that the students must realize that in the Library there are people that can help them ... The role of the subject reference librarian must also be geared more towards the student. The student must know that there is someone that can retrieve information in this subject. So, in the first place, they must at least be able to help themselves with the bibliographic reference and interpret it. Card catalogue, the computer, retrieve the thing, that he at least knows this thing is in the Library or not in the Library. And from there he must realize that there are people who can help him."

p.301: X: "Library skills are merely technical skills, it's not retrieval in a scientific sense of the word ... he must know how to get to a book on a particular shelf ... He must know the wheels and paths of the Library so as to reach the final point - that is, the information.

SJB: "When the student has located the book, the way in which he uses the information, the assimilation-"
[interrupted]

X: "Mmm, that's something else. It's not a library skill anymore, it's an academic skill."

Section 8.3.3.6

p.302: "We would have liked to have seen that the students handle and assimilate the books recommended for assignments, but the problem is always the availability of the books."

Section 8.3.4.3

p.312: "Because the recommended literature has such a low profile, lecturers' don't really mind whether students read recommended works or not. They can pass with the prescribed book. And the students realize it, and they never get to the

Library."

Section 8.3.4.5

p.318: "... the New Testament community in South Africa has a standard method of citations and references, and we work with the Harvard method ... There is a problem with people in our department. Some feel that it is not important for students to know it. I feel it is so important. I feel that it's so important that I wanted to ask a question in the examination: "Arrange the following information on the prescribed book according to the Harvard reference method", and I jumbled everything together - date, title of the book, the author ... two marks. My colleagues said it wasn't prescribed work and we couldn't ask it of the students."

p.318: "We mainly use the Harvard method ... we are fairly strict concerning the reference technique ... [students are] penalized. I, for example, allot twenty percent to reference technique ... As I see it, the link is the Library. If he doesn't know how to consult a book, he will not necessarily do the technical aspects properly."

p.318-319: "Each department's reference technique differs. It confuses a student so much that he doesn't know which way to turn. One is more difficult than the other, and they don't correspond with each other. It must be done uniformly, and this is the job of the Library."

Section 8.3.4.6

p.321: "Now, from a reasonably wide field ... in the first year we cover only certain sections. Different authors use different notations, so the student becomes totally lost at first year level when he first goes and searches in a book - because the books are fairly comprehensive, they cover the whole field - and he has to go and search for a specific field and that guy's notation ... and there isn't one book in Afrikaans. They're all American and British books."

Section 8.3.4.7

p.321: "Now the big problem is that Unisa's whole set-up, I think, doesn't lend itself to that. Otherwise a revolutionary change in our approach ..."

Section 8.3.5.2

p.326: "It's not part of our tuition. Because Library Science as such, and information retrieval, is a subject area on its own and we shouldn't go and mess with it."

p.326: "I feel we can only refer a student to the Library, but how to use the Library, that, I feel, is the respon-

sibility of the Library itself."

Section 8.3.5.3

p.328: "I think it's a disgrace."

APPENDIX 2: INTERVIEW GUIDE

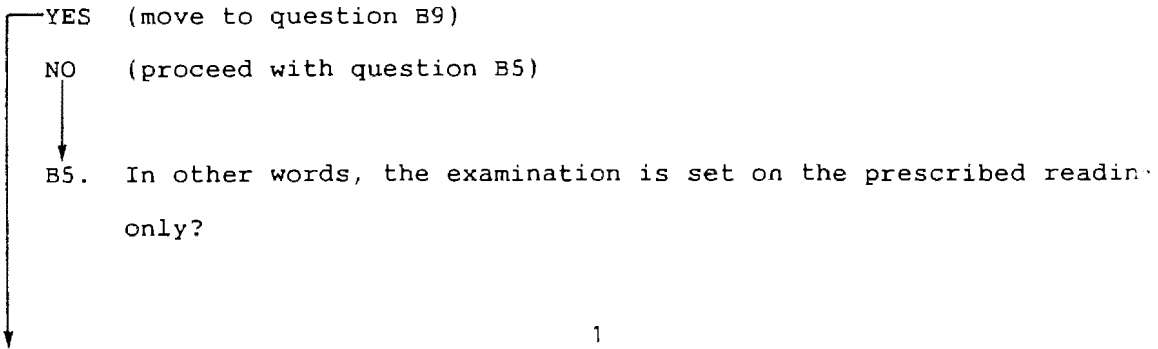
DATE:.....TAPE NO:..... LECTURER:.....
DEPARTMENT:..... PAPER CODE:.....
FIRST-YEAR COURSE:..... NUMBER OF PRESCRIBED BOOKS:...
STUDY COLLECTION USE: YES NO LIBRARY INSTRUCTION: YES NO

A. General

- A1. How long have you been lecturing at Unisa?
- A2. How long have you been teaching this first-year paper?
- A3. Were you involved in the compilation of the tutorial letter 101 for this year (1990)?
- A4. Were you involved in writing the present study guide(s)?

B. Paper requirements

- B1. *What figures are reflected on the 1990 annual report for:
 - number of pages prescribed reading?
 - number of pages recommended reading?
- B2. How many study guides does the paper have?
- B3. How many prescribed books are there?
- B4. Are there any recommended or additional sources listed in tutorial letter 101?



B6. Is this due to the nature of the subject?

B7. Can you be more specific?

B8. Do the second-year or third-year papers for this subject have recommended sources?

(move to question B14)

B9. How many recommended sources are there?

B10. Does the paper have additional sources?

B11. Are students required to use recommended or additional sources for assignments?

B12. Is the use of recommended or additional sources taken into account when marking assignments?

B13. Which aspects of use are taken into account:

- number of sources used
- relevance of sources used
- assimilation of material.

(proceed with question B14)

B14. In assignments, are the students required to use a method of referring to sources consulted, for example the Harvard method?

B15. Are students required to read sources which are mentioned in the study guide, but which are not listed as recommended or additional in the tutorial letter 101?

B16. Are these sources in the Unisa library?

B17. When a student has a problem, do you ever refer him to the library if you feel this would help him with the problem?

B18. Can you be more specific about this?

C. Value of library skills in general

- C1. What do you think students should know about using a library?
- C2. Do you regard a student's ability to use a library to be a part of the learning process?
- C3. What do you believe the role of the library is in the learning process?
- C4. Do you feel library skills are transferrable to other situations?
- C5. Do you feel that library skills are a part of the preparation for assignment writing?
- C6. What do you see as the similarities or differences between preparation for assignments, and research methodology?
- C7. What major difficulties do you feel there are in getting distance education students to use a library?

D. Teaching of library skills

- D1. Do you think library skills are adequately taught at school level?
- D2. Should Unisa students be required to take a course in library skills?

NO (move to question D9)

YES (proceed with question D3)

D3. At what level should a library skills course be taught?

D4. Who do you think should offer the library skills course:

- the library
- teaching department(s)
- Student Services Bureau
- a combination of two or all of these?

D5. Should this course be:

- elective
- compulsory?

D6. Should this course be

- credit bearing
- non-credit bearing?

D7. Should this course be

- integrated into one or more existing papers
- separate?

D8. If the course is to be integrated, can you suggest any existing papers where library skills could be incorporated?

(move to question D10)

D9. Why do you feel that Unisa students do not need tutoring in library skills?

D10. Would you want to be involved in teaching a course on library skills?

E. Lecturer's use of library

E1. Do you regard yourself as a regular library user?

E2. Do you ever feel you could make more intensive use of the library?

- E3. Are you satisfied with the services of the library, as a personal user?
- E4. Are you a regular user of another library, such as a public library?
- E5. To what extent did you use your (alma mater) university library as a student?
- E6. In retrospect, do you feel you made adequate use of the library as a student?
- E7. Do you think that your students use a library like you did as a student?
- E8. Which of the following have you used in the Unisa library:
- Study Collection
 - card catalogue
 - computer catalogue (OPAC)
 - interlibrary loans
 - services of the subject reference librarian
 - microfiche or microfilm
 - CD-ROM (reference sources on compact disks)
 - printed indexes or abstracts
 - photocopy facilities?
- E9. Have you received any library skills instruction at Unisa?
- E10. Were you present during any library skills course(s) offered to your students?
- F. To conclude
- F1. There was an article on the use of Study Collection by first-year courses, published in Progressio earlier this year. Did you read it? [Progressio 12(1) 1990]

F2. What is your feeling about students not requiring library skills in order to graduate?

F3. Is there anything you would like to add with regard to library skills of university students?

BIBLIOGRAPHY

- ACRL see Association of College and Research Libraries.
- Adams, M. & Morris, J. M. 1985. *Teaching library skills for academic credit*. Phoenix: Oryx.
- Adey, A. & Barnard, S. 1992. Counselling students at a distance: action research involving the conference telephone. *Progressio*, 14(2):33-64.
- Affleck, D. 1986. A curriculum-integrated bibliographic instruction programme at the academic level. *Education libraries bulletin*, 29(2):37-48.
- Aitchison, J. 1991. Community information services in public libraries in South Africa in the 1980's: an overview of the literature. *Innovation*, 2(June):10-18.
- Akademiese ondersteuning*. [1992]. Ongepubliseerde verslag, Universiteit van Suid-Afrika.
- Akeroyd, R. G. 1991. White House conference on library and information services: expand literacy, increase productivity, strengthen democracy. *Library administration and management*, 5(2):70-72.
- ALA see American Library Association.
- Allen, K. 1970. Student and faculty attitudes. *Library college journal*, 3(Fall):28-36.
- Allen, M. B. 1987. *Information literacy, the library and the basic reader/writer*. Paper presented at the 38th annual meeting of the Conference on College Composition and Communication, Atlanta, March 19-21. (ED 284580.)

- Allen, N. 1989. An integrated planning process for library skills: paper-based and computer-based instruction. *Reference librarian*, (24):175-186.
- Aluri, R. 1981. Application of learning theories to library-use instruction. *Libri*, 31(2):140-152.
- Aluri, R. & Reichel, M. 1984. Learning theories and bibliographic instruction, in *Bibliographic instruction and the learning process: theory, style and motivation. Papers presented at the twelfth annual Library Instruction Conference held at Eastern Michigan University, May 6 & 7, 1982*, edited by C. A. Kirkendall. Ann Arbor, Mich.: Pierian Press:15-27.
- American Library Association. 1984. *Libraries and the learning society: papers in response to A nation at risk*. Chicago.
- American Library Association. Association of College and Research Libraries see Association of College and Research Libraries.
- American Library Association. Task Force on Excellence in Education. 1984. *Realities: educational reform in a learning society*. Chicago.
- American Library Association Presidential Committee on Information Literacy: final report. 1989. Chicago.
- Arp, L. 1990. Information literacy or bibliographic instruction: semantics or philosophy? *RQ*, 30(1):46-49.
- Arp, L. L. & Wilson, L. A. 1984. Library instructor's view - theoretical. *Research strategies*, 2(1):16-22.
- Arp, L. & Wilson, L. A. 1989. Structures of bibliographic instruction programs: a continuum for planning. *Reference librarian*, (24):25-34.

- Association of College and Research Libraries. Policy and Planning Committee. Bibliographic Instruction Section. 1979. *Bibliographic instruction handbook*. Chicago: American Library Association. (ED 188623.)
- Babbie, E. 1990. *Survey research methods*. 2nd edition. Belmont, Calif.: Wadsworth.
- Baker, B. 1989. Bibliographic instruction: building the librarian/faculty partnership. *Reference librarian*, (24):311-328.
- Barnard, S. 1990. A skills course in reading, writing, study methods and memory techniques. *Progressio*, 12(1):125-127.
- Barnard, S. 1991. Maak aantekeninge: studeer beter! *Unisanuus*, 18(2):11.
- Barnes, D. 1976. *From communication to curriculum*. Harmondsworth: Penguin.
- Behrens, S. J. 1990a. Literacy and the evolution towards information literacy: an exploratory study. *South African journal of library and information science*, 58(4):353-358.
- Behrens, S. J. 1990b. Use of Study Collection required by first-year courses. *Progressio*, 12(1):120-122.
- Behrens, S. J. 1991a. From user education to information literacy! *SAILIS newsletter*, 11(10):6-7.
- Behrens, S. J. 1991b. *From user education to information literacy*. Paper presented at Symposium on Information Literacy, 26 August. Pretoria: South African Institute for Librarianship and Information Science conference.

- Behrens, S. J. 1991c. Information literacy, in *Proceedings of conference on literacy and basic adult education in Southern Africa, 5-7 September 1990, HSRC Conference Centre*, edited by Y. D. J. Rodda & C. L. Mareka. Pretoria: Human Sciences Research Council, Division for Learning and Instructional Design:193-208.
- Behrens S. J. 1992. Librarians and information literacy: the danger of a part perspective. *Mousaion*, 10(1):81-88.
- Behrens, S. J. & Olën, S. I. 1991. Students' attitudes towards new study guides. *Progressio*, 13(1):19-32.
- Bell, D. 1973. *The coming of post-industrial society: a venture in social forecasting*. New York: Basic Books. (Foreword 1976.)
- Bell, R. 1990. Library literacy in the academic library. *Innovation*, 1(Dec.):32-39.
- Bell, R. 1991. *Developing a library instruction programme for underprepared students in a university library*. [Unpublished handout to accompany poster presentation at ALISER Colloquium on Research Method in Library and Information Science, 30 August; South African Institute for Librarianship and Information Science conference. Pretoria.]
- Bennett, J. A. & Adler, C. B. 1986. Media skills for the information age. *Georgia librarian*, 23(May):46-47.
- Berger, P. W. 1991. Toward a national information policy: what should we expect from a second White House conference? *Library administration and management*, 5(2):73-79.
- Beristain, M. F. 1988. Bibliographic instruction methods and aids currently used in Canadian academic libraries: a survey, in *A place to stand: user education in*

Canadian libraries; a collection of original essays, edited by E. Frick. Ottawa: Canadian Library Association:41-77.

Bjørner, S. N. 1989. *Information literacy in a technological age: a guide toward a curriculum*. Master's Project paper, Antioch University, Keene, New Hampshire.

Bjørner, S. N. 1991. The information literacy curriculum - a working model. *Iatul quarterly*, 5(2):150-160.

Blom, A. 1990. Inligtingkunde en die toepassingsgebiede daarvan. *Suid-Afrikaanse tydskrif vir biblioteek- en inligtingkunde*, 58(2):138-146.

Bloom, B. S. (ed.). 1956. *Taxonomy of educational objectives: the classification of educational goals. Handbook I: cognitive domain*. London: Longman.

Boon, J. A. 1990. *Inligtingsopvoeding as breër uitgangspunt*. Referaat gelewer by Opleiding vir die optimale gebruik van inligting: Simposium oor Strategieë vir die 1990's, 10 September; Suid-Afrikaanse Instituut vir Biblioteek- en Inligtingwese konferensie. Wild Coast Sun, Transkei.

Bourne, D. E. 1990. Computer-assisted instruction, learning theory, and hypermedia: an associative linkage. *Research strategies*, 8(4):160-171.

Boyer, E. L. 1987. *College: the undergraduate experience in America*. New York: Harper & Row.

Bracken, J. K. & Tucker, J. M. 1989. Characteristics of the journal literature of bibliographic instruction. *College and research libraries*, 50(6):665-673.

Brake, T. 1980. *The need to know: teaching the importance of information. Final report for the period January 1978*

- March 1979. London: British Library. (British Library research & development report; no. 5511.)

Bransford, J. D. & Stein, B. S. 1984. *The IDEAL problem solver*. New York: Freeman.

Breivik, P. S. 1974. *Effects of library-based instruction in the academic success of disadvantaged college freshmen*. DLS thesis, Columbia University, New York.

Breivik, P. S. 1977. *Open admissions and the academic library*. Chicago: American Library Association.

Breivik, P. S. 1978. Leadership, management, and the teaching library. *Library journal*, 103(18):2045-2048.

Breivik, P. S. 1982. *Planning the library instruction program*. Chicago: American Library Association.

Breivik, P. S. 1985. Putting libraries back in the information society. *American libraries*, 16(1):723.

Breivik, P. S. 1987a. Making the most of libraries. *Change*, 19(4):44-52.

Breivik, P. S. 1987b. The role of libraries in the search for educational excellence. *School library media quarterly*, 16(Fall):45-46.

Breivik, P. S. 1989a. Information literacy: revolution in education, in *Coping with information illiteracy: bibliographic instruction for the information age; papers presented at the Seventeenth National LOEX Library Instruction Conference held in Ann Arbor, Michigan, 4 and 5 May 1989*, edited by G. E. Mensching & T. B. Mensching. Ann Arbor, Mich.: Pierian Press:1-6.

Breivik, P. S. 1989b. Politics for closing the gap. *Reference librarian*, (24):5-16.

- Breivik, P. S. 1990. National Forum on Information Literacy, in *ALA yearbook of library and information services*. Chicago: American Library Association:209.
- Breivik, P. S. 1991a. Information literacy. *Bulletin of the Medical Library Association*, 79(2):226-229.
- Breivik, P. S. 1991b. Literacy in an information society. *Information reports and bibliographies*, 20(3):10-14.
- Breivik, P. S. & Gee, E. G. 1989. *Information literacy: revolution in the library*. New York: Macmillan.
- Breivik, P. S. & Shaw, W. 1989. Libraries prepare for an information age. *Educational record*, 70(1):13-19.
- Breivik, P. S. & Wedgeworth, R. (eds). 1988. *Libraries and the search for academic excellence*. Methuchen, NJ: Scarecrow.
- Bruce, C. S. 1990. Information skills coursework for postgraduate students: investigation and response at the Queensland University of Technology. *Australian academic and research libraries*, 21(4):224-232.
- Burchinal, L. G. 1976. The communications revolution: America's third century challenge, in *The future of organizing knowledge: papers presented at the Texas A & M University Library's Centennial Academic Assembly, 24 September 1976*. College Station, Tex.: Texas A & M University Library. (ED 168470.)
- Burge, E. J., Snow, J. E. & Howard, J. L. 1989. Distance education: concept and practice. *Canadian library journal*, 46(5):329-335.
- Burrows, S., Ginn, D. S., Love, N. & Williams, T. L. 1989. A strategy for curriculum integration of information

skills instruction. *Bulletin of the Medical Library Association*, 77(3):245-251.

Cameron, A., Cox, J., Kingston, P. & Reid, B. 1987. Tutored videotape instruction (TVI) in library user education. *British journal of academic librarianship*, 2(1):37-43.

Campbell, B. 1990. What is literacy? Acquiring and using literacy skills. *Australian public libraries and information services*, 3(3):149-152.

Campbell, V. C. 1984. *Toward a grounded theory of family strength in high quality stability marriage*. Ph.D. thesis, Michigan State University.

Carlson, D. & Miller, R. H. 1984. Librarians and teaching faculty: partners in bibliographic instruction. *College and research libraries*, 45(6):483-491.

Carter, C. J. & Monaco, J. 1987. *Learning information technology skills*. London: British Library. (Library and information research report; no. 54.)

Charmaz, K. 1990. "Discovering" chronic illness: using grounded theory. *Social science and medicine*, 30(11):1161-1172.

Chenitz, W. C. & Swanson, J. M. 1986. *From practice to grounded theory: qualitative research in nursing*. Menlo Park, Calif.: Addison-Wesley.

Christie, C. 1991. Sociology and "Unisa in action". *Progressio*, 13(2):16-24.

Cleaver, B. P. 1987. Thinking about information: skills for lifelong learning. *School library media quarterly*, 16(Fall):29-31.

Clifford, G. J. 1984. Buch und Lesen: historical perspec-

tives on literacy and schooling. *Review of educational research*, 54(4):472-500.

Collins, B. L., Mellon, C. A. & Young, S. B. 1987. The needs and feelings of beginning researchers, in *Bibliographic instruction: the second generation*, edited by C. A. Mellon. Littleton, Colo.: Libraries Unlimited:73-84.

Conrad, C. F. 1978. A grounded theory of academic change. *Sociology of education*, 51(2):101-112.

Coughlan, J. 1989. The BI librarian's new constituency: adult independent learners. *Reference librarian*, (24):159-173.

Cowley, J. 1988. *A survey of information skills teaching in U.K. higher education*. London: British Library Research and Development Department. (British Library research paper; no. 47.)

Cowley, J. 1990. *Post-induction information skills teaching in U.K. higher education: six studies*. London: British Library Research and Development Department. (British Library research paper; no. 76.)

Cowley, J. 1992. Personal interview. 8 May, London.

Cowley, J. & Hammond, N. 1987. *Educating information users in universities, polytechnics and colleges*. London: British Library. (British Library research review; no. 12.)

Craig, A. P. 1989. The conflict between the familiar and the unfamiliar. *South African journal of higher education*, 3(1):166-172.

Craig, R. 1982. Information skills and curriculum development. *Library review*, 31:187-188.

- Crocker, C. 1991. Off-campus library services in Australia. *Library trends*, 39(4):495-513.
- Crouse, C. F. 1980. *Deurgangskursusse: senaatsbesluit en praktiese implikasies*. Ongepubliseerde verslag aan die Akademiese Advieskomitee, Universiteit van Suid-Afrika.
- Curran, C. 1990. Information literacy and the public librarian. *Public libraries*, 29(6):349-353.
- Davies, B. & Murdoch, A. 1991a. Tutor librarians: creating a climate for change. *Assistant librarian*, 84(2):21-23.
- Davies, B. & Murdoch, A. 1991b. Tutor librarians: creating a climate for change. *Education libraries journal*, 34(1):9-14.
- Davinson, D. E. 1981. The future of the reference librarian ... or if you have sacred cows, prepare to shed them now. *Reference librarian*, (1/2):39-43.
- Demo, W. 1986. *The idea of "Information literacy" in the age of high-tech*. New York: Tompkins Cortland Community College. (ED 282537.)
- Dennis, N. 1990. New technologies for information retrieval: a three-credit course for undergraduates at Salem State College. *Reference services review*, 18(1):39-48.
- De Villiers, A. B. 1990. An evaluation of meta-learning in a first-year student development programme. *South African journal of higher education*, 4(2):38-43.
- Devinney, G. 1990. The BI FIG: cultivating teaching success. *RQ*, 30(2):189-192.
- Dewey, M. 1876. The profession. *American library journal*,

September:5-6.

- Diehl, S. J. & Weech, T. L. 1991a. Library use instruction in the public library: a survey of user preferences. *Research strategies*, 9(1):25-40.
- Diehl, S. & Weech, T. L. 1991b. Library use instruction research and the public library. *Public libraries*, 30(1):33-42.
- Dimitroff, A., Blouis, F. X., Frost, C. O., MacAdam, B. & Stoffle, C. J. 1990. Alliance for information: Michigan librarians and library faculty join forces for the future. *Research strategies*, 8(2):52-58.
- Doran, W. J. 1980. *The meaning of belonging to experimental parishes: an exploration in grounded theory*. Ph.D. thesis (Education), University of Michigan.
- Dubber, G. 1989. Teachers and librarians - working together with resource based learning: the challenges and the difficulties. *Public library journal*, 4(5):111-116.
- Editorial: The fourth irony. 1989. *Research strategies*, 7(4):146-147.
- Eisenberg, M. B. & Berkowitz, R. E. 1990. *Information problem-solving: the Big Six Skills approach to library and information skills instruction*. Norwood, NJ: Ablex Publishing Corporation.
- Eisenberg, M. B. & Berkowitz, R. E. 1992. Information problem-solving: the Big Six Skills approach. *School library media activities monthly*, 8(5):27-29; 37; 42.
- Engelbrecht, S. W. B. 1982. *Profiel van 1981-deurgang-studente*. Ongepubliseerde verslag van die Buro vir Universiteitsonderrig, Universiteit van Suid-Afrika.

- Euster, J. R. 1987. Technology and instruction, in *Bibliographic instruction: the second generation*, edited by C. A. Mellon. Littleton, Colo.: Libraries Unlimited:53-59.
- Fatzer, J. B. 1987. Library literacy. *RQ*, 26(3):313-314.
- Fielding, N. G. & Fielding, J. L. 1986. *Linking data*. Beverly Hills: Sage.
- Fielding, N. G. & Lee, R. M. (eds) 1991. *Using computers in qualitative research*. London: Sage.
- Fink, D. 1989. *Process and politics in library research: a model for course design*. Chicago: American Library Association.
- Fitzsimmons, J. J. 1987. The information millennium. *Information society*, 5(1):51-55.
- Fjällbrant, N. 1990. Why user education and how can information technology help? *IFLA journal*, 16(4):405-413.
- Fleming, H. 1986. User education in academic libraries in the United Kingdom. *British journal of academic librarianship*, 1(1):18-40.
- Fleming, H. 1990. Introduction, in *User education in academic libraries*, edited by H. Fleming. London: Library Association:ix-xx.
- Flynn, L. L. 1989. Developing critical reading skills through cooperative problem solving. *Reading teacher*, 42(9):664-668.
- Ford, B. J. 1991a. ACRL's past year in perspective. *College and research libraries news*, 52(1):4-6.
- Ford, B. J. 1991b. Information literacy (guest editorial).

College and research libraries, 52(4):313-314.

Ford, B. J. 1991c. Message from the President (Association of College and Research Libraries 1990-91 annual report). *College and research libraries news*, 52(10):659-660.

Ford, N. 1979. Cognitive psychology and "library learning". *Journal of librarianship*, 11(1):25-38.

Ford, N. 1990. Learning styles, strategies and stages, in *User education in academic libraries*, edited by H. Fleming. London: Library Association:29-42.

Fouché, B. 1985. Verslag oor die Werkgroep vir Inligtingbewusmaking, in *Informasie en samelewing*; referate van 'n konferensie van die Nasionale Adviesraad vir Biblioteek- en Inligtingwese, 13-14 Mei:58-60.

Garbers, J. G. 1985. Samevatting van slotoorsig en beskouing oor die benutting van inligting, in *Informasie en samelewing*; referate van 'n konferensie van die Nasionale Adviesraad vir Biblioteek- en Inligtingwese, 13-14 Mei:196-201.

Garfield, E. 1979. 2001: an information society? *Journal of information science*, 1:209-215.

Gash, S. & Reardon, D. F. 1988. Personal transferable skills for the modern information professional: a discussion paper. *Journal of information science*, 14:285-292.

Gawith, G. 1986. A future information generation: the role of the school library. *New Zealand libraries*, 45(3):49-53.

Genot, J-P. 1987. The Unisa Beltel project, in *Distance Education Conference, Pretoria, 18-27 May 1987. Papers*

3.1: *Media and technology in distance education.*
Pretoria: University of South Africa:162-170.

Glaser, B. 1978. *Theoretical sensitivity.* Mill Valley, CA:
Sociology Press.

Glaser, B. G. & Strauss, A. L. 1967. *The discovery of
grounded theory: strategies for qualitative research.*
New York: Aldine.

Gous, H. 1984. *Deurgangstudente 1983.* Ongepubliseerde
verslag aan die Akademiese Advieskomitee, Universiteit
van Suid-Afrika.

Gous, H. 1987. A student services unit in a distance educa-
tion institution, in *Distance Education Conference,
Pretoria, 18-27 May 1987. Papers 5: Administration and
student support in distance education.* Pretoria:
University of South Africa:21-34.

Gous, H. 1988. *Interimverslag, Radio Unisa. Voorgestelde
radioprogramme van die Studentediensburo vir uitsend-
ing gedurende 1989 deur Radio Unisa.* Ongepubliseerde
verslag aan die Akademiese Advieskomitee, Universiteit
van Suid-Afrika.

Gous, H. 1990. *Aktiwiteite van die Studentediensburo
gedurende 1989 tot en met 31 Mei 1990.* Ongepubliseerde
verslag aan die Akademiese Advieskomitee, Universiteit
van Suid-Afrika.

Gous, H. 1992a. *Designing orientation and academic skills
programmes for distance education freshmen.* Paper
presented at the 11th Annual FYE Conference, February
21-25. Columbia.

Gous, H. 1992b. Opinion: Partners in a mission. *Progressio,*
14(1):8-11.

- Gratch, B. G. 1989. Five years after *A nation at risk*; an annotated bibliography. *Reference services review*, 17(4):29-48.
- Great Britain. Department of Education and Science. 1975. *A language for life. Report of the Committee of Inquiry appointed by the Secretary of State for Education and Science under the Chairmanship of Sir Alan Bullock*. London: HMSO.
- Great Britain. Schools Council. 1981. *The practical curriculum: a report from the Schools Council*. London: Methuen Educational. (Schools Council working paper; no. 70.)
- Greer, A., Weston, L. & Alm, M. 1991. Assessment of learning outcomes: a measure of progress in library literacy. *College and research libraries*, 52(6):549-557.
- Grimison, C. 1986. The external students' perception of formal reader education programs, in *Library services in distance education. Proceedings of a National Seminar held by the S.A. College of Advanced Education Library and the University and College Libraries Section (S.A.) of the Library Association of Australia, Adelaide University, August 1985*, edited by J. Gray. Adelaide: South Australian College of Advanced Education Library:75-85.
- Grimison, C. 1988. Reader education for external students. *Australasian college libraries*, 6(2/3):43-49.
- Hall, N. 1986. *Teachers, information and school libraries*. Paris: Unesco, General Information Programme and UNISIST. (PGI-86/WS/17.)
- Hamelink, C. 1976. An alternative to news. *Journal of communication*, 26(4):120-124.

- Hanson, J. R. 1985. Teaching information sources in business studies: an application of the theories of J. Bruner and R. M. Gagnè. *Journal of librarianship*, 17(3):185-199.
- Hardesty, L. 1982. *The development of a set of scales to measure the attitudes of classroom instructors toward the undergraduate educational role of the academic library*. Doctoral dissertation, Indiana University, Bloomington, Ind.
- Hardesty, L. 1991. *Faculty and the library: the undergraduate experience*. Norwood, NJ: Ablex Publishing Corporation.
- Harley, G. S. 1990. *Verslag van die vergaderings van die Komitee oor Deurgangskursusse, 1990-06-29, 1990-07-05*. Ongepubliseerde verslag aan die Akademiese Advieskomitee, Universiteit van Suid-Afrika.
- Harley, G. S. 1992. Personal interview. 30 October, Pretoria.
- Harris, K. & Southey, N. 1989. Tutorial letter 102/1989: guidelines for writing assignments. *Progressio*, 11(1):140-169.
- Harrison, C. 1990. User education in further and higher education compared and contrasted, in *User education in academic libraries*, edited by H. Fleming. London: Library Association:43-54.
- Hartman, N. 1989. Syndicate based peer group learning: an alternative process. *South African journal of higher education*, 3(1):98-106.
- Hartsuijker, A. P. 1986. Curriculum development of computer and information literacy in the Netherlands. *Education and computing*, 2:89-93.

- Haworth, E. 1982a. Expectations of teaching staff concerning library use by external students. *Australian academic and research libraries*, 13(3):153.
- Haworth, D. E. 1982b. Library services to the off-campus and independent learner: a review of the literature. *Journal of librarianship*, 14(3):157-175.
- Haws, R., Peterson, L. & Shonrock, D. 1989. Survey of faculty attitudes towards a basic library skills course. *College and research libraries news*, 50(3):201-203.
- Haycock, C-A. 1985. Information skills in the curriculum: developing a school-based continuum. *Emergency librarian*, 13(1):11-17.
- Heeks, P. 1989. *Perspectives on a partnership: information skills and school libraries 1983-1988*. London: British Library. (British Library research reviews; no. 13.)
- Heeks, P. & Kinnell, M. 1992. *Managing change for School Library Services: the final report of the Supports to Learning Project*. London: British Library Research and Development Department. (Library and information reports; no. 89.)
- Hillerich, R. L. 1976. Toward an assessable definition of literacy. *English journal*, 65(Feb.):50-55.
- Hilton, A. 1984. A new note: a fresh approach to user education. *Education libraries bulletin*, 27(3):1-11.
- Hofmeyr, J. & Spence, R. 1989. Bridges to the future. *Optima*, 37(1):37-48.
- Hopkins, D. (ed.). 1987. *Knowledge, information skills and the curriculum*. London: British Library. (Library and

information research report; no. 46.)

Hopkins, F. L. 1981. User instruction in the college library: origins, prospects, and a practical program, in *College librarianship*, edited by W. Miller & D. S. Rockwood. Methuchen, NJ: Scarecrow Press:173-204.

Hopkins, F. L. 1982. A century of bibliographic instruction: the historical claim to professional and academic legitimacy. *College and research libraries*, 43(3):192-198.

Horton, F. W. 1983. Information literacy vs. computer literacy. *Bulletin of the American Society for Information Science*, 9(4):14-16.

Horton, F. W. & Willard, R. (eds). 1982. *Understanding US information policy: the infostructure handbook*. Vols. 1-4. Washington, DC: Information Industry Association.

Hounsell, D. & Martin, E. 1983. *Developing information skills in secondary schools: a dissemination project*. London: British Library. (Library and information research report; no. 9.)

Howard, J. 1991. *Information skills and the secondary curriculum: some practical approaches*. London: British Library Research and Development Department. (Library and information reports; no. 84.)

Howard, S. 1985. Libraries in distance education. *Canadian journal of university continuing education*, 11(1):45-58.

Hughes, C. S. 1986. Teaching strategies for developing student thinking. *School library media quarterly*, 15(Fall):33-36.

Hunter, P. 1989. The transforming of learning: the evolution

of an academic support program. *South African journal of higher education*, 3(2):68-78.

Hunter, P. 1991. Academic support or mainstream change? *South African journal of higher education*, 5(2):5-6.

Hutchings, M. 1990. Hypertext for library orientation, in *User education in academic libraries*, edited by H. Fleming. London: Library Association:93-120.

Information Science training in the new SA. 1992. *SAILIS newsletter*, 12(2):11.

Inglis, M. 1991. Science foundation programme: dovetailing learning tasks to facilitate transfer. *Innovation*, 2(June):19-21.

Intner, S. S. 1990. The public and bibliographic instruction: missed opportunities in creating a positive information environment. *Reference librarian*, (31):15-30.

Irving, A. 1983. *Educating information users in schools*. London: British Library. (British Library research review; no. 4.)

Irving, A. 1985. *Study and information skills across the curriculum*. London: Heinemann.

Irving, A. & Snape, W. H. 1979. *Educating library users in secondary schools*. London: British Library. (Research and development report; no. 5467.)

Jackson, W. V. 1954. The interpretation of public services. *Library trends*, 3(2):188-201.

Jackson, Z. 1990. Assessment of an academic support programme in Theory of Literature. *Progressio*, 12(1):96-104.

- Jacobson, T. E. & Vallely, J. R. 1992. A half-built bridge: the unfinished work of bibliographic instruction. *Journal of academic librarianship*, 17(6):359-363.
- Jakobovits, L. A. & Nahl-Jakobovits, D. 1987. Learning the library: taxonomy of skills and errors. *College and research libraries*, 48(3):203-214.
- Johns, E. & Fraser, D. M. 1974. Social studies skills: a guide to analysis and grade placement, in *The school library media center: a force for educational excellence*. 2nd edition, edited by R. A. Davies. New York: Bowker. Appendix L:419-439. (Reprinted from *Skill development in social studies*. 1963. Edited by H. M. Carpenter. Washington, DC: National Council for the Social Studies. 33rd yearbook.)
- Kawatra, P. S. 1983. 2001: an information society. *Herald of library science*, 22(1/2):62-65.
- Keenan, L. M. 1989. Andragogy off-campus: the library's role. *Reference librarian*, (24):147-158.
- Kemp, B. E. & Nofsinger, M. M. 1988. Library/research skills for college-bound students: articulation in Washington State. *Journal of academic librarianship*, 14(2):78-79.
- Kennedy, M. E. 1984. Bibliographic instruction in the academic library: looking at the adult student. *Reference librarian*, (10):205-213.
- Kenney, D. J. 1983. Where there is no vision. *Journal of academic librarianship*, 9(1):7-8.
- King, E. 1989. *The school library: responding to change*. Plymouth: Northcote House.
- Kinnell, M. & Pain-Lewins, H. (eds). 1988. *School libraries*

and curriculum initiatives. London: Taylor Graham.

Kirk, J. 1987. Information skills in schools. *Australian library journal*, 36(2):82-87.

Kirkendall, C. A. 1980. Library use education: current practices and trends. *Library trends*, 29(Summer):29-37.

Knapp, P. B. 1958. College teaching and the library. *Illinois libraries*, 40(Dec.):828-833.

Knapp, P. B. 1961. The Monteith library project. *College and research libraries*, 22(4):256-263; 284.

Knapp, P. B. 1966. *The Monteith College library experiment*. New York: Scarecrow.

Krathwohl, D. R., Bloom, B. S. & Masia, B. B. 1964. *Taxonomy of educational objectives: the classification of educational goals. Handbook II: affective domain*. New York: David McKay.

Kuhlthau, C. C. 1987a. An emerging theory of library instruction. *School library media quarterly*, 16(Fall):23-28.

Kuhlthau, C. C. 1987b. *Information skills for an information society: a review of research*. Syracuse, NY: ERIC Clearinghouse on Information Resources. (ED 297740.) [Reprinted (1990) in *Information reports and bibliographies*, 19(3):14-26.]

Kuhlthau, C. C. 1987c. Information skills: tools for learning: an introduction. *School library media quarterly*, 16(Fall):22.

Kuhlthau, C. C. 1988. Developing a model of the library search process: cognitive and affective aspects. *RQ*, 28(2):232-242.

- Kuhlthau, C. C. 1989. Information search process: a summary of research and implications for school library media programs. *School library media quarterly*, 18(Fall):19-25.
- Kuhlthau, C. C. 1991. Inside the search process: information seeking from the user's perspective. *Journal of the American Society for Information Science*, 42(5):361-371.
- Kumar, G. & Kumar, K. 1983. *Philosophy of user education*. New Delhi: Vikas.
- Kwasnik, B. H. 1990. Information literacy: concepts of literacy in a computer age, in *Information literacies for the twenty-first century*, edited by V. L. P. Blake & R. Tjoumas. Boston: G. K. Hall:127-143.
- LaBorie, T. & Halperin, M. 1976. Citation patterns in library science dissertations. *Journal of education for librarianship*, 12:71-83.
- Laburn, C. 1984. User guidance and training. *South African journal of library and information science*, 52(3):93-98.
- A language for life. Report of the Committee of Inquiry appointed by the Secretary of State for Education and Science under the Chairmanship of Sir Alan Bullock.* 1975. London: HMSO.
- Latham, S., Slade, A. L. & Budnick, C. 1991. *Library services for off-campus and distance education: an annotated bibliography*. Ottawa: Canadian Librarian Association.
- Lawson, V. L. 1990. A cost comparison between general library tours and computer-assisted instruction

- programs. *Research strategies*, 8(2):66-73.
- Leedy, P. D. 1989. *Practical research: planning and design*. 4th edition. New York: Macmillan.
- Le Roux, S. 1992. School media centres in a new South Africa. *Mousaion*, 10(2):37-51.
- Lewis, D. 1991. Information skills across the curriculum: a whole school approach. *Access*, 5(3):24-25.
- Library Association. 1991. *National Curriculum and learning skills*. London.
- Liesener, J. W. 1985. Learning at risk: school library media programs in an information world. *School library media quarterly*, 14(1):11-20.
- Line, M. B. 1990. Libraries in the educational process. *Library Association record*, 92(7):504-506.
- Lofland, J. & Lofland, L. H. 1984. *Analyzing social settings: a guide to qualitative observation and analysis*. 2nd edition. Belmont, Calif.: Wadsworth.
- Lowrie, J. E. 1970. *Elementary school libraries*. 2nd edition. Metuchen, NJ: Scarecrow Press.
- Lowry, A. K. 1990. Beyond BI: information literacy in the electronic age. *Research strategies*, 8(1):22-27.
- Lubans, J. 1980. Let George do it. *RQ*, 20(2):121-123.
- Lukenbill, W. B. 1989. Information literacy: using the process approach in bibliographic instruction. *International review of children's literature and librarianship*, 4(3):167-180.
- Lutzker, M. 1990. Bibliographic instruction and accredita-

tion in higher education. *College and research libraries news*, 51(1):14-18.

MacAdam, B. 1990. Information literacy: models for the curriculum. *College and research libraries news*, 51(10):948-951.

MacAdam, B. & Kemp, B. 1989. Bibliographic instruction and critical inquiry in the undergraduate curriculum. *Reference librarian*, (24):233-244.

MacColl, P. 1980. Skill development. *Journal of the School Library Association of Queensland*, 12(3/4):12-16.

Machet, M. P. & Lor, P. J. 1989. Language, conceptual, and cultural deficiencies: a view from the Department of Library and Information Science. *Progressio*, 11(2):139-145.

Madland, D. & Smith, M. A. 1988. Computer-assisted instruction for teaching conceptual library skills to remedial students. *Research strategies*, 6(2):52-64.

Makhubela, P. L. 1986. *User education in a South African black university: the case at University of Zululand*. M.Phil. thesis, University of Wales, Aberysthwyth.

Malan, S. P. T. 1989. Eise van die opkomende inligtingsamelewing: imperatiewe vir universiteitsopleiding. *Suid-Afrikaanse tydskrif vir biblioteek- en inligtingkunde*, 57(1):76-82.

Malley, I. 1984a. *The basics of information skills teaching*. London: Bingley.

Malley, I. 1984b. *Information skills: an introductory information pack for schoolteachers*. London: British Library.

- Malley, I. 1984c. *Teaching information skills in universities: an annotated bibliography*. Loughborough: Infuse Publications.
- Malley, I. 1988a. *Educating information users in colleges of further and higher education*. London: British Library. (British Library research review; no. 11.)
- Malley, I. 1988b. *A survey of information skills teaching in colleges of further and higher education*. London: British Library Research and Development Department. (British Library research paper; no. 10.)
- Maloney, Y. 1989. Bibliographic instruction for foreign-language classes: a pilot project. *Research strategies*, 7(2):61-66.
- Marais, J. J. 1991a. *The evolution of information literacy in schools*. Paper presented at South African Institute for Librarianship and Information Science conference, 28 August. Pretoria.
- Marais, J. J. 1991b. *Inligtinggeletterdheid vir 'n "nuwe Suid-Afrika" - 'n interkulturele perspektief*. Referaat gelewer by Suid-Afrikaanse Instituut vir Biblioteek- en Inligtingwese konferensie, 27 Augustus. Pretoria.
- Maranda, S. 1989. Developing the role of the end-user librarian. *Bibliotheca medica Canadiana*, 10(3):126-129.
- Markless, S., Streatfield, D. & Baker, L. 1992. *Cultivating information skills in further education: eleven case studies*. London: British Library Research and Development Department. (Library and information reports; no. 86.)
- Marland, M. (ed.). 1981. *Information skills in the secondary*

curriculum: the recommendations of a working group sponsored by the British Library and the Schools Council. London: Methuen Educational. (Schools Council curriculum bulletin; no. 9.)

Martell, C. & Ware, J. D. 1988. Hard facts, hard work: academic libraries and *A nation at risk* - a symposium. *Journal of academic librarianship*, 14(2):72-81.

Martin, P. Y. & Turner, B. A. 1986. Grounded theory and organizational research. *Journal of applied behavioral science*, 22(2):141-17.

Martin, W. J. 1988. *The information society*. London: Aslib.

Masson, D. R. 1970. The research worker and his library in South Africa. *South African journal of science*, 66:259-63.

Masuda, Y. 1982. The information civilization: the challenging upward trail for humanity, in *Communication and the future*, edited by H. F. Didsbury. Bethesda: World Future Society:69-73.

Maurice, P. 1992. Writing's on the wall for the class debate. *Weekly Mail*, (Review education supplement), September:6.

May, K. A. 1986. Writing and evaluating the grounded theory research report, in *From practice to grounded theory: qualitative research in nursing*, edited by W. C. Chenitz & J. M. Swanson. Menlo Park, Calif.: Addison-Wesley:146-154.

Maynard, J. E. 1990. A case study of faculty attitudes toward library instruction: The Citadel experience. *Reference services review*, 18(2):67-76.

McCarthy, C. 1985. The faculty problem. *Journal of academic*

librarianship, 11(3):142-145.

McCrank, L. J. 1991. Information literacy: a bogus bandwagon? *Library journal*, 116(8):38-42.

McCrank, L. J. 1992. Academic programs for information literacy: theory and structure. *RQ*, 31(4):485-497.

McDowell, L. & Tomlinson, E. 1989. Student evaluation of a user education course. *Information and library manager*, 8(4): 8-11.

McGillivray, G. [1990]. *Information storage and retrieval: a report and recommendations based on information gathered during an overseas trip and at Unisa*. Unpublished document submitted to Academic Advisory Committee, University of South Africa.

McInnes, R. G. 1978. *New perspectives for reference service in academic libraries*. Westport, Conn.: Greenwood.

McNeer, E. J. 1991. Learning theories and library instruction. *Journal of academic librarianship*, 17(5):294-297.

Mehl, M. C. 1988. Academic support: developmental giant or academic pauper? *South African journal of higher education*, 2(1):17-20.

Meijer, J. G., Burger, J. F., du Preez, M. & Haag, D. E. 1988. *Kurrikuleringbeplanning vir Biblioteek- en Inligtingkunde in Suid-Afrika*. Pretoria: Raad vir Geesteswetenskaplike Navorsing. (Verslag BIN-2.)

Mellon, C. A. 1986. Library anxiety: a grounded theory and its development. *College and research libraries*, 47(2):160-165.

Mellon, C. A. (ed.). 1987. *Bibliographic instruction: the*

second generation. Littleton, Colorado: Libraries Unlimited.

Mellon, C. A. 1988. Attitudes: the forgotten dimension in library instruction. *Library journal*, 113(14):137-139.

Mensching, G. E. & Mensching, T. B. (eds). 1989. *Coping with information illiteracy: bibliographic instruction for the information age; papers presented at the Seventeenth National LOEX Library Instruction Conference held in Ann Arbor, Michigan, 4 and 5 May 1989*. Ann Arbor, Mich.: Pierian Press.

Mensching, T. B. 1989. Trends in bibliographic instruction in the 1980's: a comparison of data from two surveys. *Research strategies*, 7(1):4-13.

Miles, M. B. & Huberman, A. M. 1984. *Qualitative data analysis: a sourcebook of new methods*. Newbury Park: Sage.

Miles, R. H. 1987. *Managing the corporate social environment: a grounded theory*. Englewood Cliffs: Prentice-Hall.

Mill, E. 1992. The RWS research project (1991). *Progressio*, 14(1):33-37.

Miller, C. 1982. Scientific literature as hierarchy: library instruction and Robert M. Gagné. *College and research libraries*, 43(5):385-390.

Model statement of objectives for academic bibliographic instruction: draft revision. 1987. *College and research libraries news*, 48(5):256-261.

Moletsane, R. I. M. 1992. Academic support for adult learners in tertiary institutions. *South African journal*

of higher education, 6(1):105-109.

- Morgan, S. 1990. Self-instruction techniques in user education: workbook lecture. *Education libraries journal*, 33(1):14-39.
- Morris, B. 1983. User education: time for a rethink? In *Third International Conference on Library User Education; proceedings*, edited by P. Fox and I. Malley. Loughborough: Infuse Publications:18-26.
- Morris, B. 1990. Integrated user education, in *User education in academic libraries*, edited by H. Fleming. London: Library Association:57-72.
- Morrison, M. & Markless, S. 1992. *Enhancing information skills in further education: some strategies for senior managers, lecturers and libraries*. London: British Library. (British Library research & development paper; no. 99.)
- Moulder, J. 1991. Remedial education programmes: miracle or failure? *South African journal of higher education*, 5(1):5-10.
- Mouton, J. & Marais, H. C. 1988. *Basic concepts in the methodology of the social sciences*. Pretoria: Human Sciences Research Council.
- Myers, G. 1991. Chemical information literacy programmes in tertiary education. *South African journal of library and information science*, 59(1):27-31.
- Nachmias, C. & Nachmias, D. 1987. *Research methods in the social sciences*. 3rd edition. New York: St. Martin's Press.
- Nahl-Jakobovits, D. & Jakobovits, L. A. 1985. Managing the affective micro-information environment. *Research*

strategies, 3(1):17-28.

Nahl-Jakobovits, D. & Jakobovits, L. A. 1990. Learning principles and the library environment. *Research strategies*, 8(2):71-81.

Naisbitt, J. 1984. *Megatrends: ten new directions transforming our lives*. London: Futura.

Naisbitt, J. & Aburdene, P. 1988. *Megatrends 2000: the next ten years ... major changes in your life and world*. William Morrow.

Naito, M. 1991. An information literacy curriculum: a proposal. *College and research libraries news*, 52(5):293-296.

National Council for Educational Technology. 1989. *Information skills and the National curriculum: a summary sheet*. Coventry: NCET. [Leaflet.]

NCET see National Council for Educational Technology.

Nisbet, J. & Shucksmith, J. 1986. *Learning strategies*. London: Routledge & Kegan Paul.

'n Nuwe model vir Unisa. [1992]. Ongepubliseerde verslag aan die Akademiese Advieskomitee, Universiteit van Suid-Afrika.

Ochoggia, R. E. 1990. Planning a library user education programme. *Information trends - news magazine*, 3(3):105-111.

O'Hanlon, N. 1987. Library skills, critical thinking, and the teacher-training curriculum. *College and research libraries*, 48(1):17-26.

Olsen, J. K. & Coons, B. 1989. Cornell University's informa-

tion literacy program, in *Coping with information illiteracy: bibliographic instruction for the information age; papers presented at the Seventeenth National LOEX Library Instruction Conference held in Ann Arbor, Michigan, 4 and 5 May 1989*, edited by G. E. Mensching & T. B. Mensching. Ann Arbor, Mich.: Pierian Press:7-20.

Owens, R. 1976. State government and libraries. *Library journal*, 101(1 Jan.):27

Peeters, C. 1991. Bibliografische instructie: achtergronden en didactische aanpak. *Bibliotheek- en Archiefgids*, 67(2):181-196.

Peritz, B. C. 1981. Citation characteristics in library science: some further results from a bibliometric survey. *Library research*, 3:47-65.

Perkins, D. N. & Salomon, G. 1988. Teaching for transfer. *Educational leadership*, 46(1):22-32.

Pienaar, M. 1990. Do college and technikon students need specialized courses in information use? Paper presented at *Education for optimum information use: symposium on strategies for the 1990's*. South African Institute for Librarianship and Information Science conference, 10 September 1990. Wild Coast Sun, Transkei.

Piette, M. I. & Smith, N. M. 1991. Hypermedia and library instruction: the challenge of design. *Reference services review*, 19(4):13-20.

Plomp, T. & Carleer, G. 1987. Towards a strategy for the introduction of information and computer literacy (ICL) courses. *Computers and education*, 11(1):53-62.

Polette, N. 1973. *Developing methods of inquiry*. Metuchen,

NJ: Scarecrow Press.

Prologue and major recommendations of Carnegie Foundation's report on colleges. 1986. *Chronicle of higher education*, 33(5 Nov.):10-11.

Prytherch, R. (comp.). 1987. *Harrod's librarians' glossary and reference book of terms used in librarianship, documentation and the book crafts*. 6th edition. Aldershot: Gower.

Pugh, H. E. 1970. Library instructional programmes for undergraduates: historical development and current practice. *Library world*, 71(837):267-273.

R5-m for children's AIDS education. 1991. *Pretoria News*, 10 July:2.

Rader, H. B. 1987. Library orientation and instruction - 1986. *Reference services review*, 15(2):65-76.

Rader, H. B. 1988. Library orientation and instruction - 1987. *Reference services review*, 16(3):57-68.

Rader, H. B. 1989. Library orientation and instruction - 1988. *Reference services review*, 17(4):73-86.

Rader, H. B. 1990a. Bibliographic instruction or information literacy. *College and research libraries news*, 51(1):18-20.

Rader, H. B. 1990b. Bringing information literacy into the academic curriculum. *College and research libraries news*, 51(9):879-880.

Rader, H. B. 1990c. Library orientation and instruction - 1989. *Reference services review*, 18(4):35-47.

Rader, H. B. 1991a. Information literacy: a revolution in

- the library. *RQ*, 31(1):25-29.
- Rader, H. B. 1991b. Library orientation and instruction - 1990. *Reference services review*, 19(4):71-84.
- Reed, E. E. 1974. Is library instruction in a muddle in the middle school? In *Educating the library user*, edited by J. Lubans. New York: Bowker:25-38.
- Reichel, M. 1990. Library literacy. *RQ*, 30(1):46.
- Reichel, M. & Ramey, M. A. (eds). 1987. *Conceptual frameworks for bibliographic education: theory into practice*. Littleton, Colo.: Libraries Unlimited.
- Renford, B. & Hendrickson, L. 1980. *Bibliographic instruction: a handbook*. New York: Neal-Schumann.
- Review Committee on Education for Information Use: final report*. 1977. London: British Library Research and Development Department. (British Library research & development report; no. 5325.)
- Reynolds, J. 1989. University approval of library research skills as part of the general education curriculum requirements. *Reference librarian*, (24):75-86.
- Rice, J. 1981. *Teaching library use: a guide for library instruction*. Westport, Conn.: Greenwood Press.
- Rice, J. O. 1987. Using interactive communications technology to extend bibliographic instruction to off-campus students, in *The Off-Campus Library Services Conference Proceedings: Reno, Nevada, October 23-24, 1986*, edited by B. M. Lessin. Mount Pleasant, Mich.: Central Michigan University Press:213-224.
- Ridgeway, T. 1990. Information literacy: an introductory reading list. *College and research libraries news*,

51(7):645-648.

Rogers, S. J. 1980. Research strategies: bibliographic instruction for undergraduates. *Library trends*, 29(Summer):69-81.

Rogers, S. J. 1987. Science of knowledge, in *Bibliographic instruction: the second generation*, edited by C. A. Mellon. Littleton, Colo.: Libraries Unlimited:125-133.

Ruddy, M. 1987. Serving learners at a distance: evaluation of library instruction by off-campus learners, in *The Off-Campus Library Services Conference Proceedings: Reno, Nevada, October 23-24, 1986*, edited by B. M. Lessin. Mount Pleasant, Mich.: Central Michigan University Press:225-238.

Salt, D. 1987. Transmitting library instruction via satellite. *Canadian library journal*, 44(3):155-157.

Sass, A. 1988. Academic support in engineering at the University of Cape Town. *South African journal of higher education*, 2(1):25-28.

Scholtz, P. 1991. Die implementering van 'n akademiese ondersteuningsprogram op vroeë geïdentifiseerde risikostudente. *Suid-Afrikaanse tydskrif vir hoër onderwys*, 5(1):30-37.

School libraries: the foundations of the curriculum. Report of the Library and Information Services Council's working party on school library services 1984. London: HMSO.

Schurink, E. 1988. The methodology of unstructured interviewing: Part I, in *Introduction to qualitative research; module 3*, edited by M. Ferreira et al. Pretoria: Human Sciences Research Council:136-159.

- Seidel, J. V., Kjolseth, R. & Seymour, E. 1988. *The Ethnograph: a user's guide (Version 3.0)*. Corvallis, OR: Qualis Research Associates.
- Shay, P. 1991. Productivity in the information society. *Wilson library bulletin*, 65(10):36-38.
- Shillinglaw, N. 1987. Supplying library materials to undergraduate students of a distance teaching university, in *Distance Education Conference, Pretoria, 18-27 May 1987. Papers 3.1: Media and technology in distance education*. Pretoria: University of South Africa:184-196.
- Shillinglaw, N. 1988. South Africa as an information society, in *The information society*, edited by N. Shillinglaw & W. Thomas. Craighall: Ad Donker:9-20.
- Shillinglaw, N. 1992. Personal interview. 28 September, Pretoria.
- Shirato, L. 1991. Dialogue and debate: using learning theory in BI. *Research strategies*, 9(1):48-50.
- Slade, A. L. 1991. Library support for off-campus and distance education programs in Canada: an overview. *Library trends*, 39(4):454-478.
- Smit, L. 1992. The IT-strategy project: dead or alive? *Unisa bulletin*, 17(8):5-6.
- Smith, D. J. 1989. An examination of higher education: a view from the college library. *Journal of academic librarianship*, 15(3):140-146.
- Sorensen, V. P. 1988. Bibliographic instruction in a developmental studies program: a paired course approach. *Research strategies*, 6(4):161-167.

- Squirrell, G. 1989. Libraries and reading - an absent motif in initial training? *Education libraries journal*, 32(3):17-24.
- Stachacz, J. C. & Brennan, T. M. 1990. Bibliographic instruction in an undergraduate biology course. *Research strategies*, 8(1):14-21.
- Stadler, C. 1992. The National Education Policy Investigation. *SAILIS newsletter*, 12(5):8-9.
- Staines, G. M. 1990. Articulation agreements for bibliographic instruction. *Community & junior college libraries*, 7(1):17-26.
- Stanton, M. 1987. An evaluation of a first-year half-course in Physics for bridging students at the University of the Witwatersrand. *South African journal of higher education*, 1(1):105-111.
- Starfield, S. 1990. Science and language: a new look at some old issues. *South African journal of higher education*, 4(2):84-89.
- Stevens, C. H. 1976. National Commission on Libraries and Information Science, in *Encyclopedia of Library and Information Science*, vol. 19, edited by A. Kent, H. Lancour, J. E. Daily, & W. Z. Nasri. New York: Dekker:64-84.
- Stevenson, M. B. 1976. *User education programmes: a study of their development, organization, methods and assessment*. London: British Library Research and Development Department. (British Library research & development report; no. 5320.)
- Stilwell, C. 1989. Community libraries: a brief review of their origins and nature with particular reference to South Africa. *Journal of librarianship*, 21(4):260-269.

- Stoan, S. K. 1984. Research and library skills: an analysis and interpretation. *College and research libraries*, 45(2):99-109.
- Strauss, A. & Corbin, J. 1990. *Basics of qualitative research: grounded theory procedures and techniques*. Newbury Park: Sage.
- Strauss, A. L. 1987. *Qualitative analysis for social scientists*. Cambridge: Cambridge University Press.
- Surprenant, T. T. 1982. Learning theory, lecture and programmed instruction text: an experiment in bibliographic instruction. *College and research libraries*, 43(1):31-37.
- Suttie, M-L. 1990. Libraries and academic support strategies in South African universities. *South African journal of library and information science*, 58(1):98-107.
- Swanson, J. M. 1986. The formal qualitative interview for grounded theory, in *From practice to grounded theory: qualitative research in nursing*, edited by W. C. Chenitz and J. M. Swanson. Menlo Park, Calif.: Addison Wesley:66-78.
- Swisher, R. & McClure, C. R. 1984. *Research for decision making: methods for librarians*. Chicago: American Library Association.
- Tabberer, R. & Allman, J. 1983. *Introducing study skills: an appraisal of initiatives at 16+*. Windsor: NFER-Nelson.
- Taylor, R. S. 1979. Reminiscing about the future. *Library journal*, 104(15 September):1871-75.
- Thomas, J. 1984. The university faculty and library instruc-

tion. *RQ*, 23(4):431-437.

Toffler, A. 1970. *Future shock*. London: Bodley Head.

Toffler, A. 1980. *The third wave*. Collins.

Toffler, A. 1990. *Powershift: knowledge, wealth and violence at the edge of the twenty-first century*. New York: Bantam.

Troutman, J. E. 1987. Foundations for Ministry: a partnership between students, faculty, and librarians in theological research. *The Georgia librarian*, 24(Feb.):14-17.

Tuckett, H. W. 1989. Computer literacy, information literacy, and the role of the instruction librarian, in *Coping with information illiteracy: bibliographic instruction for the information age; papers presented at the seventeenth National LOEX Library Instruction Conference held in Ann Arbor, Michigan, 4 and 5 May 1989*, edited by G. E. Mensching and T. B. Mensching. Ann Arbor, Mich.: Pierian Press:21-32.

Tuckett, H. W. & Stoffle, C. J. 1984. Learning theory and the self-reliant library user. *RQ*, 24(1):58-66.

Tyler, J. K. & Switzer, J. H. 1991. Meeting the information needs of nursing students: a library instruction module for a nursing research class. *Medical reference services quarterly*, 10(3):39-44.

Unisa see University of South Africa; alternatively, see Universiteit van Suid-Afrika.

Unisa. UELO see University of South Africa. Department of Library Services. User Education and Library Orientation Division.

- United States of America. Department of Education. 1984a. *Alliance for excellence: librarians respond to A nation at risk*. Washington, DC: GPO.
- United States of America. Department of Education. 1984b. *The nation responds: recent efforts to improve education*. Washington, DC: GPO.
- United States of America. National Commission on Excellence in Education. 1983. *A nation at risk: the imperative for educational reform. A report to the Nation and the Secretary of Education*. Washington, DC: The Commission.
- Universiteit van Suid-Afrika. Buro vir Bestuursinligting. 1987. *Prestasie van biblioteekgebruikers in 1986*. Pretoria. (Buro vir Bestuursinligting Verslag; no. 183.)
- Universiteit van Suid-Afrika. Buro vir Bestuursinligting. [1992] *Profiel van ingeskrewe 1992 studente vir voorgraads*. Pretoria.
- University of South Africa. 1984. *Policy on formal teaching*. Pretoria. (Published working document, approved by Senex 13 March 1984 and Senate 28 August 1984.)
- University of South Africa. [1990]. *Aims of the University of South Africa*. Pretoria. (Published working document, approved by Senate on 9 November 1990.)
- University of South Africa. 1990. *Calendar 1990. Part 2: Faculty of Arts*. Pretoria.
- University of South Africa. 1992a. *Policy regarding first tutorial letters (101), with special reference to prescribed, recommended and additional reading matter*. Pretoria.

University of South Africa. 1992b. *Services and procedures*. Pretoria.

University of South Africa. Bureau for Management Information. 1988. *Investigation of achievement of students who received library orientation assistance during 1987*. Pretoria. (Bureau for Management Information Report; no. 236.)

University of South Africa. Department of English. 1990. *Practical English: study guide 1 for PEN100-3, PEB100-E (Workbook 1)*. Pretoria.

University of South Africa. Department of Library Services. 1992a. *Guide to Unisa library 1992/93*. Pretoria.

University of South Africa. Department of Library Services. 1992b. *Library services and regulations for staff 1992*. Pretoria.

University of South Africa. Department of Library Services. 1992c. *Library skills: workbook 1*. Pretoria.

University of South Africa. Department of Library Services. 1992d. *Library skills: workbook 2*. Pretoria.

University of South Africa. Department of Library Services. User Education and Library Orientation Division. 1987. *User Education and Library Orientation: annual report 1986*. Pretoria. (Unpublished document dated 4 February 1987.)

University of South Africa. Department of Library Services. User Education and Library Orientation Division. 1988. *User Education and Library Orientation: annual report 1987*. Pretoria. (Unpublished document dated 2 February 1988.)

University of South Africa. Department of Library Services.

User Education and Library Orientation Division.
1989a. *Measurement of objectives of User Education and Library Orientation*; internal memo with annexure, from S. Williams to J. Willemse. Pretoria. (Unpublished document dated 30 October 1989.)

University of South Africa. Department of Library Services.
User Education and Library Orientation Division.
1989b. *Motivation for the introduction of formal library user education for Unisa students*. Pretoria. (Unpublished document dated 12 July 1989.)

University of South Africa. Department of Library Services.
User Education and Library Orientation Division.
1989c. *Proposal to introduce the teaching of library skills and bibliographic instruction to Unisa students*. Pretoria. (Unpublished document dated 14 April 1989; includes *Proposed framework for the implementation of a curriculum for the teaching of library skills and bibliographic instruction to Unisa students* dated 13 April 1989, and *Proposed curriculum for teaching library skills and bibliographic instruction to Unisa students* [undated].)

University of South Africa. Department of Library Services.
User Education and Library Orientation Division.
1989d. *Third revised motivation for the introduction of formal library user education for Unisa students*. Pretoria. (Unpublished document dated 7 September 1989.)

University of South Africa. Department of Library Services.
User Education and Library Orientation Division.
1989e. *User Education and Library Orientation: annual report 1988*. Pretoria: Unisa, Department of Library Services. (Unpublished document dated 14.2.89.)

University of South Africa. Department of Library Services.
User Education and Library Orientation Division.

1990a. *Annual report on User Education and Library Orientation 1989*. Pretoria. (Unpublished document dated 5 February 1990.)

University of South Africa. Department of Library Services. User Education and Library Orientation Division. 1990b. *The teaching of information skills to Unisa students*. Pretoria. (Unpublished document dated 20 March 1990.)

University of South Africa. Department of Library Services. User Education and Library Orientation Division. 1991. *Annual report on User Education and Library Orientation 1990*. Pretoria. (Unpublished document dated 30 January 1991.)

University of South Africa. Department of Library Services. User Education and Library Orientation Division. 1992. *Annual report on User Education and Library Orientation 1991*. Pretoria. (Unpublished document dated 7 February 1992.)

USA see United States of America.

Van As, B. S. 1985. *Verslag van die komitee insake deurgangstudie in 1983*. Ongepubliseerde verslag aan die Akademiese Advieskomitee, Universiteit van Suid-Afrika.

Van Brakel, P. A. 1975. *Biblioteekoriëntering en -onderrig aan universiteitstudente: 'n kritiese evaluering van die huidige situasies in enkele lande, met spesiale verwysing na die Republiek van Suid-Afrika*. M.Bibl. tesis, Universiteit van die Oranje-Vrystaat, Bloemfontein.

Van Brakel, P. A. 1979. *Biblioteekgebruikersopleiding aan universiteitstudente: ontwerp van 'n onderrigprogram*. D.Phil. tesis, Universiteit van Pretoria, Pretoria.

- Van Brakel, P. A. 1990. Utilizing information technology for effective user education. Paper presented at *Education for optimum information use: symposium on strategies for the 1990's*. South African Institute for Librarianship and Information Science conference, 10 September 1990. Wild Coast Sun, Transkei.
- Van der Merwe, D. 1990. Thoughts on study skills in computational sciences. *Unisa news*, 17(3):11.
- Van der Merwe, D. 1992. In retrospect: the Student Services Bureau's reading, writing and study skills course (1990). *Progressio*, 14(1):28-32.
- Van der Walt, M. S. 1992. Onderrig van inligtingsvaardighede aan universiteitstudiante. *Suid-Afrikaanse tydskrif vir biblioteek- en inligtingkunde*, 60(1):39-46.
- Van Schoor, W. A. [1989]. *Effective study: guidelines for students*. Pretoria: University of South Africa, Student Services Bureau.
- Van Weering, B. & Plomp, T. 1991. Information literacy in secondary education in the Netherlands: the new curriculum. *Computers and education*, 16(1):17-21.
- Vietzen, C. 1990. *Providing university students with improved information handling skills*. Paper presented at Education for Optimum Information Use: Symposium on Strategies for the 1990's, 10 September; South African Institute for Librarianship and Information Science conference. Wild Coast Sun, Transkei.
- Werrell, E. L. & Wesley, T. L. 1990. Promoting information literacy through a faculty workshop. *Research strategies*, 8(4):172-180.
- Wheeler, H. R. 1988. *The bibliographic instruction-course*

handbook: a skills and concepts approach to the undergraduate, research methodology, credit course - for college and university personnel. Metuchen: Scarecrow.

Willemse, J. 1991. University library service dedicated to distance teaching: the University of South Africa experience. *Library trends*, 39(4):514-534.

Williams, S. 1986. User education in the Unisa library. *Progressio*, 8(2):6-18.

Williams, S. 1987. *User education and library orientation: report on the workbook project, July 1986-May 1987.* Unpublished report to the Academic Advisory Committee, University of South Africa.

Williams, S. 1989. Research into the relationship between library usage and student achievement at Unisa. *Progressio*, 11(1):206-209.

Williams, S. 1989-1992. Personal interviews. 28 September 1989, 24 January 1990, 21 February 1990, 6 November 1990, 7 February 1991, 15 June 1992, 23 June 1992, 14 July 1992, Pretoria.

Winkworth, F. 1977. *User education in schools: a survey of the literature on education for library and information use in schools.* London: British Library. (British Library research & development report; no. 5391 HC.)

Wolf, C. & Wolf, R. 1986. *Basic library skills.* Second edition. Jefferson: McFarland & Co.

Wright, C. & Larson, M. E. 1990. Basic information access skills: curriculum design using a matrix approach. *Research strategies*, 8(3):104-115.

Yee, S. G. 1989. Information literacy skills: how students

learn them and why, in *Coping with information illiteracy: bibliographic instruction for the information age; papers presented at the seventeenth National LOEX Library Instruction Conference held in Ann Arbor, Michigan, 4 and 5 May 1989*, edited by G. E. Mensching and T. B. Mensching. Ann Arbor, Mich.: Pierian Press:43-59.

Zaaiman, R. B. 1985. The information society in South Africa - an exploratory study. *South African journal of library and information science*, 53(3):129-138.

Zaaiman, R. B., Roux, P. J. A. & Rykheer, J. H. 1988. *The use of libraries for the development of South Africa: final report on an investigation for the South African Institute for Librarianship and Information Science*. Pretoria: University of South Africa, Department of Library and Information Science, Centre for Library and Information Service.

Zobec, H. 1990. Cooperation between school and public libraries. *Australia public libraries and information services*, 3(4):245-248.

Zurkowski, P. G. 1974. *The information service environment relationships and priorities*. Washington, DC: National Commission on Libraries and Information Science. (National Program for Library and Information Services related paper; no. 5.). (ED 100391.)

Zurkowski, P. G. 1981. The library context and the information context: bridging the theoretical gap. *Library journal*, 106(July):1381-1384.