

Faculty of Education

The information resource needs of undergraduate distance education students and the academic library's role in meeting these needs.

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Certificate

It is certified that this thesis is the sole work of Lynne Margaret Vautier. Due acknowledgement has been made of all quotations from other works. The thesis has not been submitted, in whole or in part, in respect of any other award at Curtin University of Technology or elsewhere.

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Abstract

This research examines the reading and information needs of undergraduate distance education students at Curtin University of Technology and the academic library's role in meeting those needs. Twelve undergraduate units offered at Curtin were selected as the prime units of this research. The research was conducted in three phases in 1996. First, the documents supplied to the distance education students were examined to determine what reading was specified and/or suggested to the students. Next, the unit co-ordinators responsible for the units were interviewed to find out what reading and information literacy expectations they held for their distance education students. Finally, the non-metropolitan area students enrolled in the units were interviewed to find out if they felt they could complete the units using only supplied readings and prescribed texts. They were also asked about obtaining resources through Curtin University Library and Information Service or other sources. Their use of telecommunications and computers was also examined.

This research found there were as many models of the practice of distance education as there were units surveyed. There was a high degree of agreement between the unit co-ordinators and students on the possibility of completing their associated units using only the supplied reading plus the textbooks. The students could not complete their units using only the supplied reading but many could successfully complete units using the supplied reading and set texts.

Although all students were using computers there was a significant difference in the number of students that had access to a computer linked to telecommunications and the number of students that were using this access. Only a small proportion of the students used this facility to access the Curtin Off Campus Library Services.

There was a lack of knowledge by students of the services and resources that were available to them. Responses from students indicated they were not effectively informed about the services and resources available. This lack of knowledge of existing services points to a need for improved marketing of the services to this group of students. An improved level of co-operation between the library, the unit co-ordinators and the University Distance Education Service is recommended to address some of the issues raised in this research. This co-operation should include working with academic staff in unit and course design and a review of the promotion of all services to distance education students

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Glossary

The following definitions have been used in this research study.

Unit plan

This term refers to a document supplied to students, which describes the structure and administrative details of the unit the students are studying. It outlines the content and unit objectives. The Unit plan also contains references, details about assignment presentation and advice on contacting tutors or the Distance Education office.

Unit guide

This term refers to a document supplied to students, which is designed to guide and direct the study throughout the semester, topic by topic. It is usually divided into modules, chapters, sections or weeks. Each of the sections normally gives the objectives, subject content and activities, and directs students to readings, audiotapes, videos and other resources as appropriate.

Book of readings

This is a collection of journal articles; documents and extracts from books relevant to the unit specifically compiled for distance education students. This is supplied to students on starting the unit.

School/Department

This is the academic unit within the University responsible for teaching and research in one or several related disciplines.

Unit co-ordinator

This is the person responsible for all aspects of unit delivery, although this person may not write or tutor the unit.

Unit tutor

This person is responsible to the unit co-ordinator for the provision of assistance, assessment and comments to students. A tutor may be a unit co-ordinator, another

member of academic staff, or a session staff member appointed specifically to tutor in the unit.

Course

A program of instruction which leads to the award of a degree, diploma or other distinction.

Units

Subjects studied as part of a course which accrue credits towards an award.

Credit Points

The values attached to each subject or unit studied as part of a course. Full time students are usually required to undertake units totalling 100 credits in each semester.

Semester

The University teaching year is divided into two periods or semesters. Each semester includes 14 teaching weeks with a break in the middle of one week, two weeks of study and exams.

Information resources

This refers to scholarly information, printed, audio-visual, electronic, or realia needed to support a unit of study. It does not refer to the administrative information needed by the student such as assignment submission deadlines.

Computer mediated communication

This describes the linking of computers with other computers via a telecommunications network.

Mixed mode students

These are students that are undertaking some distance education units whilst also studying at least one unit on-campus.

Chapter 1

Introduction

1.1 Background

An “exponential expansion of distance education” is the optimistic future of tertiary distance education that is being articulated by Hawkrige in his “Big bang theory of distance education” (in Lockwood, 1995, p3). It is a view echoed by Universities and other institutions of higher education, not only in Australia but also throughout the rest of the world.

The university sector faces the challenge of meeting the needs of a student population and society that is increasingly diverse. The adult student is forecast to become the fastest growing segment of this population and older students are predicted to become the majority (Galusha, 1997). It is further predicted that in response to this environment most activities in higher education will take place off campus taking advantage of technological methods of delivery (Galusha, 1997).

This increasing emphasis on distance education and other flexible modes of delivery of undergraduate education is placing a complex set of demands on the library and information services charged with supporting these students. Distance education is not just a mode of education but rather a complex system that requires critical analysis of the nature of its teaching and learning activities. We can then, not only respond to the needs of these students, but also become partners in the design and delivery of distance education and its information resource support.

1.2 Distance education as a student centred practice

Distance education is, or should be, student centred learning but some observers argue that until now quality in distance education has been measured by political, economic and technical advances rather than by the students (for example, Marland, Patching & Putt, 1992). Research grounded in a student’s reality that puts the learner at the top of the priorities would include consideration of how service providers can ensure students

have access to sufficient and varied resources. The difficulties faced by distance education students in obtaining access to the resources needed for independent study would also need to be addressed.

Use of the distance education mode of delivery of undergraduate education is not restricted to those students who are geographically located a long way from an institutions' campuses. A study by the National Board of Employment, Education and Training (NBEET) found that over half of all tertiary students enrolled in distance education programs in Australia live in metropolitan areas (1992).

For a remote distance education student the physical separation between student and teacher means their experience of a university education is very different from that of an internal student. It is also different than that of a student studying at a distance that can visit the campus and the library. The students are often unsure of their own academic abilities and find communicating with the university and the academics daunting or intimidating (Booker, 1995).

The students do not make the distinction between the separate sub-systems that usually operate in the delivery of distance education at tertiary level; that is course development and delivery and support services, including library services. Perhaps, in an environment that sees students as consumers paying for a service, it is a distinction with which they should not have to grapple. This metaphor, the student as consumer, has implications for library and information service support providers (Mcmillan, 1996).

1.3 Course design

Experience has demonstrated that successful delivery of distance education programs requires the carefully planned choice, preparation and presentation of teaching materials (Wood, 1995). Extra reliance on course materials is necessary in this mode of delivery. Many of the units offered via distance education were originally designed for internal, face-to-face delivery. These are then offered to distance students and the internal course design is applied regardless of the context of delivery and of the learners. A course designed for internal delivery may make certain assumptions about the nature of

access to and support from a library and information service such as the student will be able to actually visit and use the library.

1.4 Growth of distance education in Australia

The University of Queensland was the first to offer distance education in Australia in 1911. Australia had quickly followed the University of London in offering provision for tertiary study at a distance (National Board of Employment, Education and Training, 1992). Since then enrolments have grown until 1985 when 12% of all tertiary education enrolments in Australia were distance education students. During the 1990s, the rate of growth in numbers of students undertaking distance education in Australia has continued to increase rapidly (Candy, Crebert & Leary, 1994). A NBEET report published in 1990 found that most distance education students are undertaking part time study and that only 25 % of these students are actually remote for the host institution.

1.5 Curtin University and distance education

Curtin University of Technology was created from the former Western Australian Institute of Technology in 1987. It is what Cameron calls a “hybrid institution”; that is one that offers on and off campus modes of study (1988, p228). The main campus is situated six kilometres south of the city centre in the suburb of Bentley with branch campuses at Shenton Park (Physiotherapy and Occupational Therapy), Muresk (Agriculture), a School of Mines in Kalgoorlie, and a Graduate School of Business in the central business district of Perth. Between 1966 and 1976 student enrolment leaped from 2000 to 10000 students. By 1996, there were 13113 full time enrolments, 7071 part time enrolments and 1393 distance enrolments.

Curtin University’s academic activities are centred on four areas: Business, Health Sciences, Humanities, and Science and Engineering. In 1990, Curtin combined its media, educational development and distance education functions into one group called the Teaching Learning Group. This area was given prime responsibility for the support and co-ordination of distance education at Curtin.

By 1996, Curtin University offered 458 course units by distance education. The following undergraduate courses could be studied at Curtin completely in the distance mode:

- Bachelor of Applied Science (Information and Library Studies)
- Bachelor of Applied Science (Nursing - Degree completion)
- Bachelor of Applied Science (Records Management)
- Bachelor of Arts (Social Sciences)
- Bachelor of Arts (Education - TAFE)
- Bachelor of Commerce (streams: Accounting, Economics and Finance, or Marketing)
- Bachelor of Education (Conversion)

In addition, the following undergraduate courses could be partially studied via distance education at Curtin in 1996:

- Bachelor of Agriculture
- Bachelor of Horticulture
- Bachelor of Science (Health Science) Health and Safety option
- Bachelor of Science (Psychology)
- Bachelor of Social Work

There are plans to expand rapidly the number of units and courses that are offered by Curtin via the distance mode. Curtin's Strategic Plan 1997 - 2000 argues that, "There is also a potential threat from those providing tertiary courses through non-traditional media such as the Internet." However, this is also an opportunity to be exploited and supported. The plan further states that "Growth in distance education requires that the funding of the Teaching Learning Group support for this area should be more closely tied to the volume of work." In 1994, Curtin piloted a computer mediated communication module for the purpose of teaching, tutorial support and social interaction between on and off campus students.

1.6 Library services for distance education students at Curtin University

To understand the context of this research it is important to obtain a picture of the library and information services offered by Curtin University to its distance education students. The Off Campus Library Service (OCLS) that forms part of the Collection and Lending Services Unit in the Curtin Library and Information Service delivers these.

The OCLS provides students outside the metropolitan area of Perth with access to library and information services. This includes book loans, photocopied articles and exam papers, literature searches and advice.

History

In the mid 1960s distance education was identified as a strategically important area for what was then the West Australian Institute of Technology (WAIT). As a consequence a person was employed in 1968 to co-ordinate the distance education activities and academic staff were given time to prepare courses and units for delivery via the distance mode. The service provided by Curtin University Library and Information Service to distance education students was originally set up at the prompting of B. H. Durston who joined WAIT in 1970 to head the newly formed External Studies Unit. He persuaded the Library Service to establish a collection of materials specifically for the use of distance students (White, 1996).

Off Campus Library Service staff

A supervisor and two library assistants staff the Off Campus Library Service. The supervisor is not a qualified librarian; however, this person is a very experienced member of the library staff. In addition, there is some reference and literature search support provided by staff in the Information and Education Services unit.

Off Campus Library Service resources

A separate collection of books and videos is established each semester. This collection is comprised of material that it is anticipated will be in high demand during the semester. Information is gathered about the units that will be offered via distance education and attempts made to obtain details of the set texts and prescribed reading that will be cited in the unit plans before the semester starts. In addition, the Service draws on the material in the Library and Information Service's main collection. The Off Campus Library service has funds allocated to it each year from the Acquisitions budget. These allow the Service to recommend the purchase of information resources that it believes will be of use to the Distance education students. In 1996, this amount was A\$29,000.

Undergraduate students are able to borrow a maximum of twelve books from the

service. All material is subject to immediate recall if required by another borrower. If this is the case, a recall notice is sent by post to the student. Fines are incurred for all over due materials.

Costs to the students

A document delivery account with a minimum amount of twenty dollars must be opened with the service if photocopying, faxing or interlibrary loans are required. Costs incurred are deducted from this account. Costs range from 20 cents per page for faxing material to between three and nine dollars for an inter-library-loan. Return postage is paid for material within Australia. The service also requires that material posted overseas be insured at the sender's cost.

Contacting the service

Students can contact the service to request book loans and copies of available exam papers by telephone, fax, email or post. Requests for photocopying must be sent in writing in order to comply with the Australian Copyright Act (1968). Therefore, requests can be faxed or posted to the service. A twenty-four hour answering service will take messages and contact the students in office hours. Requests for literature searches must be submitted in writing by post, fax or email.

Dissemination of information about the service.

Information about the library and information services available to distance education students comes from three sources:

- The Off Campus student information booklet.

The information that is sent to students when they start the unit is in an eleven-page booklet called "Off Campus Library Service: Handy hints and answers to frequently asked questions". This is produced by the staff in the Off Campus service and passed to the Distance Education Service for dispatch with the study materials to the students.

- The staff in the Curtin Off Campus Library Service

Staff in the Off Campus Library Service provide advice on accessing and using the service when the students contact them. Of course, this is predicated on the students knowing the service is there in order to make contact and request assistance.

- The University World Wide Web site.

The University's World Wide Web site has information for distance education students about the Off Campus Library Service. The following statement is from the Distance Education Handbook on the World Wide Web:

If you are a distance education student living in a remote area, you can access library materials by mail or email through the Library Off Campus Service. When you are in Perth, you are welcome to visit the Curtin Library.

The Library Off Campus Service provides a postal lending and photo copying service for distance education students. This service is not available to distance metropolitan students; except in special circumstances, such as for those with a disability/medical condition. Photocopying services are available on the payment of a small joining fee. More detailed information on library services is forwarded to you with your study package.

The public libraries and regional TAFE college libraries of Albany, Geraldton, Kalgoorlie, Karratha, South Hedland and Mandurah also have useful collections and receive copies of the Curtin Library catalogues of books and periodicals. The Edith Cowan University campus at Bunbury extends its library facilities to Curtin's distance education students on production of a letter of introduction from the University. A letter of introduction is included in your study package and can be presented to the library of your choice (1996).

1.7 Research rationale

Universities articulate a philosophy of common experience, support and opportunity for all students (see for example, Curtin University of Technology 1997 *Strategic Plan 1997-2000*) and the centrality of library and information services to the experience of higher education has long been acknowledged. However, the quality of student library and information resource service and support in distance education is still a problematic, and in some areas, an unrecognised issue. Lynch commented "information resource and library support for distance education don't seem to be very high on anybody's agenda" (1997 p. 29). Many institutions assume that programs delivered off campus are comparable to those delivered on-campus and that information resources

needed to support such programs are also comparable (Cook, 1991). Critical analysis of information resource support for distance education students is vital to the future operations of the Library.

A report by the National Board of Employment Education and Training noted that at Curtin there is a "stark contrast" between the vision articulated by the Teaching Learning Group for distance education and the reality. This is described as a "mixed bag of practices and attitudes" from the schools actually offering the units of study (1994, p.64).

This current research will attempt to address the part of this contrast relating to information resource needs and support. However, it does not only draw from an internal library or existing users' perspective, but rather, starts by examining the information resource and literacy expectations of the unit co-ordinators responsible for the delivery of the units. This is then related to the expectations, preferences and information resource seeking practices of the students.

Computer technology and telecommunications have the potential to shorten any gap between vision and reality. More and more programs are starting to use computers and telecommunications technology to link students with their lecturers. Email, the World Wide Web, and online real time discussion groups and the integration of spreadsheet packages and specialised commercial software packages into the course content offers new possibilities in providing support. This study seeks to differentiate between questions such as potential access to a range of information resources including computers linked to telecommunications and actual use of that access.

1.8 Research questions

The main question underlying this current study is:

What are the information resource support needs of Curtin University of Technology undergraduate distance education students and how can the Library and Information Service best meet these needs?

In order to answer that major question, this research seeks answers to the following

questions:

- 1) What are the expectations of distance education students held by unit co-ordinators in relation to reading and information resources when they design and deliver their distance education units?
- 2) Do the students undertaking these units feel they are able to complete the units using only their supplied reading and prescribed textbooks?
- 3) From where are the students obtaining their reading and information resource materials?
- 4) Are the students using computers and telecommunications to access the information they need to complete their units and, if so, how are they using them?
- 5) To what extent are the students aware of the range of library resources and services available to them to support their studies?
- 6) What factors inhibit or promote distance education students' use of the Curtin University Library and Information Service?

1.9 Assumptions

This research is grounded in certain assumptions and limitations. It is concerned with what are defined as wholly undergraduate distance education students at Curtin University of Technology. It does not include mixed mode students. It does not seek to address some of the very real issues involved in the support of Open Learning or postgraduate students. Further, it is only concerned with undergraduate students who are resident outside the metropolitan area of Perth; that is, students who are classified as remote.

This research does not include those students who form part of what is referred to as Curtin's offshore twinning arrangements. Under these arrangements, Curtin has contractual arrangements with a significant number of institutions in South East Asia for delivery of tertiary education. The students undertaking study via these arrangements do experience some elements similar to distance education students (for example, delivery via the World Wide Web) for much of their course material. However, they have the benefit of regular visits by Curtin staff to the institutions to carry out intensive, face-to-face teaching sessions.

1.10 Distance education definitions

There are still debates in the literature over the definition and limits of the term distance education. Distance education is a generic term that can include a range of teaching and learning activities. Theorists are attempting to redefine the term in response to changing methods, political imperatives and technology (for example, Fraser and Deane, 1998).

Over half of all tertiary students enrolled in distance education programs in Australia live in metropolitan areas (NBEET, 1992) and definition is further complicated by a lack of agreement about terminology. Distance education is referred to by a variety of names such as external studies, off campus study, home study and correspondence education. Distance education is further blurred and confused by the open learning concept that is considered fundamentally different from distance education although both involve a form of education where there is a physical separation between teacher and student. An important difference between distance education and open learning is that the student may enter open learning without prior qualifications whereas distance education students must qualify to study, as do internal students.

Significantly, the literature often refers to distance education as resource-based learning. This implies students completing a course using materials supplied by a teacher or institution.

In 1973, Moore provided a definition of distance education that is still relevant:

All those teaching methods which because of a physical separation of learners and teachers, the interactive (simulation, explanation, questioning, guidance) as well as the preactive phase of teaching (selective, objectives, planning curriculum and instructional strategies) is conducted through print, mechanical or electronic devices (Moore, 1973, p.669).

Fraser and Deane (1998) argue that the term distance education is a comparatively new one that was only officially adopted in 1982 at the Conference of the International Council on Correspondence Education. The definition offered by Garrison is also a

useful one:

- Distance education implies that the majority of education communication between and among teacher and student occurs non-contiguously.
- Distance education must involve two way communication between and among teacher and student(s) for facilitating and supporting the educational process.
- Distance education uses technology to mediate the necessary two-way communication. (Garrison, 1989, p.5)

Keegan offers a list of six basic elements that he asserts are essential to define what is encompassed in the term distance education:

- The separation of teacher and the learner which distinguishes it from face-to-face lecturing.
- The influence of an educational institution which distinguishes it from private study.
- The uses of technical media, usually print, to unite the teacher and the learner and carry the education content.
- The provision of two-way communication so that the student may benefit from or even initiate dialogue.
- The possibility of occasional meetings of teacher and student(s).
- The participation in an industrialised form of education which if accepted contains the genus of radical separation of distance education from other forms within the educational spectrum (Keegan, 1990, pp.38-39).

Keegan's list has been praised, criticised and modified a great deal in the literature since its publication. A simple four-point definition derived from Keegan's definition is the one that will be used to reflect the often unique and important aspects of distance education in this research:

- Teacher and learner are separate for most if not all of the learning process.
- The course is organised by an education institution.
- Some form of media is used to bridge the gap between teacher and learner and to carry the course material.
- Two-way communications between teacher and learner is provided.

The term external studies or students is the one used in some administrative functions at Curtin to describe what are for the purposes of this research distance education. Therefore, when this term is drawn from these sources or used in a direct quote from a unit co-ordinators, a student or the literature it is taken to mean distance education.

1.11 Significance

Distance education, already a respected and valued mode of delivery of tertiary education in Australia, is receiving added impetus from an economic environment that requires more efficient ways of achieving defined ends. This, coupled with the possibilities offered the growing acceptance of computer mediation communication, means that distance education is a growing phenomenon.

This predicted rapid increase in the institutions offering flexible modes of delivery, and the growth in the number and type of courses offered via distance education, means we must critically examine the services provided to support these students. Distance education can be more than an attempt to replace the interpersonal communication possible with the face-to-face delivery mode. It will need to encompass a level of resources and information literacy skills beyond the provision of a pre selected and digested supplied readings and textbooks.

This current research study should enable Library and Information Services to improve the resources and services provided for distance education students. It will also help to ensure distance education course designers are aware of the reading resource implications for the students who will eventually undertake the unit. An anticipated outcome is a demonstrated need to ensure the library participates fully in the course design process to integrate information literacy into the content of the courses. This research study should provide information that is relevant for other libraries in academic institutions offering units of study via distance education.

Chapter 2

Literature Review

2.1 Introduction

A review of the literature on the topic of distance education, the information resource needs of distance education students and the provision of library services to these students yielded a wealth of material on the topic. This dated from the early nineteen seventies. Most of the literature from this time focused on some of the practical challenges in providing any kind of library service to remote clients.

Some writers questioned the need to provide a service at all. Any attempts to articulate a theoretical framework are comparatively recent phenomena in the literature. Of course with the increasing possibilities offered by the linking of computers and telecommunications the literature has taken up the issues involved with the delivery of distance education. There was a high degree of repetition in the issues addressed in the literature. This confirmed that the issues being addressed were of common concern across all bodies charged with the responsibility of providing library and information resource services to distance education students.

2.2 Surveying the literature

The first step involved searching a range of academic databases available online or on CD-ROM. These included but were not restricted to: Education Resources in ERIC, Australian Education Index (AEI), Library and Information Science Abstracts (LISA), Australian Library and Information Science Abstracts (ALISA), Australian Public Affairs Information Service (APAIS), Abstracted Business Information (ABI), Uncover, Current Contents and Dissertation Abstracts. A search was undertaken of the catalogues of Curtin University Library, other Australian University libraries and some overseas libraries.

Profiles describing the topics involved in the current research were set up on Uncover (Uncover Company, Colorado) and Current Contents (Ovid Technologies Inc., 1997) to ensure new publications on the subject were retrieved during the course of this study. Much of the material retrieved was found as a result of using the "compost method", that is, using the bibliographies that accompany useful material to find further sources.

A number of papers were obtained during attendance at Conferences such as the DESIG, "Shifting sands: distance education in times of change" the 1997 biennial conference of the Australian Library and Information Association Special Interest group on Distance Education. An online electronic journal, the Journal of Library Services for Distance Education proved a useful source of information. A search of the Internet found an also overwhelming amount of material.

The sheer volume of material necessitated restricting the search in a few ways. It was not restricted to only Australian material but included material from United Kingdom, Canada and the United States as there are factors that operate in these countries that make their experience relevant to the Australian experience. It excluded material from some developing countries, material that focused on information resource provision and support to a specific subject area, and apart from some critical key works or historical reviews, excludes most material published before 1985.

All of the references found were placed in an Endnote library (Endnote 3, 1998; Niles Software Berkley California, <http://www.niles.com>) to allow easy control and retrieval and to facilitate the compilation of the bibliography. The literature found was then grouped into three areas of concern for review and discussion: theoretical, contextual and delivery frameworks.

2.3 Theoretical frameworks

A theoretical framework of distance education and information resource support for its activities has only comparatively recently started to be articulated. Indeed, some theorists argue that any theoretical underpinning had not been not fully described or critiqued (for example, Jevons and Guiton cited in Ortner, Graff & Wilmersdoerfer, 1992). Long (1994) reports a paucity of research and comment on outcomes in distance education. Evans (1990) maintains that the covert theoretical and ideological positions of some writing on distance education resources should be understood in relation to what is driving the research. Therefore, whether the aim is exploiting the possibilities of new uses for educational technology or the economics of production in the delivery resources will determine the theoretical approach taken in the research. Sauve (1993) has surveyed the literature and argues that the various themes articulated as theoretical bases for distance education can be divided into two groups. The first are theories concerned with student autonomy and independence and the second are theories of interaction and communication.

Deficit model

Distance education and the attempt to provide scholarly information resource support has often theorised in the past as a deficit model of delivery (Herrmann in Herrington, 1992, p.18). This was based on the assumption that a face-to-face model is the best of all possible learning contexts. Therefore, distance education is not theorised as an education system in its own right but rather a substitute for conventional face-to-face education. From this theoretical basis all actions are constructed as attempts to minimise the disadvantages inherent in distance education, make up for something that is missing and duplicate the experience of on-campus students as far as is possible.

The literature is now articulating a model of distance education that has distinct advantages over the traditional models and includes examples of distance education as a positive model. For example, Galusha (1997) argues that the advances in telecommunications and computers are providing a different dimension to the

communication process for these students. The use of these media leads to the isolation of the cognitive and affective domains, which is an important benefit of this form of communication. Figueroa (1992) found that distance education students were more interested in their own learning than students enrolled in traditional courses and therefore will become more active participants in the learning process.

Holmberg (1989) formulates a theoretical model of distance education not as a poor substitute for the face-to-face-model but rather as separate model of education with separate clients. His model assumes that distance education students are highly motivated adult learners that are given a high degree of autonomy. Ortner and Graff (1993) highlight the opposite theoretical assumption that operates in distance education. This argues that the lines between distance education and traditional forms of delivery of education are blurring as each type of education learns from the other and moves to become more like it.

Industrial model

Some practitioners are drawing on a theoretical base from outside education and use an industrial model of production of resources in distance education. It is suggested that this is a useful theoretical framework with which to examine the phenomenon of distance education (for example, Evans, 1990, and Keegan, 1990). It is a production control theory in which a set of strategies is used to achieve a prescribed goal and product. Champion (in Evans, 1990) calls this Fordism, a reference to the production line approach to the provision of a service or product. Teaching and support in distance education is rationalised, objectified and standardised. The materials are "developed by experts," tested prior to production and then marketed (Altrichter, Evans & Morgan, 1991, p.4). The important element for this study is the planning of teaching activities and learning activities as self contained, separate activities (Keegan, 1990). Knowledge is fixed, and control over the materials and the curriculum rests with the institution. Students are consumers of a pre-determined product. In this model, teaching is transformed from a personal process to a mechanical or electronic one. The movement is from the individual labour of the teacher to mass production and consequently results in the loss of

adaptability to the individual requirements of students. The researchers argue that this leads to alienation of both teachers and students. Indeed, the industrial model of pre-packaged distance education materials is a further rationale behind the re-structuring of distance education in Australia. It is a move towards the control model of resource provision based on a centralised system. Clearly, the role of information resource support is marginalised in this model.

A different perspective is suggested by Evans (1990, p.17). He developed a theoretical field of inquiry that he calls "cultural and ideological technology". He uses this as a form of critique to go beyond the rationality of technological approaches in the delivery of distance education materials and support to an analysis of the ideology that under lie distance education debate. He also uses a form of "critical reflection" whereby students use their analytical powers to assess elements of their studies against their own explanatory frameworks (Evans, 1990, p.17). This is then used to develop models of support based on the students' frame of reference not that of tertiary institutions or librarians.

Lifelong learning and information literacy skills

Concern about educational units that rely only on textbooks and pre packaged, pre selected readings and consequently teach very little about information seeking skills has existed in the literature for some time (for example, Knowles, 1990). Knowles argues this approach assumes the student will accept a limited range of information rather than search for multiple theories. Further, it reduces the opportunities for the student to develop self-directed learning skills. A report commissioned by the National Board of Employment Education and Training (NBEET) found that,

Library resources and services are critical for academic quality of most distance education programs and to the progress and retention of students - packages of course readings do not substitute for this and there is evidence that the better course packages in fact simulate library based research by students. (NBEET, 1990, p.64)

Candy, Crebert and O'Leary (1994, p97) report a "seemingly obsessive focus on loading the curriculum with more and more content at the expense of learning to learn, information literacy and other generic competencies". Nowhere is this more clearly demonstrated than in the experience of distance education students who are frequently provided with a pre selected book of readings, a textbook and perhaps a list of other references. Analysis by Morgan (in Evans, 1990) found that distance teaching texts tend to be perceived by students as authoritative bodies of knowledge, not open to question. If one of the aims for undergraduate education is life long learning, distance education students must be equipped to seek out, evaluate, digest and synthesise information for themselves and be encouraged and supported in these activities.

A study by National Board of Employment Education and Training (1992, p.9) found that at Murdoch University there was noticeably less pressure on the library because many on-campus students use the books of readings intended for distance students. These are sold in the University Bookshop. The report acknowledges that this is cost effective but questioned whether it is educationally desirable or conducive to enhancing the student's information literacy skills. If it is not desirable for internal students to use these books of readings then this is a telling comment on what is the routine experience for the vast majority of distance education students.

Candy, Crebert and O'Leary (1994) discuss several surveys that considered knowledge development was less important than the development of skills in communication, decision making, and problem solving,

It is no longer sufficient for graduates, or indeed any other member of the community, to be able simply to make use of library reference collections, manual catalogues and the odd bibliography.... It is important, therefore that graduates leave University equipped with strategies to locate, access retrieve, evaluate, manage and make use of information in a variety of fields, rather than with a finite body of knowledge that will soon be outdated and irrelevant... (Candy, 1994, pp.102-103).

Instructional design

In the teaching and learning activities involved in distance education the students and teachers find their roles altered from that which is the norm in traditional methods of delivery (Galusha, 1997, p7). The teacher often becomes a mentor or facilitator and the student becomes an active participant in the learning process. They are collaborators. In this scenario, the quality of the materials becomes crucial. Indeed, for many researchers in distance education, the key to improving the quality of teaching and learning in distance education is instructional design.

Keegan (1990, p.53) sees an essential difference between what he refers to as "monologues": books, newspapers, journals, television broadcasts and "dialogues": normal classroom interaction, teleconferencing or computer conversations. For most distance education students their communication is almost entirely via a carefully selected set of "monologues". This dichotomy between the dialogic and the monologic is defined by Marland (1997, p 86) as the two paradigms of teaching, "conservational" and "instructional". He is drawing on Romiszowski (1995) who argues for a move from the "instructional" where content is designed and prepared by an instructor to the conservational where content is the result of input by many participants including students.

Analysis by Morgan (in Evans, 1990) found that distance teaching texts tend to be perceived by students as authoritative bodies of knowledge, not open to question. Frequently little or no direct dialogue is possible with the material selectors and suppliers, the institutions or teachers. The student is often faced with a dismayingly large package of material and their only communication with the teachers is via prescribed assignments. This led researchers to take an active interest in the debate over what constitutes quality in materials design and production for distance students and how to incorporate in to these elements of using the literature in a given subject.

Recent research points to a movement away from the individual teacher being solely responsible for the design, development, delivery and evaluation of course materials

towards a team approach. In this model a wide range of specialists, ideally including librarians, co-operate to produce a package of materials. This involves ideas of concept mapping, cognitive modelling, knowledge engineering, and sequencing of content (Herrmann in Herrington, 1992). Built into this process is evaluation of the instructional messages and the medium of those messages.

This model raises questions for researchers involved in course development about the relationship between research and the practice of instructional design. The materials and resources in distance education are more open to epistemological and methodological criticism. Kelly (1987) argues distance education and teaching creates a permanent and public record of instruction. This is unlike face-to-face delivery where "when the teacher closes a classroom door few have power to intervene in delivery or have opportunity to evaluate critically methodological or content issues" (Nunan in Evans, 1990, p.137). Pressure is placed on teachers to produce learning materials of high quality and they must acquire skills in communicating indirectly with students. These materials are more easily scrutinised for scholarly content and quality. Teachers may be preparing materials they will not actually teach themselves as the "teaching acts are separated in time and place from the learning acts" (Keegan, 1990, p.109). Learning materials are sometimes offered to students one, five, ten years after they have been developed. Indeed, it becomes problematic for researchers to define who is the teacher (Altrichter, Evans & Morgan, 1991). The principle of course design that can be applied divorced from the context of delivery has found much criticism in the literature (for example, Thorpe, 1995).

Crocker (1985, p15) argues that librarians concerned with off campus service delivery must work to achieve a higher presence in the course materials design process so as to ensure course materials supplied to students are infused "with subtle references to libraries, literature and resources".

2.4 Contextual framework

Computers and telecommunications

Distance education nearly always consists of a cluster of activities that attempt to replace the functions of interpersonal communication that take place in the on-campus mode with printed, and increasingly, electronic or computer based communication. The rate of innovation in this coupling computers and communications is raising the possibility of increasing the flexibility in delivery of higher education to the benefit of all students but particularly distance education students. Latchem (in Herrington, 1992) argues that the convergence of computer technology and telecommunications technology will radically change the way problems of physical location in education and the delivery of support to students are addressed. Webster and Hackley (1997) argue there has been little theoretical development or empirical research into technology-mediated distance learning and its support. They draw from research in management communications, education, and information systems to develop a model of influences on technology-mediated distance learning outcomes.

Until comparatively recently a well-resourced distance education unit would have used a prescribed, and often supplied, range of materials such as a textbook, workbook, maybe audio tapes, and a book of readings. However, in 1992 The National Board of Employment, Education and Training in an optimistic report estimated that 80 per cent of distance students would have access to a computer to allow computer mediated communication via AARNET (Australian Academic and Research Network) within five years. This report asserted that in the near future we can assume everyone will have access to these resources (NBEET, 1992). Other surveys were less optimistic. For example, a survey carried out by the University of South Australia in 1993 found that less than 20% of the distance education students indicated they had access to a computer and modem (Love, 1993, p9).

In a more recent study commissioned by the Higher Education Division of the Department of Employment, Education, Training and Youth Affairs Hesketh (1996) found that students having the facility to log into a library and conduct online searches of

the catalogue and research databases was the application of computer mediated communication most likely to be used. However, he had much more conservative estimates of the level of connectivity by computer to resources. This report, published in 1996, estimated that 5% have access at present, 30% will have access within three years and 50% will have within five years.

The potential uses of computer mediated communication in distance education are starting to be exploited after discussion in the literature for a number of years. Perhaps the first role it played was in the provision of course material to distance education students. It allows "mediated instruction" to bridge the distance between teacher and student (Ortner, Graff & Wilmersdoerfer, 1992, p.32).

This starts to pose fundamental questions about the nature of course design using these methods of course material delivery. The literature frequently goes beyond discussion of the use of these technologies to ask what assumptions does the use of this technology for internet based learning embody about the course design process. What is the impact on students and what is the student's experience of using the new technologies going to be? How will the technology influence study patterns and information resource seeking behaviour? Evans (1990) questions how the use of home computers in distance education affects the concept of social distance and Rowntree (in Evans, 1990, p.11) examines the effectiveness of technological learning activities in achieving academic purposes. He uses the idea of "knowledge structures, cognitive models of learning" and ideas from humanistic theorists and calls educational technology a "technocratic approach to course development". Rowntree argues that educational technology is seen as a set of neutral, value free procedures or tools but this is problematic. The theory is that if only teachers and course writers could produce good enough materials and make the courses self contained then the problems experienced by students would be overcome.

Computer mediated communication has opened the possibility of one-to-one and group interactions in distance education. Bloucher (1997) argues that it has become a vital method of increasing student/teacher and student/student interaction as well as way to

amplify the social presence of learners within the highly independent learning environment of distance education.

However, there are many instances in the literature of research sounding warnings about the adoption of these technologies without adequate research. The technology must be seen as a means to an end not an end in itself (NBEET, 1992). Fraser and Deane (1998) warn, "it is the instructional outcome that is the focus, not the technology of delivery". Achieving specified educational goals in distance education is not just a matter of choosing an appropriate set of teaching technology but also using it appropriately. To improve distance education material it is not enough to "substitute print-ware for software" leaving contents and methods aside (Ortner, Graff & Wilmersdoerfer 1992, p.166).

There is an important difference between the use of computer mediated communication by internal and distance education students. For internal students the technology is usually a supplement to the teacher but in distance education it is usually a substitute for the teacher (Keegan, 1990). For example, access to references represents only one step in identifying, selecting and obtaining the scholarly information resources needed to support a distance education course. The possibility of accessing the catalogue of the Library and other bibliographic resources opens a vast range of possibilities for distance education students. However, bibliographic access is not access to full text items. A far higher level of skill is needed to select relevant items when the student is presented with so many choices via a computer terminal (Wilson, 1993).

In spite of these reservations, the coupling of computers with telecommunications is starting to have an impact on the information seeking methods of distance education students. Indeed, Galusha (1997) argues that distance education students are actually responding more adeptly to computers, telecommunications and the world wide web than their teachers.

Economic pragmatism

Research into the comparative cost of providing distance learning materials, as opposed to the provision of comparable resources, to internally enrolled students has become an important focus for higher education during the past ten years (NBEET, 1994). All Australian universities have had reduced government funding per student for the past decade. Not only is this trend likely to continue, but the period 1997-2000 will see a direct government funding reduction at the same time as there is a substantial increase in costs (Curtin University of Technology, Strategic Plan 1997-2000). This has given rise to the question of whether providing students with a package of materials (printed or electronic) off campus is a more cost efficient way of providing students with access to tertiary education than the provision of education buildings, classrooms and all the associated infrastructure. This, coupled with demands from employers for a flexible work force (for example, Slade, 1991 and Thomas, 1990), is a strong philosophical underpinning of recent Australian government policy in distance education. It has led to cost comparisons with on site delivery and resources including the cost of writing new materials suitable for off campus learners (Ashenden, 1987).

There have been several studies that attempted to analyse the costs of providing distance education study materials in Australia. Ashenden (1987) claims that each of these studies was forced to approximate and speculate because in some institutions the accounting systems were too simple. In others, distance and conventional resource provision were intertwined so that costs could only be guessed.

There is an expectation that allowing for the economies available in course development and production the average cost per EFTSU (equivalent full time student unit) for distance education courses would be less than that for on-campus students. Whether this is the case may depend on the model of distance education used to provide this education. The model that has traditionally been the approach in Australia involved lower up front costs but as more teacher time was spent on each student, the student/ unit cost was high. However, following the model introduced in Australia with Open Learning Australia and starting to be followed by some providers, the largest cost outlay is in the development of

the course materials. The cost then falls in relation to the number of students that use the materials. Both models tend to focus on the costs to the institutions. They neglect analysis of costs to the students when accessing the various types of undergraduate education and costs borne by the library services charged with the responsibility of supporting these students.

Equity and access support

Keegan notes that distance education is seen as a commodity that is of interest to “educational innovators and political realists who want the cheapest provision for the national economy” (1987 p. 103). However, in addition to arguments about the economics of differing modes of delivery of tertiary education, issues of equity and social justice are behind the need to develop alternative learning environments, such as distance learning, to meet the educational needs of existing and potential students.

The demand for distance education as a solution to access and equity issues is being driven by changes in several related areas. First is the change in the nature of students undertaking undergraduate education. Non-school leaver students are now much more numerous on university campuses. In most professions, people are faced with a need to update or completely change their skills and knowledge several times during their working lives. These non-traditional students are frequently not well served by traditional modes of delivery of tertiary education.

Just as significant is the epistemological argument that defines learning in terms of students constructing knowledge for themselves rather than passively receiving knowledge from a teacher (Newman, Griffin & Cole, 1989). Traditional modes of tertiary education were based on the need to be physically near the resources of an academic environment and its support services such as libraries. Today resources of recorded knowledge are unstable, complex, and far more transportable than in the past. Telecommunications networks can connect students, academics and library and information resources in a dialogue of learning unhindered by many of the traditional constraints of time or geographical location. The consequences of being able to store and

transmit via the Internet sound and moving images is just beginning to impact on course design. We are beginning to see what embedding these technologies within the courses and services means for distance education (Brown, 1985; & Kubota, 1991).

2.5 Delivery Framework

Role of libraries in supporting distance education

Whatever the motivation to undertake tertiary distance education the experience can be lonely, difficult, even daunting especially when coupled with a lack of support mechanisms (formal and informal) that other traditional students take for granted.

Dodds (1984) describes a study of on-campus and distance university students' perceptions of factors influencing distance studies. Students identified family, job, and life circumstances as major influences; self-reliance and finances as advantages; limited library access as a major disadvantage; and a strong preference for on-campus study or a combination of both.

Some previous studies of users of distance education library services often ignored non-users (Kascus & Aguilar, 1987) and few have questioned the reading expectations of academics and the student's responses to these expectations. Cavanagh (in Evan and Murphy, 1994) discusses a number of studies on the attitudes of academics to the need for students to develop library skills in relation to the role of libraries in off-campus study. Crocker, Cameron and Farish looked at past studies of distance students' reliance on tertiary libraries other than the host institution (1987). They found that in many country areas the only library of any size is a community or TAFE college library. They proposed a system of allowing students to access and use the resources using a "National Library Card" (1987, p1).

A survey of the literature about the role of academic libraries in assisting distance education students fill their information resource needs reveals a continuing concern with service provision to this important but often marginalised group. The nature of this

literature has moved away from being largely concerned with aspects of the physical supply of materials with satellite collections located in study centres (for example, Anderson, 1950 and Cochran, 1956). It now embodies a higher level of theorising plus a discussion of issues involved with electronic access to information resources and the levels and cost of service provision (for example Cavanagh, 1997a).

However, a 1990 report commissioned by the National Board of Employment, Education and Training found " the poor relation status of distance education...is also reflected in its status within the institutional library" (p.65). It goes further and argues that,

Some institutions teaching externally have tacitly avoided their responsibility and have failed to make proper provision for library service to their distance students and have also failed to discover which library alternatives their students are finding - if a distance education student is not using his or her institutional library, few institutions have demonstrated any concern for that situation (1990, p 64).

This is supported by several surveys that found a number of academic libraries were unaware of distance education students as part of their clientele (e.g. Snow and Howard, 1989a and Snyder, 1996). Distance education students do not normally require teaching areas and other facilities and therefore their enrolment has been considered to present fewer significant problems in the matter of support. As far as library services are concerned, nothing could be further from the truth (NBEET, 1990, p65).

Conversely, a study by Schafer in 1991 found that "the respondents appeared resourceful in locating alternative sources for materials. While 87% of respondents were aware of the distance library services provided by the University only 21% actually used library materials for their course (Schafer, 1991).

The role of Libraries and information services has evolved to where we now need to actively reach out to the student and not just passively wait for calls for the services we can provide. A frequent theme in the literature is an exploration of a library service model whereby librarians, educators and administrators work together as partners through the whole cycle from course planning and resource development through to information

literacy training. Burge, Snow and Howard (1989b) argue that to achieve this the parties must come to recognise their interdependence and improve communication between them. They made recommendations for a partnership model between off campus library services and academic staff. This partnership would include:

- Program and course planning
- Services marketing
- Resource development
- Data access
- Technical communication
- Services and material delivery
- Professional development (Burge, Snow and Howard, 1989b, p. 330).

There is concern in the literature (for example, Long, 1994) that off campus students are more likely to withdraw from courses than their on-campus peers. One reason postulated for this is difficulty in gaining access to information resources support.

Library services and distance education students

In several surveys (for example Lessin, 1987; & Ruddy, 1987) of distance education students' library use show that between 11 and 18% of students said they have no need for library services. These students reported a high level of public library use particularly in the larger cities with well-developed library services. Several researchers (for example, Burge, Snow & Howard (1989a) and Fraser and Deane (1998) point to the need for effective marketing of library services to distance education students. The large number of students in previous surveys who said they were not aware of what services were available or how to access them demonstrates this.

Previous studies of distance education information resource support at Curtin University

Three studies of the library and information service provided for distance education students by the Western Australian Institute of Technology Library have been undertaken. The first by Greenwood & Maskell in 1975 was commissioned as a result of

declining use of the External Library Collection. This study found that most students used only the reading material supplied or suggested by their lecturers. They had little or no exposure to, or need for, the skills of information selection and retrieval (Greenwood & Maskell, 1975).

In 1981, Brockman and Klobas (1983) found a perception that the lack of library facilities for distance education students had a significant relationship to the success rate in a course. Another study was carried out in 1988 by Library staff. This survey involved sending a questionnaire to existing users of the library service to measure satisfaction with the service (Vautier, 1991). This report made several recommendations for improvements to the service, some of which were adopted.

From 1991 until this research survey any comments received from students has been via direct contact with Library staff or via a post-study evaluation sheet collected by the Teaching Learning Group. This evaluation sheet covers many aspects of distance study via Curtin University and elicits comments about the Library service in only a small number of cases. At present these comments are not made available to Library staff. In second semester 1998 all remote distance education students were surveyed through a posted questionnaire. The preliminary findings of the 1998 survey validated many of the findings of this research. (Library and Information Service, unpublished report, 1998)

Standards and guidelines for library service provision

The American Library Association publishes the Association of College and research Libraries' guidelines and standards that includes a statement on standards for off campus library services (1990, pp.353-355).

In Australia the Library Association of Australia, now the Australian Library Association of Australia (ALIA), Special Interest Group on Distance Education has published a set of standards for library services to distance students: *Guidelines for library services to external students* Sydney, Library Association of Australia, 1982. A National Board of

Employment Education and Training report published in 1990 suggests that the 25% of students that are actually remote are the group of students for whom standards of library provision in distance education are intended. This report found that as of 1990 there had been no revision of the Australian standards since 1982 and recommended the guidelines be reviewed and revised. In 1989, Crocker and Grimison published a checklist of services that libraries could complete (Crocker & Grimison, 1989).

Copyright issues in the provision of library services

The issue of copyright as it pertains to the provision of information resource support to distance education students is one that is discussed, but not resolved, in the literature. Gasaway (1998) argues that if an on-line course contains all of the materials a student needs and if the copyright for some of that material is not owned by the teacher or institution providing the course, it is unlikely the provisions of the copyright laws or even fair use can be met."

Copies made for distance education by an education institution for teaching purposes are exempt from the restriction on multiple copying (Moore, 1987). However, this applies to print and because of the disparity between the speed of development in computers and telecommunication and the glacial rate of legislative change the law on copyright is not keeping pace with the new possibilities.

In Australia the Copyright Act 1968 wasn't written with electronic copying and delivery in mind and offers little assistance to libraries on these issues. There is an acknowledgement that this is an urgent issue that needs addressing. In *Copyright and the Internet (1997)*, the Australian Copyright Council discusses how courts and lawyers stretch the present Act to cover electronic copying and delivery.

In addition, during 1997-98 the Attorney General's Department and the Ministry for Communications and the Arts have been reviewing the Copyright Act 1968 through the Copyright Law Review Committee. In 1997 the two Ministries put proposals for copyright protection of electronic material into a report called *Copyright Reform and the*

Digital Agenda (1997). The Government adopted some of these proposals in its Digital Agenda, announced by Attorney General Daryl Williams at Murdoch University on 30 April 1998 and The Government plans to put its proposals into an exposure draft Copyright Act 1968 amendment bill in the latter part of 1998.

2.6 Research methods used in studies of distance education

Much of the research literature in the field of distance education resources is practical rather than theoretical. The questions being investigated tend to be concerned with management not pedagogy (Keegan, 1990). While acknowledging a practical focus is necessary, several writers have called for a firmly based theory of distance education and its support. This should include resource design and provision and can be used to underpin social, political, financial and, most importantly, educational decisions about distance education research.

The nature of distance education has frequently dictated the data gathering methods used in research. The physical distribution of students across what is sometimes the entire world means that surveys are extensively used. In the past, and frequently today, this was via posted questionnaires. Less frequently, but the literature reports with more success, telephone interviews are used. For example, Mckeown (1992) compares the responses and costs of conducting telephone interviews with mail surveys. She found that although the use of the telephone is more costly and time consuming, it is more accurate. She recommends that postal survey response rates can be improved by making them brief, anonymous and official looking. A comparatively recent method for data gathering that has been used is the Internet (Forsyth, 1996).

The literature has many examples that describe the use of postal surveys of students or libraries (for example Bundy, 1998 and Grosser, 1987). Benson describes a mailed survey that asked students how they responded to the pre-packaged nature of learning at a distance (in Atkinson, McBeath & Meacham, 1991). Benson and others argue that the

process leads to a formulation of procedures, the objectivisation of process, functional change due to mechanisation of communication and a product, that is education, for mass consumption (Ortner, Graff & Wilmersdoerfer, 1992).

The use of interviews in studies of off campus library users is more unusual. Harris (1989) describes a study by the University Library and the University of Western Australia that used interviews. Webster and Hackley (1997) carried out an exploratory study using both qualitative and quantitative techniques to examine 247 students' reactions to distance learning. The use of personal visits to interview distance education students by the researcher(s) is even more rare. This method is used to interview library and or academic staff (for example Crocker, 1989).

Researchers using qualitative approaches in distance education argue that methodologies used by them are not and can not be clearly defined. They prefer not to formulate any standard approach but talk of "general research strategies" using a hermeneutic circle as a conceptual model for the research process (Grace in Evans, 1990). Grace used a qualitative approach in a series of interviews with distance students to analyse their use of the resources supplied to them. The interpretation of the results is based on a belief that it is important and worthwhile to discover the student's story (in Evans, 1990).

2.7 Conclusion

Distance education can no longer be considered a marginal activity because of its importance as a means of providing access to educational opportunities and resources. If distance education is properly supported with the library and information resources, it can meet the new educational demands. It will then provide instructionally effective, interactive learning experiences which are flexible, equitable and responsive to the needs of the individual (Verduin & Clark, 1991).

This literature review has served to confirm that the provision of library services to distance education students is happening in a dynamic theoretical, contextual and

delivery environment. As a result of this, differences between what is being articulated in the literature and the experience of the distance student and academic will become an underlying feature of this research.

Chapter 3

Research Method

3.1 Introduction

It was decided that a survey interview approach involving the collection of qualitative and quantitative data collection would best answer the questions involved in this research. This approach would allow the experiences and impressions of the students and unit co-ordinators associated with selected undergraduate units at Curtin to be more comprehensively explored and analysed than would otherwise be possible. It would require collection of data from multiple sources and yield both quantitative and qualitative information and require several methods of analysis.

The prime unit of analysis in this research was twelve undergraduate units offered in second semester 1996 at Curtin University of Technology (see below). The main part of the data gathering was telephone interviews with each of the Perth non-metropolitan resident students in the chosen units and personal interviews with the unit co-ordinators responsible for the units. In addition, the materials sent to the students undertaking the units were analysed.

3.2 Exploratory interviews

Exploratory interviews were used to test the questions to be covered in the student interviews and to gather any additional issues relevant to this research that were raised by the students. This helped to ensure the concerns of the students were reflected in the questions asked during the interviews. In addition, the information gathered during the exploratory interviews was used when designing the interview script for the unit co-ordinators.

The exploratory interviews were carried out by telephone with six Curtin University of Technology students who had recently completed an undergraduate unit via distance education. The students were drawn from each of the three teaching divisions that had students in the study; that is, two each from

Humanities, Health Sciences and Business. The students were chosen in consultation with the staff in the Off Campus Library Service at Curtin as past users who the staff considered had been vocal in commenting on aspects of the service, positive or negative, in the past. It was decided to choose these students rather than a random group of distance education students who may or may not have used the service.

The main concern students raised during the exploratory interviews, that had not been sufficiently included in the proposed questions prior to the exploratory interviews, was the element of service delivery time. They were also concerned about the perceived extra burden imposed on these students to plan when compared to the routine experience of on-campus students. During the exploratory interviews, it also became clear that students do not separate the library from the other elements in their interactions with Curtin.

Exploratory interviews were also conducted with two unit co-ordinators responsible for units offered via distance education at Curtin that would not be included as part of the survey group.

One issue that had not been originally included in the interview, but both unit co-ordinators in the exploratory interviews were anxious to comment on, was their view of distance education as a mode of delivery of undergraduate education and some of the issues this presented for them. While this is not the primary focus of the survey, it was decided to include a prompt about this issue in the staff interviews. It was felt that this could reveal information that would be relevant to this research.

3.3 Selecting the units

Every undergraduate unit of study offered via distance education at Curtin University during second semester 1995 was initially a candidate for inclusion. Although the data gathering would be carried out in second semester 1996 the units offered in 1995 were used to select the units. This was because at the time of formulating the sample the units and the enrolments for second semester 1996

were not finalised. It was considered a reasonable supposition that there would be sufficient similarity between the two years to allow selection of the units. Later analysis when the 1996 unit information was available confirmed this.

A list of all units offered by distance mode at Curtin was initially obtained from the University Planning and Statistics Office and further tested. The inclusion of the units in this study from this list was determined by the following:

- 1) All first semester units were eliminated because of the timing of the research data gathering.
- 2) Graduate, postgraduate and other higher units were eliminated.
- 3) All units that were largely practicum, workshop or fieldwork were excluded. If the nature of the unit was in doubt, the Curtin Handbook was consulted to establish the content of the unit. Frequently, units such as these do not have an information resource use or access component and therefore were considered unsuitable for inclusion.
- 4) All units where the number of distance education students enrolled in the unit was less than ten in second semester were excluded. Enrolment numbers for this purpose was determined immediately after the DEET cut off point for enrolments (August 31). These units were excluded from the research to eliminate those units that were really internal but due to a very low enrolment, a decision had been made to offer them without on-campus teaching. For the purposes of this current research study, these units were not considered distance education units.

After all these exclusions, 48 units were left. From these 25% (12) were chosen as the prime units of analysis. They were:

- Auditing 331
- Behavioural science 172
- Business communication 101
- Business statistics 101
- Education 202
- Finance (Managerial) 212
- Human biology 134
- Law (Contract) 101
- Nursing studies 266
- Occupational epidemiology and bio-statistics 282

- Politics 112
- Psychology 114

The names of the twelve co-ordinators responsible for the units were obtained from the various school administration offices. This proved a problem in three cases as there had been late changes and some confusion as to whom was responsible for the units. However, a complete list was available by the time the data gathering for this research study commenced.

3.4 Selecting the students

Details of the students enrolled in these units in second semester 1996, including home telephone numbers, were obtained from the enrolment records on the University record system. Permission for access to the needed information was sought from the University administration. After a careful vetting process and a training session, access to the University Student Record System was granted.

The University administration acknowledge that there may be errors in enrolment information held on the Student Record System. However, no alternative source of the information was found an improvement. Further, the error rate was not considered to be significant because, for a distance education student, the accuracy of the contact details is vital as this is the way unit co-ordinators and university administration communicate with this group of students. The enrolment data required for selection of the survey sample was drawn after the Department of Employment Education and Training (DEET) cut off point (August 31). This enabled a finalisation of the number of students who were unlikely to withdraw from the units involved in this study. After this time the students must pay the Higher Education Contribution Scheme (HECS) fees and therefore were considered less likely to withdraw.

From the finalised HECS list of enrolled students, all students with a term address in the metropolitan area of Perth were then excluded. Their term address was determined by the postcode of their term residential address. Students who live in the metropolitan area are expected to have access to the campus and therefore use

the Library and Information Service as internal clients. They are not eligible to use the Off Campus Library Service. This process of elimination left 89 students to be included in this research sample.

Students not contactable by telephone

The students included in the sample described above included some that were identified as being difficult or impossible to contact by telephone. A few students had not registered a telephone number for contact when they enrolled and one student was in a Western Australian prison. In addition, it was considered that it would be difficult to contact by telephone the students enrolled from an overseas address. These two categories amounted to 15 students.

During the telephone interview process some students proved difficult or impossible to contact. If a student had not been contacted after four tries on different days and times they were deemed not contactable by telephone. There were 14 students in this group.

In order that students in the categories detailed above were not excluded from the study a questionnaire was designed to reflect the questions included in the telephone interview script (see appendix 3). This questionnaire was sent to the 15 students who did not have telephone contact details or were overseas at the beginning of September 1996. During October, questionnaires were sent to the students that were not successfully contacted by telephone, as they were deemed uncontactable. The questionnaires were accompanied by a covering letter (see appendix 1) and a return stamped, addressed envelope was included.

3.5 Student response rates

From the original survey group size of 89 students six students were found to have withdrawn after the DEET cut off date. These students were asked the reason they had withdrawn. This was done to gauge if the reasons offered were related to issues of interest in this current research study. Most of the students cited personal reasons such as ill health or changed family circumstances as the reason

they were unable to continue with the particular unit. Some students had only withdrawn from the unit being studied but were continuing with others. Nearly all expressed the opinion that they would return to study via distance education if circumstances permitted in the future.

Two of the students were enrolled in more than one of the units included in this survey and so were asked to answer for first alphabetically named unit. It was acknowledged that their responses would inevitably include impressions gained in other units but this also applied to all the students in the survey undertaking more than one unit.

All students successfully contacted by telephone agreed to be interviewed (50 students). Some students even telephoned the researcher if they had been unavailable when an attempt was made to contact them. The interviews with students usually took about 20 minutes, although some were much longer. Many students said they welcomed the opportunity to discuss aspects of their experience of distance education.

As expected the response rate was not as successful for the group that was sent the questionnaire. Twenty-nine questionnaires were sent out and seventeen of these were returned. Analysis of the non-respondents did not yield any significant trends. Therefore, out of 67 student respondents, 50 (74.6%) were telephone interviews and seventeen (25.4%) were from returned questionnaires. Overall, with the telephone interviews and questionnaires there was a total response rate of 83% of the available students (excluding those who had withdrawn or were enrolled in two units) or 75% of the original survey group. This response rate, while not ideal, was considered acceptable.

3.6 Developing the survey instruments

A number of research instruments were developed for use in this current study. A search of the literature failed to find suitable existing instruments. Several examples of questionnaires used to measure aspects of distance education students

use and satisfaction with library services were found; for example, Love, 1993 and Bagnell, 1988. However, none were suitable for this research.

The instruments developed were:

- An interview script for the telephone interviews with the students (see appendix 2). This was intended to ensure all the students were asked the same questions. The script was not intended to define all conversation with the student but rather to ensure the same questions were asked in the same way. Variations came in the amount of explanation over and above that specified in the script and responses to particular issues raised by the students.
- A questionnaire based on the same questions so that at least some data would be gathered from those students who had proved difficult or impossible to contact by telephone (see appendix 3). It was acknowledged that the nature of the responses would not be the same. This proved to be the case. Most respondents that completed and returned the questionnaires answered the questions that allowed a simple choice from alternatives but most offered far less in the way of comments than the interviewed students. In spite of this, the data gathered was still considered useful to the research.
- A set of questions constituting a semi-structured interview schedule to be used during the interviews with unit co-ordinators (see appendix 2). These were designed to initiate discussion and ensure that a core of questions was covered during the interviews allowing some comparative data to be available for analysis of both staff and student responses.
- A document analysis recording sheet (see appendix 4). This ensured all the documents were checked for certain elements and ensured any additional items of interest to the research were noted.

3.7 Student interviews

Semi-structured telephone interviews were undertaken of the accessible students enrolled in each of the selected units. The student interviews were conducted by telephone because the remote location of many of the students studying by distance mode made face-to-face interviews impractical. Telephone interviews

also had the advantage of very good response rate when compared to posted questionnaires (see, for example, Fink, 1995 and Baker and Scott, 1995). The ability to tailor the explanations given to the students during a telephone interview, depending on the experiences of the respondents, was useful (see appendix 2).

The interviews were conducted during the latter half of second semester when students were near to completing the units in which they are enrolled. By this time, their information resource requirements should have been clearer to them. In addition, if they were going to, they would have used the Library and Information Service by this stage.

The telephone interviews were preceded by a letter that described the intentions of the research, outlined what the interview would cover and the amount of time the interview should take. The letter also pointed out that participation is voluntary (see appendix 1).

Before the interviews a recording sheet was established for each student. Details about the student such as name, unit and address were entered. A unique number was assigned to the student and entered on the recording sheet. A record was kept on this sheet of any unsuccessful attempts to contact the student. The time and day of the attempt to contact the student was noted so that other tries could be carried out at different times.

When the students were contacted they were asked if they had received the letter about the research and whether they were willing to participate. If they had not received the letter, or did not remember receiving it, the purpose of the research was explained, the nature of what was being asked of them outlined and their co-operation sought. It was again pointed out to all students that participation was voluntary and that refusal would in no way impact on their studies. If they agreed the interview started.

They were first asked questions about supplied readings, textbooks and other information resources used during the course of the unit. The amount of use the students made of these materials and the possibility of completing the unit using only supplied readings and set texts was then explored. Questions about access to

and use of libraries and other information resources were then asked followed by queries about training in library use. Next came questions about information received about Curtin Library services. Suggestions for improvements to the service were then sought. The next set of questions concerned the use of computing facilities including remote access to support their activities in the unit. The last section was designed to find out if the students were undertaking any other units, if they had done any on-campus study in the past, if they were in paid employment and their age within a number of defined broad ranges.

Once the questions were finished the students were thanked, given a telephone number they could contact if they had any further queries and the interview concluded.

One of the most challenging elements in the student interviews was the fact that few of the students separated their experiences of using information resources and libraries from the totality of their experience with distance education at Curtin.

Another concern was the influence of the researcher on the responses from students and staff. The fact that the students are being asked about their use of the service almost certainly influenced the data gathered about their impressions of the service.

3.8 Unit co-ordinator interviews

The unit co-ordinators responsible for the selected units were interviewed in person using a semi-structured interview. Many of the units had one or more tutors involved in supporting the units in addition to the unit co-ordinator. These tutors were sometimes responsible for many of the interactions with the students and frequently marked the student's submitted assignments. This presented a question as to who was the most appropriate person associated with a particular unit to interview. A decision was made to talk to the unit co-ordinator. This person was usually responsible for the design of the unit. One intention of the interviews with the unit co-ordinators was to find out what their expectations were

of the students in relation to that particular unit. It was felt that the person responsible for the design of the unit would best express this. There was an additional benefit in that most of the units surveyed are also offered internally. This allowed the unit co-ordinators being interviewed to make useful comments on the relationship between the experiences of the two groups of students.

The unit co-ordinators were contacted by letter to outline the intentions of the research and to request their participation (see appendix 1). This was followed by contact by telephone to arrange an interview time. All unit co-ordinators contacted agreed to be interviewed although it was difficult to find a suitable time in some instances. The interviews were usually conducted in the offices of the unit co-ordinator although in a few instances took place at mutually agreeable on-campus location. They usually lasted about one hour.

The interviews started with questions about the unit co-ordinator's length of service at Curtin and their experience with distance education here and elsewhere. Details about the unit and its development, content and assessment were then queried. If the unit was also offered internally the opinion of the unit co-ordinator in relation to the comparative experience of the two groups of students was sought. Questions about the student contacts and expectations, information resource use and information literacy were next. The interviews concluded with the opportunity for the unit co-ordinator to make some general comments about their experience of distance education and its support by library and information services.

The semi-structured interviews allowed unit co-ordinators to describe their experiences with distance education and facilitated the retrieval of significant differences in philosophy, approach and expectations.

3.9 Document analysis

After deciding on the units to be included in the study the unit plans and other materials supplied to the students when they commenced the units were analysed. A Document Analysis Recording Sheet was developed for this purpose (see

appendix 4). The Distance Education Section of the Teaching Learning Group at Curtin sends these materials to the students. Therefore, it was possible to gain access to the documentation for all the units from the one source.

The documentation sent to the students was analysed to see what was sent to the students, for example books of readings. The unit plans and guides were then examined for the specification of set texts and recommended reading, references to library services, use, and the need for information literacy skills. Mention of the need for access to computing facilities was noted and any other factors considered relevant to this research were recorded.

3.10 Data analysis

As anticipated several methods of analysis were needed to make use of the data collected.

Statistical Package for the Social Sciences (SPSS) (release 8.00 for Windows, Dec 1997) was used for much of the data gathered during the student interviews. A coding sheet was developed as a guide to entering the data and forty-five variables were defined in SPSS format. An anticipated problem was the questions where respondents could and did choose multiple responses to a particular question. It was decided to use Microsoft Excel (version 5.0c, 1994) as a more appropriate tool to draw scatter plots to record and quantify these responses.

The qualitative data collected during the student interviews was subjected to content analysis using the word processing software Microsoft Word (version 6.0c, 1994). All of the data obtained during the staff interviews was entered onto a recording template in Microsoft Word. The data from the twelve unit co-ordinators was then manipulated using this word processing facility. Each of the responses from the students and unit co-ordinators interviews was coded with a unique number that indicated the person making the response and the unit with which they were concerned. This allowed manipulation of the responses without losing the details of the respondent.

The data gathered from the document analysis were entered into SPSS. Thirty variables were defined for this purpose.

The data, quantitative and qualitative, were then subjected to analysis based on the research questions outlined in the introductory chapter that is:

1. The expectations of distance education students held by unit co-ordinators in relation to reading and information resources when they design and deliver their distance education units.
2. The students perceptions of their ability to complete the units using only their supplied reading and prescribed textbooks.
3. Where the students are obtaining their reading and information resource material.
4. The level and nature of students' use of computers and telecommunications to access the information they need to complete their unit(s).
5. The extent that the students are aware of the range of library resources and services available to them.
6. The factors that inhibit or promote distance education students' use of the Curtin University Library and Information Service.
7. Training students had received in the use of libraries.
8. Suggestions for improvements or changes to library services.

3.11 Ethical issues

This research necessitated the collection of personal information about the respondents. All normal safeguards to ensure confidentiality were followed; students and unit co-ordinators were asked to consent to participation, told they could decline to answer any particular question and were assured of confidentiality. However, some particular ethical issues were of concern during the formulation of the methodology of this research.

The enrolment data needed to contact the students was obtained from the student enrolment system. This information was originally gathered for enrolment and other academic purposes related to that individual student. Permission to use the information for other purposes, such as research, was not obtained at the time it

was gathered. However, this research involved collecting data only from adult respondents, specifically, members of Curtin academic staff and distance education students who were able to give informed, if retrospective, consent.

Two students raised questions as to whether their responses would be relayed to the unit co-ordinators responsible for the student's results in the units. They were reassured on this point. However, this does indicate some students may have been influenced in their responses by their concern for this issue.

Many of the unit co-ordinators expressed opinions and concerns about the processes of distance education at Curtin that they would not necessarily wish to express publicly. Therefore, the issue of confidentiality for this data was of particular concern to the researcher. However, none of the unit co-ordinators concerned expressed concern about this issue. As there were only twelve units in the study and some of the data would make particular unit co-ordinators identifiable, care has been taken in the reporting of information in this study to avoid this problem.

An indication of gender in the following findings and discussion chapters should not be taken to indicate the gender of the particular respondent.

Chapter 4 Academic expectations and student responses

4.1 Demographics of distance education students

The demographics of the students surveyed in this study were analysed to verify that the students who participated in this research are representative of the whole distance education body at Curtin at the time of this survey. They were also matched with the profile found in the literature to ascertain the degree of representation and therefore the ability to generalise, to other distance education institutions offering information resource support for their students.

The figures quoted below for Curtin enrolments were obtained from the University Statistician's Office. It is noted that some of these are slightly at variance with figures quoted in the *West Australian Department of Education Services 1996 Statistics and Issues* West Australian Department of Education Services (Department of Education Services, 1996). This is believed to be a factor of the differing reporting dates.

Total Curtin population

Curtin University had a total student population of 22,759 in 1996. The following table shows the breakdown of this enrolment by gender.

Table 1 Total 1996 student enrolments at Curtin University

	<i>No. of students</i>	<i>% total enrolments</i>
Female	12,023	52.83
Male	10,736	47.17
Total	22,759	100.00

In 1996 Curtin had 1676 distance students which represents 7.36% of the total enrolments.

Level and Gender of enrolments

Nine hundred and fifty three (56.86%) of the total distance mode enrolments were undergraduate students.

Table 2 Total Curtin 1996 Distance enrolments by level and gender

	<i>Male</i>	<i>Female</i>	<i>Total</i>
Postgraduates	275	448	723
Undergraduates	282	671	953
Total	557	1119	1676

The total Curtin distance population is made up of 66.77% female and 33.23% male students. In this research females constituted 64.2% and males 35.8% of the participants. It is considered the survey is representative concerning the gender of the students.

Subject area of enrolments

Table 3 Enrolments by Curtin teaching division

<i>Division</i>	<i>No. undergraduate distance students</i>	<i>% total undergraduate distance enrolments</i>	<i>% surveyed students</i>
Business	266	27.9%	49.3%
Health	177	18.6%	25.4%
Humanities	472	49.6%	25.3%
Science and Eng.	009	00.9%	00.0%
Other (Muresk etc)	029	03.0%	00.0%
Total	953	100.0%	100.0%

Analysis of the spread of total and surveyed distance enrolments across the teaching divisions at Curtin shows the survey was over represented by students from the Business and Health areas and under represented by Humanities. In 1996, the Division of Science and Engineering had only two undergraduate units that were available by in distance mode. These were not included in this study.

Age of students

The following table shows the numbers and age ranges of the undergraduate distance education students at Curtin during 1996. This is the population of students that are the subjects of this research.

Table 4 Total Undergraduate Distance education students at Curtin in 1996 by age

<i>Age</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>	<i>Percent</i>
15-24	064	142	206	21.62
25-29	049	122	171	17.94
30-49	158	378	536	56.24
50-59	011	027	038	03.99
60-over	000	002	002	00.21
Total	282	671	953	100.00

The following table shows the age groups and gender of the students included in this research.

Table 5 Distance education students in this study

<i>Age</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>	<i>Percent</i>
15-22	01	03	04	06.0
23-29	04	15	19	28.4
30-44	13	20	33	49.3
45-64	06	05	11	16.4
Over 64	00	00	00	00.0
Total	24	43	67	100.0

Analysis of the undergraduate distance population at Curtin shows that 74% of the students are aged between 25 and 49. In this research study, 77.7% of the students were aged between 23 and 44. None of the students were aged over 64 years of age.

Other demographic factors

Ninety two percent of the surveyed students were studying one or two units, 30 (44.8%) are taking one unit and 32 (47.8%) taking two units. No students were undertaking three units and only two students were doing four units.

Only three students were not studying all of their units via the distance mode. One student was taking a unit at the Western Australian School of Mines in Kalgoorlie; another was studying at their local TAFE College and the third student considered he lived close (80kms from Perth) enough to take one unit internally.

Almost two thirds of the surveyed students (62.7%) reported that they had not done any previous on-campus study at tertiary level at the time of the survey. Only four (6%) of the surveyed students were not in paid employment. Most of the students (67.2%) were in full time employment and the balance (26.9%) in part-time paid employment.

Summary of demographics

Long (1994) argues that Australian off campus students are more likely to be female, older than on-campus students and more likely to live in remote areas. Stasch (1994) agrees and further describes them as being adults, aged between 25 and 35, in full time employment, and studying part time.

The students interviewed in this research were more likely to be female and aged between 23 and 44. They are also likely to be in full-time paid employment. The distance students were predominantly studying part time and taking one or two units. It is unlikely that they will have done any previous on-campus tertiary study. Therefore, the students in this research are representative of the profile found in the literature.

The students in this research study are broadly representative of the total undergraduate distance education population at Curtin University. However, students in this study were over represented by students from the business and under represented by students from Humanities.

4.2 Expectations

The unit co-ordinators and students were asked a series of questions designed to answer the following two research questions:

- What are the expectations of distance education students held by unit co-ordinators in relation to reading and information resources when they design and deliver their distance education units?
- Do the students undertaking these units feel they are able to complete the units using only their supplied reading and prescribed textbooks?

It is assumed that these expectations and the students' responses to these expectations will determine the nature and level of the information resource support the students need.

4.3 Supplied reading and set texts

During the interviews with unit co-ordinators, they were asked a series of questions relating to their expectations of the distance education students (see appendix 2). The questions concerned the amount of reading they expected their students to do. The unit co-ordinators were asked whether their students were expected to find references to information resources for themselves and about their information literacy skill expectations of the students. The students were asked if they felt that they could satisfactorily complete the unit using the supplied readings or the supplied reading and the set texts.

Questions about the expectations of students were prefaced with questions about responsibility for the original design of the unit. It was felt that if the unit co-ordinator was not responsible for the design of the unit their personal expectations could differ from those expressed in the unit plan and materials. Ten out of the 12 unit co-ordinators indicated that they were responsible for the present design of the unit in question. Seven of the unit co-ordinators also indicated that the materials sent to distance students were designed especially for use by distance students. The two unit co-ordinators responsible for delivery of units that they did not design indicated they were planning to rewrite the units as soon as possible.

None of the unit co-ordinators felt the students could satisfactorily pass their units using only the supplied materials. However, fifty percent of the unit co-ordinators (6) felt that it was possible for their students to pass the unit satisfactorily using only the supplied reading and the set text(s). Indeed, for some this was an expected or necessary part of success in the unit. As one said, "The students are not expected to search for materials. They find the textbook confusing enough without going to further materials. I don't encourage this at all." Another took what he saw as a more positive view of the merit of self-sufficiency of the unit. He expected students to read everything they are supplied with plus the textbook. The energies of the students and unit co-ordinator could then focused on the subject content of the unit.

Responses

The students were asked a series of questions relating to the information resources they needed in order to complete the unit to their satisfaction. The students were asked to indicate what reading and other materials they received when they commenced the unit. 89.5% of the students indicated they received a book of readings. They were asked about their level of use of these materials. Eighty-eight per cent of the students made moderate to extensive use of these materials. Therefore, 12% of students made little or no use of the reading materials supplied to them on commencing the unit. These students were from a variety of units with no apparent overlap.

Table 6 Use of supplied reading

<i>Amount of use</i>	<i>No.</i>	<i>Percent</i>
	<i>of students</i>	
Extensive	37	55.2
Moderate	22	32.8
Little	06	09.0
None	02	03.0
Total	67	100.0

The students were asked if they could complete the unit using only the materials supplied to them. In other words, they did not need any other information resources including a set text or texts.

Eighty-six per cent of the students (58) felt they could not complete the unit and pass to their satisfaction using only the supplied materials. Some of the remaining students qualified their positive response with concerns about needing to be content with just passing or a lack of personal satisfaction. A few others indicated they had some advantage they felt would allow them to pass without additional resources such as previous work or study in the same field.

The students were asked about their level of use of their prescribed textbooks. They were also asked if they felt they could complete the unit and pass to their satisfaction using the supplied materials and the textbook or books specified for the unit. Eighty-five per cent of students indicated they made moderate or extensive use of their textbooks.

Table 7 Use of textbooks

<i>Amount of use</i>	<i>No. of students</i>	<i>Percent</i>
Extensive	46	68.7
Moderate	11	16.4
Little	2	3.0
None	8	11.9
Total	67	100.0

Thirty-two (47.8%) of the students indicated they could complete the unit to their satisfaction using only the supplied reading and set text(s).

Table 8 Able to complete using supplied reading and set text(s)

<i>Ability</i>	<i>No. of students</i>	<i>Percent</i>
Yes	32	47.8
No	29	43.3
Possible but difficult	03	04.5
Maybe but did not	01	01.5
Not applicable	02	03.0
Total	67	100.0

Some of the students who indicated they could complete the unit using the supplied reading and text(s) offered comments that indicated their concerns lay elsewhere. One student commented “Yes, no additional reading resources are needed, the problem is lack of contact with other students and my motivation.”

Others indicated they felt they had little choice, “I only had my textbook because in Saudi Arabia there is no library or university that foreigners can use. I hope to pass just by using my textbook.” Still others indicated they realised “You could pass if the unit is well resourced but you would get better marks using more materials.” Others qualified their answers with “Yes, maybe, but it rather depends on what is an acceptable result for you.”

The students who felt they could not pass the unit to their satisfaction sometimes indicated they had specific needs “It would be very hard to pass without additional books. The guide does not have much for the health side of the unit. Theories of personality are needed. I was told that a new unit and materials would be developed.” Some felt the amount of subject material to cover made adding any other expectations to the unit unreasonable.

Analysis of the unit plans sent to the students found that all units cite at least one set text in their unit plans. Of these 50% cite one set text title.

Table 9 Number of set texts cited in unit plans

<i>Number</i>	<i>Frequency</i>	<i>Percent</i>
1	6	50.0
2	2	16.7
3	3	25.0
4	1	08.3
Total	12	100.0

The students and unit co-ordinators were in almost complete agreement about the necessity for more information resources than the materials that are supplied to the students when they start a unit. Both groups felt more materials, at least the set texts were needed to complete the unit and pass to their satisfaction. This conclusion is also supported by the analysis of the documents, all of which cite set texts. It is therefore a

reasonable assumption that all students will at least need access to a copy of each of the set textbook(s).

As previously noted, none of the unit co-ordinators interviewed felt their students could complete the units with just supplied reading. There was a high degree of correlation between the expectations of the unit co-ordinators and the students as to whether they could complete the units to their satisfaction using the supplied reading and textbook(s). Fifty percent of the unit co-ordinators and 47.8% of the students felt this was possible.

This element of “to their satisfaction” is an important one for the students. Many students commented on the difference between being able to “scrape by” and achieve a satisfying result. This may be a manifestation of the maturity of the students. This distinction was also noted by many of the unit co-ordinators who also acknowledged that for many of their students just passing was not good enough. Several drew a distinction between what was possible and desirable. As one unit co-ordinator staff member noted, “It is possible that the students could pass using only the texts and supplied material but I know for many of them this is not enough.”

Several unit co-ordinators commented on the strength of the text or texts used in their units. This gave them confidence to rely on the text and require little in the way of additional reading. Some were adamant that the self-contained nature of the course was important particularly in the distance environment. However, one unit co-ordinator commented that even though the unit was designed to be self-contained the students were asking for more information resource guidance,

...The materials are all designed to make the unit self-supporting. I think it is only at graduate level the students need to do research. Nevertheless, I have had queries about how to access library materials by subject. The students reported feeling they need more materials but don't know what to ask for.

The assumption is that students will purchase their set texts. This is not always simple, as these can be difficult or time consuming to obtain at a distance. In addition, one student reported that the incorrect edition of their text was cited in the unit plan and their purchase was useless.

The Off Campus Library Service always attempts to have copies of the textbooks available for the students but obviously there is a large amount of competition for the few copies. Several suggestions from students concerned having more copies of the textbooks and other high demand material available to them through the Service.

4.4 Other reading and information resources

Eight out of twelve unit co-ordinators (66.6%) said they expected that the students could satisfactorily complete the unit using the supplied material, set texts and the other specified reading in the unit plan. The students are not expected to find references to information resources for themselves. One unit co-ordinator's comment that was typical of the responses was "I expect them to read the book of readings, set texts, the guide and plan and most, if not all, of the journal articles cited. The students can then expect to get about 60% for the unit". These expectations were often grounded in their past experience. They spoke repeatedly of the need to be realistic. Two even suggested they "steer the students away from extra resources and suggest that they look at past exam papers if they want more examples."

Two co-ordinators made a clear distinction between needing to find references for themselves and actually reading the material. They expected the students to find references to further materials to compile a bibliography but stressed the students would not need to obtain the materials. They felt that this distinction was a reasonable approach especially with distance study.

Analysis of the documents sent to the students revealed 75% (9) of the units provided specific references to reading beyond the supplied reading and set text(s) in their unit

plans. The balance made no mention of any reading other than the supplied reading and set texts. Ten out of the twelve make no mention of the need for students to find references to information resources or other reading for themselves.

Some of the unit co-ordinators said their students needed resources such as videos that could be obtained from the Library and Information Service. They commented on the logistical difficulty for the library of prescribing video titles that all distance students need to see at a certain stage in the unit.

The students were asked a question about what information resources, in addition to the supplied material and set texts, they considered they needed to complete the unit they are doing. Seven students replied that they felt they did not need any other resources. Therefore, although 36 students could, in theory, pass without using any information resources other than those supplied plus their set texts, only seven felt they did not need any other resources. The other resources the students considered they needed are shown in table 10.

Table 10 Other resources needed by students

<i>Resource</i>	<i>No. of students</i>
Computer based resources	19
Books	33
Audio-visual materials	04
Reference materials	04
Journal articles	22
Indexes and abstracts	01
Other	04
Did not answer	09

(Note: students could indicate more than one additional resource.)

Some of the needed resources were often going to be complicated to obtain when studying at a distance. As one student remarked, “I need 3 dimensional models and need hands on contact with resources not just print material. I also need to talk to fellow students and lecturers.” One of the unit plans refers to the use of cadavers.

The expectations of many of the unit co-ordinators had been modified in light of their experience with students. This difference between the articulated expectations and what the unit co-ordinator felt was desirable was true not only of their distance students. There was recognition of the particular difficulties of holding a set of unrealistically high expectations of their distance mode students.

The need to make the units of study as self contained as possible was seen as desirable not only for the students but also for the unit co-ordinators. They felt it was important to ensure the students read at least a core of material that covered the subject. Otherwise, the unit co-ordinators would have to rely on the students, who often had few resources, to identify, select and use resources of adequate quality to cover the subject in sufficient detail.

The fact that some staff members actively discourage their students from finding additional information resources means that the Library and Information Service must work with the University bodies charged with responsibility to support teaching and learning activities. The Library needs to talk to the unit co-ordinators about the merit of encouraging the skills requiring the students to find their own references. We would also need to demonstrate that this is possible for their distance students. Ways of doing this whilst ensuring coverage of the essential subject coverage must be explored.

The use of videos to support the resources in a unit has the same implications as the supply of texts. It is difficult to make sure all students can borrow a copy of needed video title at the time they need them. Given that some video titles are extremely expensive, (the library frequently purchases videos that cost over A\$1000) it is not going to be possible to hold sufficient copies. The same applies to the more complicated realia such as three-dimensional models. Comments by the unit co-ordinators shows that they are aware of some of these challenges. There is optimism that some of these difficulties could be overcome in the future with the use of the Internet to access video material.

4.5 Information literacy expectations

The unit co-ordinators were asked about their information literacy expectations of the students. The questions requested details the information literacy expectations of the students when they commence the unit and skills it is anticipated the student should acquire during the course of doing the unit.

Some unit co-ordinators expected the students to have, what they described as, a basic level of information literacy such as the ability to compile a bibliography and cite correctly when students start the unit. Others were more pessimistic, again, often because of experience, "I assume very little and I am usually right." One noted, "I expect a reasonable level of writing skills and referencing. However, my expectations on the level of referencing skills are frequently overly optimistic."

Some of the co-ordinators' expectations were grounded in prerequisite units particularly if the unit in question was a second or third year unit. One unit co-ordinator was explicit in her expectations of library use and information literacy and expected students to be able to use the library and to identify, evaluate and synthesise the material. This unit co-ordinator pointed out that internal students have information literacy sessions arranged for them and noted how much harder it is for the distance students.

The information literacy skills unit co-ordinators anticipate students will acquire during the unit depends on the nature of the unit. Some argued that the establishment or development of information literacy skills was not a focus of their unit. Others felt that there was too much subject content to cover and that this allowed little opportunity for other concerns such as information literacy. They were not always entirely happy with what they saw as a pragmatic decision to exclude skills that are more generic. For others, developing information literacy skills was an integral part of the unit and their expectations of the students. "This is an important aspect of this unit. It is also vital that the students come away from this unit understanding that learning is a life long task and that being equipped with information literacy skills is vital in that process."

Analysis of the documents supplied to the students found that only two out of the twelve unit guides or plans had any mention of the need to have or develop research or information literacy skills. There was an inference by some unit co-ordinators that it is someone else's responsibility to develop generic skills such as information literacy in the students. This has implications for the Library and Information Service.

There is a move to develop a standard definition of information literacy for all Curtin University students, including distance education students. After scanning the professional and academic literature one Curtin Division has adopted a definition for all their undergraduates, as follows:

A student who has successfully completed an undergraduate degree with the Division of XXX will be information literate. We take this to mean the student will be able to:

- Recognise the need for information
- Understand how information is organised
- Identify potential sources of information in a variety of formats
- Develop appropriate search strategies
- Access the needed information
- Select from the available information
- Organise the information for their use

This statement of information literacy expectation is at present far from reality for all Curtin students, especially those studying at a distance.

4.6 General expectations of the unit co-ordinators

The unit co-ordinators were invited to comment on the experiences of their distance education students in comparison to those of their internal students with particular reference to information resources and reading.

Several unit co-ordinators commented on differences in the characteristics of the two groups of students. “It is hard to compare but most (students, internal and distance) will succeed if they are motivated. Most (distance students) are both employed and motivated.” Another noted, “distance education students seem to fall into two groups. Either they struggle and drop out or they are highly motivated, mature students who do well.” Yet another felt that both groups do reasonably well. Much of the internal delivery of his course is designed for Internet delivery and so he felt that at a distance it need not be very different. He acknowledged the crucial difference is the lack of peer contact. He has the impression that a different group of students were doing his unit by distance studies, they were older, more motivated.

Others pointed to a degree of similarity of outcomes for the two groups although this was often arrived at through the operation of different factors. As one explained,

The written work of the distance students is much better, they get more practice but on the test, the internal students do better. I suspect this is because they can talk amongst themselves before the tests and pick up on things they don't know from the others.

Some unit co-ordinators noted what they considered a pragmatic modification of their reading expectations of their students. "My expectations match the student's practice. I have modified my expectations with practice; my initial expectations were too high. The students are easily confused. This is dangerous at a distance and it may not be picked up early enough." Some unit co-ordinators expressed clear disappointment that; "The level of reading by my students almost never meets my expectations but then neither does that of the internal students."

Chapter 5 Student information resources

5.1 Introduction

The students and academic staff were asked a series of questions in order to answer the following research questions:

- From where are the students obtaining their reading and information resource material?
- To what extent are the students aware of the range of library resources and services available to them to support their studies?
- What factors promote or inhibit distance education students' use of the Curtin University Library and Information Service?

It is vital for the people with responsibility for providing information resources and services to distance education students to ask where the students seek information. Students can not take advantage of the services provided to support their studies if they are unaware of the services. It is also important that the service providers understand any factors that encourage or discourage student use of the service.

5.2 Access and use of libraries

The students were asked questions about which libraries, including Curtin, they had access and which of these they had used to support the unit they were undertaking.

Curtin library was the library to which most students reported having access and is the most used library. Over three-quarters of the students (77.6 %) reported having access to Curtin Library and 62.6% of students had used the service. After Curtin the local public libraries are the ones to which most students have access (59.7%) and had used (34.3%). Other important libraries to which the students have access and use are libraries in the workplace (28.3% access, 19.4% used) and other academic libraries in the students' local

areas (25.3% access, 23.8% used). The students that have access to a local academic library were the ones most likely to use the resource; 16 out of 17 students that had access used it. One student reported having no access to any type of library.

Table 11 Library access and use

<i>Libraries</i>	<i>No with access</i>	<i>% with access</i>	<i>No used access</i>	<i>% used access</i>
Curtin	52	77.6%	42	62.7%
Local public	40	59.7%	23	34.3%
Workplace	19	28.4%	13	19.4%
Local academic	17	25.4%	16	23.9%
TAFE	08	11.9%	04	6.0%
None	01	1.5%	01	1.5%

Note: Students could indicate multiple responses.

Percentages are rounded to one decimal place

A few of the students that had access to and had used Curtin (4) were able to use the Library service on personal visits. They commented how useful this was although some considered it a long way to come. One student indicated he felt he could not manage without these personal visits. Another suggested that without personal visits he would not know what he could ask for such as copies of past exam papers.

The students who use sources other than Curtin made critical observations on the usefulness of this. Some students that made use of their local TAFE library found this was not entirely satisfactory as they could use the materials in the library but were not permitted to borrow materials. Three students who tried to use their local public library expressed some level of dissatisfaction either with a lack of relevant information resources or qualified help.

In contrast, students that used a library at their place of employment stressed how important this was to them. They mentioned not only access to formal published resources but also access to grey literature such as examples of reports and

correspondence. Experienced colleagues were also mentioned as a valuable information resource.

Some of the unit co-ordinators commented on the need for their students to access not just Curtin Library but also other libraries. They referred their students to other libraries that had useful holdings in a particular subject area not considered adequately covered at Curtin. They did not comment on any difficulties students may have in accessing the resources and services in these libraries. One unit plan actually suggests students use a local library in preference to Curtin's. The unit co-ordinator responsible for this unit felt the students would find them easier to use and often have more materials that are relevant to their studies.

5.3 Access and use of other information resources

The students were asked to indicate information resources, other than libraries, to which they had access and which of these they had used.

Table 12 Other resources access and use

<i>Other resources</i>	<i>No with Access</i>	<i>No used access</i>
Friends	11	10
Colleagues	5	5
Internet	24	19
Own collection	15	15
None	27	27
Total	82	76

Note: students could give multiple responses

The Internet was the resource to which most students had access (35.8%). However only 28.3% of all students used that access. The distinction between access and use is a critical one. All students that had access to a collection of their own had used it. 40.2%

of students reported having access to no other information resources. The student that reported as having no library access also reported having access to no other information resources.

During the interviews with unit co-ordinators two made it clear they considered their students would have to use resources beyond Curtin or any other library. They were expected to seek out information from a wide range of sources such as television, radio, private and government organisations and the Internet.

Importance of access to library services

The students were asked about the importance of being able to access any library and Curtin Library. Only 16.4% (11) students felt that access to any library was crucial, but 86.6% (58) of the students rated it as helpful or above.

Table 13 Importance of access to any library

<i>Importance</i>	<i>Frequency</i>	<i>Percent</i>
Crucial	11	16.4
Important	27	40.3
Helpful	20	29.9
Nice but not necessary	7	10.4
Irrelevant	2	3.0
Total	67	100.0

By comparison, a smaller number 62.6% (42) of students rated access to Curtin Library Service as helpful or above. Of these 10.4% (7) felt it was crucial. Therefore, 25 (38.4%) of students considered access to Curtin Library and Information services as not necessary or irrelevant to their studies.

Table 14 Importance of access to Curtin Library

<i>Importance</i>	<i>Frequency</i>	<i>Percent</i>
Crucial	07	10.4
Important	22	32.8
Helpful	13	19.4
Nice but not necessary	19	28.4
Irrelevant	06	09.0
Total	67	100.0

5.4 Use of Curtin Library and Information Services

The students were asked which Curtin Library and Information services they had used to support the unit they were studying. The most heavily used service was the book loan facility closely followed by the journal and book chapter photocopy service.

Table 15 Curtin services used

<i>Curtin services used</i>	<i>No. students used service</i>
Book loans	30
Photo copy Jul articles/book chap.	23
Photo copies of exam papers	13
Literature searches	01**
Inter-library loans	01*
Online services	02
Other	04

* The inter-library loan figure may be misleading. It may not always been apparent to the student that the book they requested had been supplied through an inter-library loan.

** The low use of the literature search facility could be related to two factors. This aspect of the service is promoted even less than the rest of the service. It is not provided by the Off Campus Library Service but by another section of the Library and Information Service. In addition, there is a perception by members of the Off Campus Library Service that as knowledge about and access to online databases grows fewer students will call on this service.

Demand for the some of services through the Off Campus Library Service, especially photocopies of journal articles, literature searches inter-library loans and copies of past exam papers will change, as more services are available via the World Wide Web. As more students have access to these facilities through this medium, the nature of their needs will change. The students will need much more information about what's possible online, how to access and use the online services and should need less direct delivery.

Contact methods

Students were asked to indicate the methods they had used to contact the Off Campus Library Service.

Most of the students used a single method, post or the telephone, as indicated below. Those students that used multiple methods used a combination of fax and telephone in all cases except one where the student reported using a combination of fax and post. No students said that they used email or the home page of the Library on the World Wide Web. Several of the students remarked on how fast and useful they found being able to contact the service by fax. One student that indicated she did not use the Curtin Library Off Campus Library Service indicated a contact method.

Table 16 Method of Contact

<i>Method of contact</i>	<i>No. of students</i>	<i>Percent</i>
Multiple methods	06	09.0
Post	12	17.9
Fax	04	06.0
Telephone	17	25.4
Other	03	04.5
Email	00	00.0
Home page on Web	00	00.0
Not applicable	25	37.3
Total	67	100.0

Information about the service

The students were asked a series of questions designed to find out the level of awareness amongst the students of the Curtin Off Campus Library Service. The students were asked about information they had received about the service and any previous on campus study.

Sixty students (89.6%) indicated they had received printed information about the Curtin Off Campus Library Service. Seven students reported not receiving any information at all.

Comments from the students who indicated they did not receive any information were tempered with a degree of uncertainty. They may have received information but could have “just filed the stuff away.” Others suggested they could have missed it in the deluge of material received on commencing their units, “it all came in a flood and got lost”.

The students that indicated they had received information about the Off Campus Library Service were asked how and when they received that information. Fifty-nine of the students indicated they received the information on enrolment or on starting the unit

through the post. The other student received the information when he contacted the library and asked for it.

Most students (68.7%) felt more information about the Off campus library service would be useful. Over a quarter of students (26.9%) felt that more information would not be useful to them.

Table 17 Would more information be useful

<i>Opinion</i>	<i>Frequency</i>	<i>Percent</i>
Yes	46	68.7
No	18	26.9
Unsure	02	03.0
Other	01	01.5
Total	67	100.0

Some students that did not consider they required any more information felt they had benefited from information they had received in the past and now had sufficient. Another felt that as a past library studies student she knew enough to use the service. One student questioned the use of having more information if he was, as he saw it, not eligible to use the service.

Some of the students who would like more information qualified their answers. Extra information would only be useful if received early enough in the semester. It would also need to be separated from the other information received at the start of the semester. The information about the service had to be relevant “more information would be useful but stuff about irrelevant services is worse than useless.” One student suggested the Off Campus Library Service staff contact each student by telephone to outline what services and resources are available.

Others were keen to have more information about resources available to them on a particular subject. Several students requested unit specific references, preferably a list of

additional readings. Four students felt an indication of turnaround times would be useful when planning their assignments.

One student pointed out the serious consequences of not having enough information, “Yes more information is vital, I did not ask enough questions and so I failed the unit when I did it last year.”

Some of the students reported that the best way to obtain information about the service was to ask the people in the service. This has a number of difficulties. First, it assumes that they know the service exists and they believe they are, or at least may be, entitled to use the service. Second, there are limits on the amount of time the staff in the Off Campus Library Service can spend explaining the service to each student. Therefore, any increase in the personal delivery of this type of information may not be possible.

A number of suggestions received during the interviews with students were for existing services (see below). In addition, some of the comments from the students indicated a lack of awareness about the extent of services already available to the students. These factors indicated a lack of information about the services available to the students. If, as many students reported, it was “lost” in the large amount of information sent to them when starting the unit then more effective ways of disseminating this information are needed.

5.5 Factors affecting use of the Off Campus Library Service

The students were asked a series of questions about the Curtin Off Campus Library Service. These centred on the service, the people and the resources.

The service

Of those students that had used the Curtin Off Campus Library Service (total = 41) 37 (90.2%) rated it as good, very good or excellent. However, the preponderance of responses was towards good (14) rather than excellent (6).

Table 18 Off Campus Library Service

<i>Opinion</i>	<i>Frequency</i>	<i>Percent</i>
Poor	01	01.5
Reasonable	03	04.5
Good	14	20.9
Very good	17	25.4
Excellent	06	09.0
Not applicable	26	38.8
Total	67	100.0

Many students commented on particular aspects of the Curtin Off Campus Library Service. An issue for several of the students was the need to schedule their requests during the semester. They were aware that delivery time for requests depends on whether the material is out on loan. Some students had attempted to indicate a degree of urgency but felt this made little difference to when they received the requested items.

Time was not only a factor in the supply of books but also in returning the materials. Three students requested longer loan periods. They felt that by the time they received the information resources and used them the loan periods had finished. One student observed that he made a habit of requesting information resources several weeks before it was needed so as ensure it would be available. Consequently he sometimes received the item earlier than anticipated and by the time the item was needed it was due to be returned. Two students had attempted to outline a schedule on the request forms in an attempt to stagger delivery of the required material (both books and videos). They were disappointed that little or no notice appeared to have been taken of these requests.

The time taken to fulfil requests was a problem with several of the students. Indeed, two students indicated that delivery time was the reason they no longer used the service. One student felt the delivery time was acceptable but literature searches took too long. He expressed frustration at being unable to do this themselves.

Some of the students and staff offered positive comments about the Curtin Library Service provided to distance education students. One student remarked, “this is the only part of the off campus study organisation that seems to work as it should”. One unit coordinator commented at the end of the interview, “you know the Off Campus Library Service is good and well respected by the students”.

The people

Of the 41 students that had used the Off Campus Library Service, no one rated the Off Campus Library Service people as very poor or poor. Thirty people rated them very good or excellent.

Table 19 Off Campus Library Service staff

<i>Opinion</i>	<i>Frequency</i>	<i>Percent</i>
Reasonable	03	04.5
Good	08	11.9
Very good	20	29.9
Excellent	10	14.9
Not applicable	26	38.8
Total	67	100.0

The students were particularly warm in their comments about staff in the Off Campus Library Service. The staff were described as “very helpful” “efficient” and in one case “lovely”. A student noted “The people are very helpful and try to sort out problems but are very busy. I don’t like to take up too much of their time but need to ask questions.” Some of the students reported being reluctant “to bother” busy library people.

The resources

None of the students that had used the Off Campus Library Service rated the resources available to them through the service as very poor. One felt they were poor. Twelve

students thought the resources were very good or excellent. Most students thought the resources were reasonable or good.

Table 20 Off Campus Library resources

<i>Opinion</i>	<i>Frequency</i>	<i>Percent</i>
Poor	01	01.5
Reasonable	09	13.4
Good	19	28.4
Very good	08	11.9
Excellent	04	06.0
Not applicable	26	38.8
Total	67	100.0

Some students reported difficulties with information resources that were in the collection but not available for loan. These were usually in reserve, the closed collection or reference items.

Others were concerned about material being in high demand and consequently hard to obtain when needed. The suggestion offered was that more copies of set texts or any high demand material be included in the collection. One student acknowledged the difficulty in predicting which resources to duplicate and what could be considered sufficient copies.

One of the unit co-ordinators commented that students sometimes reported difficulty in accessing needed information resources. The comments related to specific journal titles. She made the observation that this even more of a problem with internal students who access the databases and find references to publications the Curtin Library does not hold.

Why the service was not used

Students that had not used the Curtin Off Campus Library Service were invited to comment on any reasons for this. Nine students (13.4%) indicated that they considered it

unnecessary to use the Curtin Library Service and eight of these indicated that they could complete the unit using the supplied reading and set text(s). (See Chapter 5, Academic expectations and student responses). The other reasons offered by the students were that they either did not know about the service (5) or were concerned with aspects of the service such as speed or difficulty of use (8).

Table 21 Off Campus Library Service: Reasons for non-use

<i>Who not used</i>	<i>Frequency</i>	<i>Percent</i>
Public library easier	01	01.5
Not necessary	09	13.4
Did not know available	05	07.5
Too complicated	03	04.5
Too slow	05	07.5
Kalgoorlie College very good	01	01.5
Have to pay	01	01.5
Not applicable	41	61.2
Missing. Did not answer	01	01.5
Total	67	100.0

Other factors in non-use of the Off Campus Library Service

Some students were unaware or unclear as to whether they were eligible to use the service or aspects of the service. Some believed that because they live interstate or overseas they could not use all or parts of the service. Several felt they could request photocopies of journal articles but could not borrow materials. One lamented that as a “correspondence student” he was not eligible to use the service.

There was also some confusion reported over whether students that live just outside the metropolitan area are permitted to use the service. It appears that sometimes they have

been told they are eligible for the service and at other times the reverse. Both students that referred to this problem live 70-80km from Perth.

Some students considered the costs involved in using the service were too great. There was a perception that the Library would only pay the postage costs one way and the students could not afford the return cost. Another student who at first said he was unaware of the Curtin Library Off Campus Service “oh yes but you have to pay.” when some of the services were described (see Chapter 1, Introduction, Costs to students).

Many students knew about the existence of the service but not what it could offer them. Some of the comments from the students indicated a lack of awareness about the extent of services already available to the students. This question is tied to the information the students receive about the service. If, as indicated, many students reported that it was lost in the large amount of information sent to them when starting the unit then the significance of this information for them will also be lost.

Seven out of the twelve unit co-ordinators (58.3%) indicated that they did not discuss library use with their students at anytime during the unit. Some of those that did mention library use with their students discussed library use in general rather than the use of Curtin Library.

One frustrated student complained about not receiving answers to letters sent to the University. She requested “someone, anyone, act as a contact to point me in the right direction” She reported being told different things by different people about the same questions. When asked to elaborate, it became clear she had sent letters to the unit co-ordinator asking a series of questions, some about the particular unit, some about administration issues and some about the library service. The questions relating to anything other than the unit were not answered.

5.6 Students' previous on-campus experience

Forty-two (62.7%) of the students had done no previous on-campus study. Analysis of the responses of the students with no previous on-campus study to the question about the usefulness of more information (see above) found that 31(73.8%) of these students considered more information about the Library's service would be useful.

One student commented on the difference the experience of on-campus study and an understanding what is possible makes to off-campus study. This student felt distance study would be impossible without an introduction to university libraries via internal study.

If a student has never experienced study in the on-campus mode, he or she may not be aware of the sorts of library support that are available. They may be unaware of how much the experience as a distance education student differs from that of an on-campus student. For some students that had the advantage of prior on-campus study this made using library facilities easier. They could conceptualise the organisation of the service and knew how to get help when necessary. For other students this increased familiarity magnified the feelings of frustration. These students were even more acutely aware of what is possible with an on-campus service and what was perceived to be possible, or impossible, in their present circumstances.

5.7 Students' suggestions for improvements

The students were invited to make suggestions for improvements in the Off Campus Library Service. The suggestions have been grouped into several categories that reflect whether the suggestions were for services and resources already available to these students. Suggestions were also received for services and resources that could be considered outside the province of the Library and Information Service. If the same

suggestion was made several times this is indicated. Where ever possible the student's own words are used.

Since the time of this survey, the Library and Information Service have implemented some of the suggestions received during this research. Some others are being planned for implementation as soon as resources or technology will allow.

A number of suggestions were received from students for services that already existed at the time of this research. These include a need to access to database searches via the Internet (suggested four times), a facility to allow faxed requests, extension of the service to users outside the metropolitan area and interstate students, making past exam papers and loans of book available and a literature search service.

The suggestions for these additions to our services reflect the inadequate dissemination of information to students about the services available to them.

Improvements to existing services

These suggestions concerned requests for improvements to services or resources that the person making the request had used but felt could be better.

- Quicker supply time (requested four times).
- Have more copies of in demand texts as the time to supply the books if they are already out on loan to another student (requested twice).
- Supply information about whether I can access the catalogue from my local public library if they get the Internet.
- Give me more information about what is already available.
- Give us information on how to access CD ROM services.
- More databases should be added, especially full text.
- Better web access to services and more information about how to access via the web. The Off Campus Library Service page is impossible to find.
- Simplify service and rules.
- The video collection is dated, needs urgent updating and expanding.

- Improve the print quality of photocopies. The photocopies supplied are small and hard to read and the print quality is not good.
- Find a way to speed up literature searches, I would like to be able to do this myself.
- Make the information supplied about the library on enrolment stand out from all the other information supplied. It gets lost.
- Big signs in the Library and outside saying where the Off Campus Library Service is so that personal visitors can find it.

Many of the suggestions for improvements to aspects of existing services call for more information. This aspect needs urgent attention. The level of students' lack of knowledge of existing services at Curtin was one reason behind their attempts to become self sufficient through the use of public libraries, bookstores, borrow from friends, colleagues.

Additional services

The following are suggestions received for services that were not offered at the time of this research.

- 008 number would be useful (suggested seven times).
- Distance education students should be able to borrow from all other universities and TAFE libraries (suggested five times).
- A catalogue on floppy disk, CD-ROM or hard copy to purchase (suggested three times).
- A printed video catalogue would be useful (suggested three times).
- Library to provide a subject specific list of relevant books, articles and journals etc. sent at the start of the unit (suggested twice).
- After hours staffing of the off campus service would be good so that I can get in touch after I finish working.
- Information about what to ask for in the way of modem, computer, software etc.
- I think you should make available access books in full text and allow down loading of chapters as needed.

- It would be good if Curtin Library could offer guaranteed overnight airmailing mailing of books or photocopied materials if the student is willing to pay.
- I think Kalgoorlie students should be able to access the Curtin Library through computers at the Kalgoorlie College Library.
- Make exam papers available on the Internet.
- Put the Curtin fax number and email address on the Curtin home page with the telephone number.
- I would like an 1800 number to use with my modem to access remotely at the cost of a local call. It will too expensive especially from South Headland even when I have the equipment.
- Could the Library contact students by telephone and explain what's possible.
- You need a way of time tabling the requests. So that if I know at the beginning of semester what I am going to need I can place the requests for the whole semester and I will know I am going to receive the things when they are needed.
- A way of accessing reference material would be good.
- I would like an explanation on how the library service works in relation to the Teaching Learning Group distance education people.

The following services are now offered to the distance students:

Exam papers are available on the World Wide Web.

Access is available to the Curtin catalogue from the Kalgoorlie library.

The fax number is on web page.

A range of reference sources is available via the web pages of the Library.

The Off Campus Library Services has an after hours telephone service.

The Curtin Computing Centre offers advice on the equipment needed for remote access.

Co-operation between the Library and unit co-ordinators

- Could the lecturers produce a bibliography on my topic?
- Have a Dewey range indication for libraries not just Curtin in the unit plan.
- Include keywords in my unit plan. This will allow me to do better searches.

The issue of whether a definitive list of readings is desirable will also have to be considered. Undertaking searches for themselves may enhance the student's information literacy skills. All of these suggestions are possible given a higher degree of co-operation between the unit co-ordinators and the Library and Information Service. It would need the unit co-ordinators to acknowledge the merit of the suggestions and a willingness to undertake some rewriting of their unit plans. The library would need to talk with the unit co-ordinators to understand the subject content and could then provide advice to the co-ordinators on suitable references, Dewey numbers and keywords.

Services external to the Library

These are suggestions received during this research study for services that are outside the province to the Library and Information Service. They are included because they were clearly important to the students and also as a contribution to improvements to distance education support as a whole. Many of the suggestions centred on more communication between the unit co-ordinators and the students.

- Contact with the other students doing the unit in the local area. How are we to know if there are any and who they are ? (suggested seven times)
- Make sure the students receive the material for the unit before the start of the semester.
- More contact with the lecturer other than submission of the assignments. Contact by the lecturers would be useful. They could set up a regular time ring me and discuss the unit.
- More information on tape or video would be useful to support the unit especially the way to pronounce words.
- More comments from lecturers and tutors.

- I need someone who deals with all correspondence from distance students regardless of the questions. Does not just transfer the question from one person to another and the student never receives an answer.
- I would like to be able to ring up tutor to ask for guidance in what material to use.
- I would like to have itemised specifically what is wanted in the way of content and material in assignments.
- More contact between students and tutors (In one unit by week ten we still don't know who the tutor is) we are paying and expect better contact.
- Recorded lectures

5.8 Discussion

Some of the suggestions for improvement were for services or resources that at present are not defined as the responsibility of the Library and Information Service. The fact that these suggestions were made highlights the remote student's experience. These students consider they are dealing with Curtin as a whole. They do not make the distinction between the various parts with which they must deal; University administration, the schools, distance education unit, and the Library and Information Service. The suggestion of having one primary contact that will deal with the student's questions regardless of the nature of those questions has merit; however, it would be difficult to resource, particularly if the forecast rapid expansion of distance education becomes a reality.

The suggestions regarding co-operation between the library and the unit co-ordinators offer some interesting opportunities for cross-collaborative teams to support the information resource needs of these students.

Chapter 6 The nature of student use of computers

6.1 Introduction

The students and unit co-ordinators in this research study were asked a series of questions designed to answer the following research question:

- Are the students using computers and telecommunications to access the information they need to complete their units and, if so, how are they using them?

It is important that service planners and providers understand the factors involved in the students' use of computers to support their studies. These questions elicited not only present details but also future intentions.

6.2 Nature of computer use

Almost all the students (94%) in the survey used a computer in some way to during the course of their studies. The four students who did not use a computer were all enrolled in different units; two were from the Health Sciences and two from Business.

The most frequent use of computers was for word processing. Sixty out of the 63 students use it for this purpose. Other significant uses include spreadsheet software such as Excel (25 students) and specialist programs such as those used in accounting (15 students). Twelve students used a computer to send and receive email and 18 reported using a computer to access the World Wide Web.

Several of the units required the students to use a computer for more than just word processing (spreadsheets and specialist software packages) but none of the units surveyed

required the students to have remote access. Most unit co-ordinators felt it would be “inequitable” and “unreasonable” to expect all distance students to have remote access.

Many of the unit co-ordinators had, what they considered, a very realistic estimation of the nature of their students’ use of computers. They had observed very little use beyond word processing such as linking with telecommunications but acknowledged it will grow and create a whole new set of issues for them, as teachers, to tackle. The comments by the unit co-ordinators indicated they underestimated the level of access to a computer linked to telecommunication by their students. Two commented that they believed the popular literature had over emphasised the speed of growth in remote access.

6.3 Students and remote access

Twenty-four of the students (35.8%) have the use of a computer with remote access.

Table 22 Level of remote access across teaching divisions

<i>Teaching Division</i>	<i>Computer with remote access/ Yes</i>	<i>Computer with remote access/ No</i>	<i>Total students in division</i>
Business	13	20	33
Humanities	06	04	10
Health Sciences	05	19	24
Total	24	43	67

Note: Comparison across Divisions should be treated with caution because of the relatively low number of Humanities students in the study sample.

The unit co-ordinators expressed reservations about their own skill level in using a computer with remote access and all the possibilities this holds for them and their students. They realised they would have to increase their skills. Others were even more frank,

I actively discourage the use of email. I don't like it or the Internet. The students use of this is growing, but is discouraged. They don't know how to evaluate what they find and it is usually it is rubbish anyway. They don't, or can't, reference it, but then neither can I.

Others were concerned on their students' behalf for other reasons such as the cost involved or the stability or quality of information found on the Internet. Two unit co-ordinators spoke of the problem of verifying the data students had retrieved from the Internet as it "changed daily". Another concern was the students' inability to evaluate the information they found. Some unit co-ordinators felt students were unable discriminate between Australian and overseas information and much of what the students found and quoted is irrelevant in the Australian context. The example of different legal jurisdictions was offered in this context.

Students using remote access

An important distinction must be drawn between the level of student access to computers linked to telecommunications and the use of that access. Not all students that have access to a computer linked to telecommunications actually use this access. Overall, 79% (19) of the students with access (24) had used it during the course of the unit they were undertaking. This represents 28% of all students surveyed.

Both the unit co-ordinators and the students offered reasons for the difference between access and use. One reason was that, for some students, access is via their workplace and whilst this source is an asset for some it was the reason for the low level of use for other students. As one student said, "I would like to use it but I don't know how, don't have time to learn and anyway I don't want to look dumb at work and have to ask someone to help. It is easier to muddle by without it."

Another commented,

It is great having access at work, as there is no way I could afford it at home but I have to be careful and not give the impression I am doing other

things when I should be working. Even if I use it after the end of my shift, it is difficult to explain to anyone who walks past who will assume I am just surfing the net.

Students were using their access for a variety of purposes including accessing interstate and international material that would have been difficult to obtain in any other way. One student felt remote access went some way to reduce her isolation. She spoke of wishing to browse the collections of any library and felt accessing the indexing and abstracting tools online was an adequate substitute. However, she ruefully added that getting hold of the items was still a problem.

The distinction between theoretical access and use of that access to support their information resource needs was significant in this research. Many of the activities to increase online delivery of materials and services are predicated on a high level of access by this group of students. Therefore, this distinction between access and use of access is one that demands further consideration in service design and research. In this context, ownership or unhindered access to equipment becomes vital.

In some ways, online access to databases has increased the students' sense of frustration. Those that have access and use it can now find a wealth of references to interesting material on their subjects. However, the distinction between references and full text is never lost on the distance students. We are moving towards full text access online. In some subject areas this is well catered for and in others still rather poor. The move to full text access is not without issues. As one student observed it is a way of shifting the cost and responsibility for printing etc. to the students. This observation was also made by two unit co-ordinators.

6.4 Curtin Library and remote access

Eleven (57.89%) out of the nineteen students that use remote access used it to reach the Library and Information Service's web site (LISWEB). Therefore, of the total survey group, 16.41% are remotely accessing the Library Service.

All of these students used their access to search either the Curtin or other library catalogues. These students usually accessed the service at least several times each month.

Table 23 How often computer used to access Curtin

<i>No. of times</i>	<i>No. of students</i>	<i>Percent</i>
Several times per week	03	04.5
Several times per month	05	07.5
Occasionally	03	04.5
Did not access	56	83.6
Total	67	100.0

Students were asked to comment on their perceptions of how useful it is or would be to access Curtin using a computer with remote access.

Positive comments from those students that do not have access at present included comments on the ability to check if needed materials are available or out on loan. Another student was optimistic about the advantages, "I could access books in full text and down-load chapters as needed. That way I could have a chapter or two from several books rather than needing to buy several whole books."

Some students feared remote access would only make their situation worse, as one student explained, "I've heard about the Internet. It is a confusing tool with no control and quality. How will I find my way around? Out here I can't just pop into the University and find someone to answer my questions."

6.5 Intention to acquire remote access

Students were asked questions as to whether they intended to have access to a computer linked to telecommunications in the next twelve months.

Table 24 Intention to have remote access

<i>Intention</i>	<i>No of students</i>	<i>% of students</i>
Yes	15	22.4%
Yes but difficult due to cost	13	19.4%
Yes but not own	1	1.5%
Yes but unsure how to set up	3	4.5%
No	4	6.0%
No can not afford it	2	3.0%
Did not answer	1	1.5%
Don't know	3	4.5%
Other	1	1.5%
Already have access	24	35.8%
Total	67	100%

Of the students that presently do not have access 32 indicated they intended to have access within the next 12 months. If the intentions of these students become reality 83.58% (56) of all students would have access by the end of 12 months from the date of the survey. This finding is validated by a survey of distance education students carried out by the Library and Information Service in September 1998 that found 81.2% of students that responded to the survey could access the Internet. This recent survey also found that only 65.9% actually use that access (Curtin University of Technology Library and Information Service, 1998).

However, 13 of these students that said they intended to have access but maintained that this would be difficult because of the costs associated with access. Three that intended to arrange access indicated they were concerned about a lack of technological expertise in how to set up the equipment and one indicated the access would not be via their own computer.

Comments from students about their intention to arrange access frequently centred on the inevitable need to do this tempered with reservations about the cost. The cost will force some students to rely on access at work, which although they considered this not ideal, was at least affordable. Some students declared outright they could not afford the costs and others said that they doubted whether access would provide enough information to justify the cost. One student elaborated on concerns not only about cost but also information literacy support,

It will have to have a lot more useful things on it to justify its cost, not just the cost of the computer, modem etc but the cost of an access provider, long distance calls and so on. Anyway, I know how difficult it is to use the on-line databases from when I was an internal student. What hope does a far distant student have without the reader education classes?

Other students queried where they would learn to set up and use the Internet effectively. The concerns were not only about searching and retrieval skills but also the technical skills required to set up a system of remote access. As one student said,

I realise now I should have put in the time to overcome these problems before I started studying. Now I am so busy keeping up with the assignments, work and the family I can't afford the time to investigate equipment, arrange connection and learn how to use it. I would have to do all of this 250 km from the nearest town. All the while I can get by without it, it will have to wait.

One student declared that she had heard that all the information on the Internet was rubbish and another said it would only be useful if it provided full text information not just references.

Some overseas students faced even more complex problems than those on shore in Australia. Indeed, one student living in Saudi Arabia observed that the Internet is not, as yet, available in Saudi Arabia.

6.6 Discussion

The issue of remote access raised new questions for the students. Some argued that being able to access the catalogue and the electronic databases made their task worse. If they were on-campus, they would check the material for relevance to their needs before borrowing. They now have access to what is often a long list of books or journal articles with little or no indication of relevance. They could not afford to borrow, or have photocopied, all of the material. A student said this forced her to take what she referred to as the “realistic but not balanced approach” of only using journals that are accessible in full text online.

The unit co-ordinators made some frank comments about the possibilities and threats posed by computers linked to telecommunications. Some saw it as a marvellous addition to their courses, and not only for distance education students. They could stay in touch with students via email and post notes and questions and monitor the student’s concerns via a chat group. Some saw it as the only way they could see a future for distance education. Their only concern was that they do not make the best use of the possibilities offered by remote access to the Library resources.

Many of the unit co-ordinators are still reluctant to use the available technology fully and this reluctance is transmitted to their students. It makes them slow to embrace the possibilities and fail to encourage their students to participate in using these technologies.

A concern that was raised was the perception of a lack of co-ordination at Curtin about many of the issues concerned with using the possibilities raised by the linking of telecommunication and computers. These concerns raised during this research include:

- No agreed level of technical support for the students,
- Lack of technical competence and confidence on the part of the staff
- Few staff development activities that help staff overcome some of their lack of expertise
- Undue optimism about what resources are available electronically
- Differences in the availability of full text resources across subject areas
- No common understanding of the role in web delivery of the Distance education section of the Teaching Learning Group (now called the Centre for Educational Advancement)

Consideration of these issues is critical. Much of the discussion in the literature, and subsequently, the policy decisions being made, are based on the premise that the use of computers linked to the telecommunications will provide answers to all sorts of issues in the delivery and support of distance education. This may prove to be the case, however, it will depend on the acceptance by and training for unit co-ordinators. In addition, comprehensive support must be provided for the students. This support will need to include technical advice and information literacy.

Chapter 7 The student experience

7.1 Introduction

This research study explored several other factors in the distance education environment of the students. These factors include training the students have received in using a library service, the nature of contacts between the students and the unit co-ordinators and the attitudes of the unit co-ordinators to distance education and its information resource support. Analysis of these factors should provide further information on how the students' needs can be met in the most effective way.

7.2 Training in the use of libraries

The students were asked to describe any assistance or training in the use library services and facilities they had received from Curtin or elsewhere. Training in the use of libraries the students had received may influence their use of the library services that are available to them.

Twenty-nine (43.3%) of the students had experienced some form of library training in the past. For most students this was during some form of previous on-campus study although not necessarily at tertiary level. One of the students was a librarian who qualified some years ago before a tertiary qualification was required. Another student had worked in a public library and had another degree for which he studied on campus. Other students received their background in using a library from a variety of institutions including Bond University, Peel TAFE, the University of New South Wales. One student took the opportunity, during what was described as a "rare" visit to Curtin, to participate in a group tour and demonstration arranged by the Curtin Library and Information Service.

Some of the 37 students that had not had the benefit of any library training offered some observations on the topic. Several indicated they felt this would be very useful. One student who echoed the feelings of many declared,

No, I've never had any (training). You know I would even make a special trip if necessary to attend information literacy classes and library tours. Nothing could replace this. How do I know when they are on and when to come?

Other students demonstrated a very practical approach. They found the best method was to contact the Off Campus Library Service people and ask. Of course, this assumes the students know the service exists and how to make contact.

Training in the use of libraries and information resources is very ad hoc for distance education students. This puts students who undertake all of their studies at a distance at a distinct disadvantage. A training program for distance students could be developed with the co-operation of the unit co-ordinators. Students and academic staff will need to appreciate what this could offer the students. The World Wide Web is one way to deliver this type of training. However, until there is 100% access by the students other methods will also have to be used. Information literacy sessions specifically designed for distance students could be offered on weekends and during on-campus workshops for those that can visit the campus in person. These would need to be effectively promoted to distance students and unit co-ordinators. This will still leave a group that have not been reached.

7.3 Contact between unit co-ordinators and students

Unit co-ordinators were asked about nature of their contacts with students. These questions included the methods and frequency of contacts and whether the students or the unit co-ordinator initiates the contacts.

Most of the contact between unit co-ordinators and their distance education students is via a combination of post and telephone. Post allowed the unit co-ordinators to control the timing of contact to suit their busy schedules. It was also cost effective and “less imposing”.

Four unit co-ordinators use fax and two use email for those of their students that have this facility. One unit co-ordinator commented on the extra demands using email places on him. He felt few of the students have this facility but he had to do “something special” for this group. It is a core unit with a large internal enrolment and this left little time for individual or special approaches.

The Curtin Distance Education Handbook (1996) stipulates that tutors or unit co-ordinators must contact each student within the first three weeks of semester either by telephone, or, as a minimum, by form letter. There is no mention of the possibility of using email or other forms of computer mediated communication. The Handbook is available to unit co-ordinators via the Curtin homepage on the World Wide Web or in print on request.

The unit co-ordinators were asked two questions about the frequency of their contacts with the students and who initiated the contacts. Ten out of the 12 unit co-ordinators defined the frequency of their contact “as needed”. Only one indicated that he made a habit of getting in touch with his students every two weeks. Some co-ordinators have quite defined structures for this contact. The students are given a telephone number and a contact time. If the unit co-ordinator has not heard from a particular student in three to four weeks the unit co-ordinator will telephone the student.

Nine of the unit co-ordinators (75%) indicated that contact between them and their students were initiated by their students. The balance said contact was prompted by either the students or themselves depending on the circumstances. Several made the rueful comment that contact from the students was much more often when an assignment was due. Most considered contact was as often as necessary, as determined by the students.

One unit co-ordinator felt contact was “not frequent enough and that she would like more skills with electronic communications as this would be useful in expanding the support

and contact she can offer the students. Another felt it was vital he initiated and maintained frequent contact. He felt that for distance students problems could grow unknown to the co-ordinators or tutors. A student will then just drop out without an explanation.

The students are frequently encouraged to contact the unit co-ordinators or tutors responsible for the units but many students are concerned that they will be “wasting the tutor’s time. This is partly a result of the demographics of this group of students. Being older and have a high percentage in full time employment the feeling was that as adults they would be expected to be independent.

The students were not asked specific questions about their contact with unit co-ordinators. However, three students expressed a desire for more academic contact. One suggested the lecturer set up a regular time to ring the student and discuss how the student was faring with the unit. Another requested more contact between students and tutors. He said that by week ten he was still unclear who his tutor was. He summed it up “we are paying and expect better contact”. The third said he would like to be able to ring up tutor to ask for guidance in what material to use.

7.4 Support for distance education

Unit co-ordinators were invited to comment on their experience of distance education and its support within the Curtin environment. Most acknowledged that distance education is a vital mode of delivery of undergraduate education particularly in the Australian context. For many there was no question distance education would remain important. They considered that for isolated students there is no other way.

They were concerned at younger students undertaking distance study as several commented how much harder it is for them. The older students were often are busier but more successful. Distance education students seem to fall into groups; either they struggle and drop out or they are highly motivated, mature students who do well.

Most unit co-ordinators felt the experience for the distance education student is acceptable but that the students miss the enormous benefit of peer contact. This contact added a level of richness to the on-campus student's experience that the unit co-ordinators considered impossible to duplicate at a distance.

Distance education poses some special issues for the unit co-ordinators involved. One observed the comparative importance of the materials used by the students, "the success of this unit for distance education students depends on the quality of the materials rather than me. Whereas the emphasis is the other way round for internal delivery."

Another reinforced the critical place of the reading resources to the unit and the students. His is a unit that relies heavily on reading. Therefore, he considered it is a unit that is successful in distance mode. If the student works hard, is not just "going through the motions," the student will succeed. He liked to think it was almost like the old concept of reading for a degree. What his distance students do not get is the benefit of giving class presentations and other verbal skill development opportunities. However, in his experience the distance students that have gone on to do on-campus postgraduate study later did not appear to have suffered from coming to postgraduate study via the distance route.

One unit co-ordinator was concerned about the different level of knowledge she had about her students. She reported being constantly worried about the problem of plagiarism. She was not suggesting that this is more of a problem with distance students but rather she inevitably did not get to know them as well as she does her internal students.

One unit co-ordinator with a wealth of experience with distance education in Australian and overseas had a difference concern. He had begun to consider the issues involved in the exclusive use of print materials both in the unit materials and in information resources for learners from an oral tradition or non English speaking backgrounds. He pointed out

that plenty of distance courses that are entirely print based. He was concerned that although Curtin uses some video material, there is still a very strong reliance on print. He acknowledged that this is also true to a lesser extent of on-campus study.

The issue of university support for distance education was one that several unit co-ordinators were keen to address. This is important to this study because this is the environment in which the Library and Information is providing a service to distance education students.

The unit co-ordinators felt that whilst it is acknowledged that distance education has been around for a long time and is here to stay, it is under supported within the Schools, teaching Divisions and the University. This was an issue one co-ordinator had thought about at some length and he seemed to speak for several of the unit co-ordinators interviewed,

Distance education needs to both be resourced and made a particular strategic thrust by the School and the University, or not done at all. We would need to become a major provider to achieve the level of support needed and make this method of delivery cost effective of my time. The only way is high numbers of students, a streamlined approach and good support services. At present, there is little or no political support and it (distance education) is only offered for equity reasons. The extra load for the lecturer is often not worth the effort. I feel these students are the poor cousins.

There seems to be an acknowledgement at the highest level of the University of the importance of distance education as evidenced in the University's strategic plan. This is not always being translated to the levels where decisions about resource allocation are being made. The unit co-ordinators responsible for delivery of distance education at Curtin care about the learning experiences of their distance education students. However, they are often frustrated by this perceived lack of political and resource support. The University is attempting to address some of these issues and in October 1997 the University allocated strategic funding of \$180,000 to improve distance education at

Curtin through its the Distance Education Enhancement Project (Curtin Strategic Plan, 1997-2000).

Chapter 8

Conclusion

8.1 Conceptual models of distance education support

As argued in the literature review, distance education and the attempts to provide scholarly information resource support to students undertaking this mode of tertiary education has been theorised as a deficit model of delivery and support. As demonstrated in this research, this model is still a valid one in relation to information resource support for distance education students. This is changing with the advent of computers linked to telecommunications but at a slower rate than some people charged with the responsibility of providing services to these students would like. The dependence on computer mediated communication to move distance education to a positive model is too narrow unless it includes more than passively making more and more resources available from a student's computer screen. It must include the development of information literacy skills within the content of the unit and a well-planned program of information literacy training for both staff and students.

The industrial model, where a production line creates an end product, in this case a unit of study, is also a valid one in the context of this research study. However, it could be re theorised as a positive model. Modification of the model to one where a team consisting of teachers, course designers with expertise in print and on-line course design and librarians responsible for providing library and information services work in a close relationship is possible. This approach is not new and has been suggested in the literature for some time. However, it is still far from the model operating in the environment that was the subject of this research. With librarians as a routine part of the design team it becomes possible to embed information literacy concepts within the unit and then ensure the needs generated by doing this are addressed.

8.2 Student autonomy and independence

Past studies of distance education students have described them as being more interested in their own learning and more active participants in the learning process than students who undertook their studies through traditional delivery methods. The students interviewed in this research study did not seem to manifest those qualities. They were not only physically distant but also distant in terms of knowledge about the structure of support and teaching at Curtin. They were interested in their own learning but often from a passive and, for them, realistic standpoint. They are part of a large, confusing and bureaucratic system that was difficult to negotiate at a distance.

The way student autonomy was manifest for many students was the decision by some unit co-ordinators to make their students independent of the need for information resources other than the supplied reading and set texts. This deliberate self-containment of the units raises significant questions for the provision of library and information services. One of the questions is whether the library has a role in influencing the academic content of units to include elements of generic skills such as information literacy. If this is the case, it may be seen by the unit co-ordinators as undue interference in the academic process. The library must be able to demonstrate how it is possible to include these elements in a distant learning environment and not place a significantly heavier teaching and marking burden on already taxed unit co-ordinators.

The students' reluctance "to bother" their tutors or the staff in the library service means that there is a challenge to empower the students to assert their needs. They can not be autonomous or independent unless they can understand the administrative and academic environment as it relates to them and are able to articulate their needs.

8.3 Interaction and communication.

Theoretical models that describe distance education in terms of interaction and communication were challenged in this research. Significant communication problems exist between each of the groups that make up the distance education experience for students. There is inadequate communication between the unit co-ordinators and the Library and Information Service and even less between the Distance Education Unit in the Centre for Educational Advancement and the Library. In addition, the Library and Information Service is not effectively communicating with the students about what services are available. Until very recently there have been few, if any, attempts to talk to the students to find out the issues and problems involved in accessing the needed information resources and services. On the students' part, they are frustrated by their lack of clarity in who to contact about particular issues that they have. This is not a model of interaction and communication, but rather one of isolation.

The students interviewed presented an overwhelming picture of being isolated from the expected university experience. The social dimension of the university experience was missing. Their keenness to discuss their experiences with this researcher reflected their lack of opportunities to discuss their individual experiences.

8.4 Lifelong learning and information literacy skills

A series of circumstances operating in the distance education environment at present has created an almost unique opportunity for change. This includes the increasing acceptance that the subject knowledge we teach will have to keep being renewed or completely changed at least every five years. In addition, there is a growing acknowledgement of the need to empower our students with generic, transportable skills that can be applied to whatever situation in which the students find themselves.

These factors are coupled with the blurring of past differences between distance and on-campus students because of the increased use of the Internet to provide not only access to information resources but also all other aspects of the learning experience and moves to re design courses to take advantage this. All of this makes it an ideal time for library

and information services to find ways of working with unit co-ordinators. This could start from the outset of course design to ensure we imbed concepts of information literacy and resource support in the units.

8.5 Computers and telecommunications

New information and communication technologies are significantly influencing decisions about educational activities and it is expected that this will increase extremely rapidly in the near future. Nowhere in education is this truer than in distance education in which the storage and transmission of information resources and services to support teaching and learning activities is fundamentally changing.

There is an urgent need to increase the knowledge of computer mediated information resources held by the unit co-ordinators responsible for the design and delivery of the units offered via distance education. If unit co-ordinators are well informed of what is possible and available in the way of information resources, they will be able to incorporate them into their courses and encourage their students to use the facilities.

The stated intentions of the students in this research to arrange remote access have become reality and so now, in theory, nearly 85% of students are able to take advantage of these facilities (Curtin Library and Information Service, 1998). However, there are still differences between theoretical access, use of that access and accessing Curtin library and Information Service. In addition, cost and technical support are still significant issues for students. These can not be ignored in any moves to require students to have access to the Internet in order to participate in distance education.

8.6 Equity and access support

Equity of service and access by all groups of distance students will remain an issue for the near future. Indeed, as geographical boundaries become even more irrelevant in the delivery of distance education and as more of our students are located overseas, assumptions we make about the circumstances the students face will be even more

difficult than at present. Political, economic and even religious contexts will influence the ability of students to take full advantage of the resources and support library and information services are attempting to provide.

Within Australia there are remote areas where the infrastructure to access the World Wide Web is either not available or is extremely expensive. Even if the infrastructure is in place, there will still be disparities in the financial resources and technical skills of students. This will determine their ability to take advantage of the possibilities.

8.7 Role of libraries in supporting distance education

Over 85% of the students interviewed in this research study felt access to a library service was helpful, important or crucial. Therefore, libraries charged with providing information resources and services have a responsibility to provide the best possible service to those students. There is perhaps an even more complex responsibility to provide those that consider access not necessary or irrelevant with not only a service but also to convince them why it is important.

Librarians responsible for meeting the needs of distance students should be involved in the process well before a distant student approaches the service needing help. They need to develop their roles to become an integral part of the teaching and research team. This could be done by assisting unit co-ordinators designing distance education courses to identify information resources, in whatever format is appropriate, to support the unit or course. This includes providing advice about networked electronic resources and Internet materials to unit co-ordinators. The goal is to increase collaboration between academic staff and librarians to enhance the learning experiences of the students.

Librarians can design and support the information literacy components of the units. They could provide information literacy to distance education students via the World Wide Web, floppy disk or CD-ROM as needed by the students and plan special information literacy workshops during on-campus sessions or workshops. This would require close co-operation between the unit co-ordinators and the staff in the library.

There is a need to ensure Off Campus Library Service staff not only know about new electronic resources, modes of delivery and search techniques but also participate in the decision making processes about acquisition of new electronic resources. Finally, Librarians must promote the links between distance education and the need for information literacy skills to University administration.

The full range of information resource support that can be provided needs to be more visible to the students for the start of their enrolment in the unit. Although some types of information are increasingly available in electronic form, full-length books and non-print resources such as videos and sound recordings are still; at present, best provided by loaning the physical object to the student. Therefore, this part of the service needs to be supported and promoted to the students just as vigorously as the services available from a computer terminal.

Support for the students in overcoming the technical difficulties in setting up access to remote resources, including library services, must be routinely offered. The library staff may not have the technical knowledge or resources to do this and other parts of the university such as a computing centre may more effectively provide the service. It should be made clear to the students that this type of advice is available and from where it can be obtained.

Both students and unit co-ordinators are in an educational environment that requires familiarity not only with the tools and with resources available to meet information needs, but also with the access and operation of those tools. Therefore, preparation of instructional library and information support resources both in print and on the Web for both the distance student and the unit co-ordinators responsible for distance education units is vital.

8.8 Knowledge and use of library services

Universities through their library and information services make a large investment in information resources and services to support students including, distance students, in their studies. However, the students can not make best use of these if they do not know what is possible. The mechanisms used to inform distance education students about resources and services, including the brochure that all distance education students receive, are not effective in their present forms.

It would seem a waste of resources to design new services without a creative program to make the existing ones known to all distance students. There is an urgent need to find more effective ways to promote existing and new services. An effective method of disseminating information about not only what is possible but also how these things are possible is crucial.

Increased remote access to library and information services may free up staff from providing photocopied journal articles, past exam papers and literature search services. This staff time could allow more emphasis on working with unit co-ordinators, information literacy training for students, and the promotion of services.

8.9 Copyright issues

The issue of copyright is one that needs to be tackled urgently. This needs not only further research but also urgent legislation. Resolution of some copyright issues, especially the ability of library and information services to offer electronic reserve collections of journal articles to distance education students, depends on legislation. The anticipated agreement between the Australian Vice Chancellors' Committee and the Australian Copyright Agency could help produce a solution to this problem. This and other encouraging signs from the Australian Federal Government have been noted but the issues are not resolved.

8.10 Limitations in this research

Resources and time necessarily limited the sample size of this study. Efforts were made to ensure the demographics of the students in this research were representative of not only the whole undergraduate distance education student body at Curtin but also those found in the literature. For the most part this appears to have been successful but the comparatively small sample size means that some of the findings must be treated with a degree of caution. However, the findings of a recent postal survey by the Curtin University Library and Information Service of all remote distance students validate many of the findings in this research study (Vautier and Sutherland, 1998).

During the course of this research, it became clear that the students did not differentiate between the library and other aspects of their distance education experience. In addition, some of the students were very pleased that someone, anyone, had bothered to contact them for their views. This may have had a “Hawthorn effect” on the students’ responses.

The environment in which this research was carried out is changing very rapidly. This applies not only in the opportunities and challenges of computer mediated communications but also to the political imperatives to find more cost effective modes of delivery tertiary education. Therefore, any attempt to generalise from the findings must consider the environment operating at the time of the research.

8.11 Future research

There are areas where a need for future research has been demonstrated during this research. The future will see the use of computers linked to telecommunications become, for students, unit co-ordinators and library staff, the normal mode of communication. More students will be very experienced with computers as a part of their pre-tertiary education and they will inevitably have strengths and abilities that are not yet recognised. Therefore, some of the concerns raised by students in this research

would not be an issue for future students. However, the demographics of the distance education population means this phenomena may still be some way off.

The level of access and use of computer mediated communication and the issues this raises for the students is an area that needs further investigation. An exploration of the reasons behind the difference between access and use of that access would also be useful.

The unit co-ordinators responsible for the delivery of distance education have much to offer on the subject of information resource support for distance education students. This research study interviewed twelve unit co-ordinators and this researcher received insights from every co-ordinator. The research would have benefited immeasurably from talking to everyone at Curtin who is involved in delivering distance education. This would prove a fruitful area for further research.

8.12 Conclusion

We are coming to realise the interdependency of the problems of information resource support for distance education students and the solutions. For example, information technology for both computer-mediated communication and Internet based learning are central to the future of information resource support of distance education students. However, this solution is providing some of our biggest challenges in terms of information literacy training and technical support.

Staff development in use of computer mediated communication and information literacy for both unit co-ordinators and library staff will allow effective use of the possibilities. It should also equip all concerned to challenge assumptions of what constitutes a well-resourced and supported unit of study.

It is becoming clear that non face-to-face modes are likely to become a dominant delivery method of tertiary education in the near future. This will result in the predicted exponential growth of distance education. Distance education is, or can be, an effective method of constructing and delivering education to students wherever they are located.

One crucial element in realising this possibility is a critical appreciation of what constitutes a quality, well-supported distance education program and the role of library and information services. It is vital to understand from the students' perspective the nature of the problems they face and to ensure they have a voice in the planning of information resources services intended for them.

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Appendix 1

Letters



Dear

Curtin University Library and Information Service is responsible for meeting the information needs of the Curtin Community and external students are an important part of that community.

In order to improve the Library's and the University's knowledge of the information resource challenges facing our external students I am undertaking some research into the needs of this group. This research will form part of a Master of Education degree. I hope this will enable us to ensure we are providing the best possible service to external students.

I have chosen twelve undergraduate units, interviewed the co-ordinators responsible for these units and examined the documentation received by the students enrolled in these units. My next step is to talk to the students enrolled in these units and you are one of these students.

I would like to talk to you on the telephone for about 20 minutes. I will contact you in few weeks so that we can arrange a time to talk that suits you. Of course, your participation is entirely voluntary and all answers you chose to give me will be treated in the strictest confidence.

I will be delighted to share any findings I make with you. I am interested in your views on this subject and your participation will be greatly appreciated. I look forward to talking to you.

Yours sincerely

Lynne Vautier

Phone: (09) 3517159 Email: Lynne@boris.curtin.edu.au



XXX September 1996

Dear

Curtin University Library and Information Service is responsible for meeting the information needs of the Curtin Community and external students are an important part of that community.

In order to improve the Library's and the University's knowledge of the information resource challenges facing our external students I am undertaking some research into the needs of this group. This research will form part of a Master of Education degree. I hope this will enable us to ensure we are providing the best possible service to external students.

You are currently enrolled in one of the units chosen for this research. I have interviewed the co-ordinators responsible for these units and examined the documentation received by the external students enrolled in these units. The next, and most important step, is to obtain information from you as one of the students.

Could you please complete the attached questionnaire and return it to me in the attached stamped envelope. Of course, participation is entirely voluntary and all answers you chose to give me will be treated in the strictest confidence.

I will be delighted to share any findings I make with you. I am interested in your views on this subject and your participation will be greatly appreciated. I look forward to hearing from you.

Yours sincerely

Lynne Vautier

Phone: (09) 3517159 Email: Lynne@boris.curtin.edu.au



XXX October 1996

Dear

I wrote to you recently outlining a study I am doing about the experiences of distance education students and their information resource needs. I indicated that I would attempt to contact you on the telephone to talk to you during September.

Unfortunately, I have been unable to reach you by telephone. However, I am still very keen that your experiences are included in the survey. Therefore, I am sending you a questionnaire with this letter.

Could you please complete the questionnaire and return it to me in the attached stamped envelope. It should only take about ten minutes of your valuable time.

Of course, participation is entirely voluntary and all answers you chose to give me will be treated in the strictest confidence. Please contact me if you have any questions or if I can be of assistance.

I will be delighted to share any findings I make with you. I am interested in your views on this subject and your participation will be greatly appreciated. I look forward to hearing from you.

Yours sincerely

Lynne Vautier

Telephone: Work (09) 3517159 Home (09) 4576992

Email: Lynne@boris.curtin.edu.au

XXX August 1996

Dear

Curtin University Library and Information Service is responsible for meeting the information resource needs of the Curtin Community and external students are an important part of that community.

In order to improve our knowledge of the information resource challenges facing our external students I am undertaking research into the needs of this group. This research will form part of a Master of Education degree. I hope this will enable us to ensure we are providing the best possible service to external students.

During the second semester of 1996 I will be interviewing a group of Curtin distance education students. I hope to find out about their reading practices and the ways they find the information resources they need. The students enrolled in your unit: are amongst those chosen.

Before speaking to the students, I would like to talk to you to find out what about the unit, your contact with the students and your reading expectations of your students.

Early in September I will contact you on the telephone to arrange a time that suits you. I realise how busy you are and I should only need about 45 minutes of your time.

I look forward to talking to you. If you have any concerns or queries please do not hesitate to contact me on 351 7159 or email Lynne@boris.curtin.edu.au.

Yours sincerely

Lynne Vautier

Appendix 2

Staff and Student Interview Scripts

Interview Script : Academic staff

Details to be recorded before or during the interview

1. Unit number

2. Personal details

2.1 Academic staff members name

2.2 Male/Female

2.3 Distance education experience at Curtin or elsewhere

3 Unit details

3.1 Unit number

3.2 Unit name

3.3 School

3.4 Is this unit also run internally?

Issues to be raised in during the interviews with members of academic staff responsible for the selected distance education units.

4 Course design

4.1 Were you responsible for the design of the course particularly in the form that is offered to external students?

IF NOT

4.2 Can you tell me who was responsible for the design of the unit?

4.3 Was the Library involved during the course design stage?

4.4 What are the methods of assessment are used in the unit?

4.5 Could you please comment about the experience of the students undertaking this unit via external mode as opposed to taking it internally.

5 Materials used

5.1 Were the materials used in the unit specifically designed for delivery via the distance education mode?

5.2 Was the WADEC guide to designing study materials been used and if so to what extent?

6 Student contact

6.1 What methods of communication/contact are used when you communicate with you external students?

6.2 How frequent are these contacts?

6.3 Do the students, you or both usually initiate them?

7 Reading

7.1 What materials are supplied to the external students undertaking the unit?

Books of readings

Videos

Tape recordings

Software

Anything else?

7.2 What other reading is the external students expected to do?

Set text

Other prescribed books

Journal articles

A/V materials

Software

Anything else

7.3 If additional journal articles are needed do you provide them with references supplied to specific articles?

7.4 Are the external students expected to find references to readings themselves, things such as books, journal articles or other resources?

8 Information Literacy

8.1 What information literacy skills do you assume on the part of the external student?

8.2 What information literacy skills do you anticipate your external students will acquire whilst doing the unit?

8.3 Is the emphasis of the content of the unit on subject, skills or both?

8.4 Have your students reported difficulty in accessing needed information resources?

8.5 Does the academic staff member discuss the use of the Library with their students?

8.6 Do the students' reading practices match your expectations?

9 Use of computers and telecommunications

9.1 What is your impression of the nature and level of use of computers by external students doing this unit?

10 General comments and discussion

10.1 For example: Future of distance education as a method of delivery of Undergraduate education.

Advantages and disadvantages for students

Advantages and disadvantages for academics

The information needs of distance education students at Curtin University and the Library's role in meeting these needs.

Student interview script

Note: Script in capitals below is not intended to be spoken to respondent

Hello, this is (INTERVIEWER'S NAME) calling from Curtin University.

Is this: (RESPONDENT'S NAME)

I recently sent you a letter describing the survey of distance education students I am undertaking. Did you receive it?

IF YES: PROCEED WITH INTRODUCTION

IF NO: I am sorry it did not reach you. The letter was to inform you of this call and the nature of the study. PROCEED WITH INTRODUCTION

INTRODUCTION

As I said in my letter students undertaking selected units via distance education at Curtin University are being contacted to find out their feelings about the reading required to complete those units and how they obtain the resources needed to do that reading.

The interview should only take approximately 15 minutes. Please, feel free to ask questions at any time and of course, you can chose not to answer any question if you wish. Your answers will, of course, be kept strictly confidential.

Is this a convenient time for you? (IF NOT MAKE A CALL BACK TIME).

[IF STUDENT DOES NOT SEEM KEEN TO PARTICIPATE IN INTERVIEW
OFFER TO SEND QUESTIONNAIRE]

May I proceed with the interview?

Thank you.

SECTION 1

My first questions relate to the Unit: (UNIT CONCERNED)

I realise that you may also be enrolled in other units at the moment and I will ask you about those further through the interview.

I would like to ask you about the information resources that you need to complete this unit.

1.1) What type of reading material or other resources are provided to you such as books of readings. (SUGGEST TYPES MENTIONED IF NECESSARY)

Books of readings
Photocopies
Other
Computer software
Videos

1.2) How much use did you make of the supplied material?

SUGGEST THE FOLLOWING CATEGORIES:

Extensive, that is every week whilst doing the unit
Moderate, that is several times whilst doing the unit
Little, that is once or twice whilst doing the unit
None, that is not at all

1.3) How many textbooks are specified for this unit?

1.4) How much use did you make of the textbook(s)?

SUGGEST THE FOLLOWING CATEGORIES:

Extensive, that is every week whilst doing the unit
Moderate, that is several times whilst doing the unit
Little, that is once or twice whilst doing the unit
None, that is not at all

1.5) Do you feel you could complete this unit and pass to your satisfaction using **just** the supplied information resources?

1.6) Do you feel you could complete this unit and pass to your satisfaction using only the supplied information resources **and** the textbook(s)?

1.7) What other information resources do you need to complete the unit?

Computer based resources
Books
Videos or other audio visual materials
Reference items
Journal articles
Indexes and abstracts
Other

SECTION 2

I would now like to ask you some questions about your access to and use of library services.

2.1) How important is access to **any** library and its services to the completion of your unit? I will read out some categories. Could you please indicate the one that best expresses your feelings?

Crucial / Important / Helpful / Nice but not necessary / Irrelevant

2.2) How important is access to **Curtin** Library and its services to the completion of your unit? I will read out some categories. Could you please indicate the one that best expresses your feelings.

Crucial / Important / Helpful / Nice but not necessary / Irrelevant

2.3) Could you please tell me which libraries you have access to, for example a public library or a library where you work?

2.4) What other information resources do you have **access** to, for example your own collection of books or the Internet?

2.5) Which library or libraries **including** Curtin's have you **used** to help you with your study this year? Could you please tell me all the libraries you have used.

2.6) Which other information resources have you **used** to help you with your study this year? Could you please tell me all the resources you have used.

IF STUDENT HAS NOT USED CURTIN LIBRARY GO TO QUESTION 2.11

2.7) I am going to read out a list of Curtin library services. Could you please tell me which services you have used via Curtin Library this semester? If you would like me to explain any of them to you please let me know:

Book Loans

Photocopy service (Journal articles or chapters of books)

Photo copies of past exam papers

Literature searches or reference aid

Inter library loans

Searched the Curtin Library catalogue via the Internet

Accessed other library's catalogues via Curtin Library on the Internet

Accessed other on line services via Curtin Library on the Internet

Other, could you please give me some details.

2.8) How many times have you used the Curtin Library Service this semester?

2.9) How do you normally contact Curtin Library service to access the services?

2.10) How would you rate your satisfaction with the service, people and resources of

the Curtin Library Service? I will read to you some aspects and some descriptions.

Could you please tell me which description is most reflects how you feel.

Service: very poor, poor, reasonable, good, very good, excellent

People: very poor, poor, reasonable, good, very good, excellent

Resources: very poor, poor, reasonable, good, very good, excellent

2.11) Could you please describe any assistance or training in the use library services and facilities have you received from Curtin or elsewhere?

2.12) Have you received any information about the Curtin Library and Information Service when you started this unit, and if so how did you receive it?

2.13) When did you receive this information, on enrolment, on starting the unit or during the unit?

2.14) How did you receive it?

2.15) Would it be useful to receive more information about Curtin Library Services?

2.16) Do you have any suggestions for improvements or additional services that you would like to be provided by Curtin Library Service?

SECTION 3

The next few questions I am going to ask are about your use of computers to support your study.

3.1) Do you have access to a computer that you use in your studies?

IF NO GO TO QUESTION 3.7

IF YES

3.2) What do you use this computer for? Could you please indicate all uses.

IF NECESSARY READ THE FOLLOWING LIST

- Word processing (e.g. Word)
- Graphic or spreadsheets (e.g. excel)
- Specialist software (e.g. Accounting programs)
- Email
- World Wide Web access
- Do not use a computer

3.3) Do you use your computer to access the Curtin Library service for any purpose?

IF NO GO TO QUESTION 3.7

IF YES

3.4) How often do you do this?

Several times each week

Several times per month

Occasionally

Very infrequently

3.5) Which Curtin Library services do you access via computer?

3.6) Have you found being able to access Curtin via your computer useful?

IF STUDENT DOES NOT USE A COMPUTER CONNECTED TO THE INTERNET

3.7) Do you plan to have access to and use a computer linked the Internet in the next twelve months?

SECTION 4

We have almost finished; these last questions are to help me to classify your answers.

4.1) How many units of study are you undertaking this semester?

4.2) Are you taking them all via distance education?

IF YES, GO TO QUESTION 4.4

IF NO

4.3) Can you please describe how you are taking them?

4.4) Have you done any tertiary study as an "on campus" student in the past? If so could you please describe this?

4.5) Are you employed full or part time in paid employment?

4.6) Would you mind telling me which age range you fit into?

65 and over

45-64

30-44

23-29

15-22

That is the end of the interview. Thank you for taking the time to give me your opinions. The information you have provided me will be very useful.

Good luck with your studies.

5.1) GENDER OF RESPONDENT M F

Appendix 3

Student Questionnaire



Curtin University Library and Information Service

In order to improve the Library's and the University's knowledge of the information resource challenges facing our external students I am undertaking some research into the needs of this group. This research will form part of a Master of Education degree. I hope this will enable us to ensure we are providing the best possible service to external students.

The attached questionnaire should only take about ten minutes to complete. You can choose not to answer any question and your answers will be kept strictly confidential.

If you have any queries or would like to talk to me in person you can contact me by telephone on 61 (09) 3517159 or by email on Lynne@boris.curtin.edu.au

Could you please return the questionnaire in the attached envelope by XXX

I look forward to hearing from you.

Section 1

The first questions relate to the Unit:

and the information resources you need to complete this unit.

1.1) What type of reading material or other resources are supplied to you for this unit?
Please indicate all types.

Books of readings

Computer software

Audio tapes

Videos

Other (Please detail)

1.2) How much use did you make of this supplied material?

EXTENSIVE (Almost every week whilst doing the unit)

MODERATE (Several times whilst doing the unit)

LITTLE (Once or twice whilst doing the unit)

NONE (Not used at all)

1.3) How many textbooks are specified for this unit? Please indicate the number below.

1.4) How much use did you make of the textbook(s)?

EXTENSIVE (Almost every week whilst doing the unit)

MODERATE (Several times whilst doing the unit)

LITTLE (Once or twice whilst doing the unit)

NONE (Not at all)

1.5) Do you feel you could complete this unit and pass to your satisfaction using **only** the supplied information resources?

Yes

No

1.6) Do you feel you could complete this unit and pass to your satisfaction using only the supplied information resources **and** the textbook(s)

Yes

No

1.7) What other information resources do you need to complete the unit?

Computer based resources

Other books

Videos and other audio visual materials

Reference items

Journal articles

Indexes and abstracts

Other (Please specify)

Section 2

I would now like to ask you some questions about your access to and use of library services.

2.1) How important is access to **any** library and its services to the completion of your unit? Please circle the one that best expresses your feelings.

Crucial / Important / Helpful / Nice but not necessary / Irrelevant

2.2) How important is access to **Curtin** Library and its services to the completion of your unit? Please circle the one that best expresses your feelings.

Crucial / Important / Helpful / Nice but not necessary / Irrelevant

2.3) Which library services including Curtin's do you have **access** to? Please list all libraries.

2.4) What other information resources do you have **access** to? These could include your own collection of books or the Internet. Please list all resources.

2.5) Which library or libraries including Curtin's have you **used** to help you with your study this year? Please list all libraries used.

2.5.1) If you have not used Curtin's Library Service could you please tell me any reason why not?

2.6) Which other information resources have you used to help you with your study this year? Please list all resources used.

IF you have **not** used CURTIN library service please go to question **2.11**

2.7) Below is a list of Curtin library services. Could you please tell me which services you have used via Curtin Library this semester?

Book Loans

- Photocopy service (Journal art. or chapters of books)
- Photocopies of past exam papers
- Literature searches or reference aid
- Inter library loans
- Searched the Curtin Library catalogue via the Internet
- Accessed other library's catalogues via Curtin Library on the Internet
- Accessed other on line services via Curtin Library on the Internet
- Other, please detail.
-
-

2.8) How many times have you used any Curtin Library Service this semester?

2.9) How do you normally contact Curtin Library Service to access these services?

- | | | | |
|-------------------------------|--------------------------|-------|--------------------------|
| Post | <input type="checkbox"/> | Fax | <input type="checkbox"/> |
| Telephone | <input type="checkbox"/> | Email | <input type="checkbox"/> |
| Library Web facility (LISWEB) | <input type="checkbox"/> | Other | <input type="checkbox"/> |

2.10) How would you rate your satisfaction with the service, people and resources of the Curtin Library Service? Please indicate on each of the scales the one that best describes your feelings.

Service: very poor, poor, reasonable, good, very good, excellent

People: very poor, poor, reasonable, good, very good, excellent

Resources: very poor, poor, reasonable, good, very good, excellent

2.11) Please describe any assistance or training in the use library services and facilities have you received from Curtin or elsewhere?

2.12) Have you received any information about the Curtin Library and Information Service when you started this unit. Please tick all types of information received.

- Printed information
- Verbal information
- None received
- Other (Please specify)
-
-

2.13) When did you receive the information about Curtin Library Services?

- On enrolment
- On starting the unit (with Unit plan etc.)
- During semester

2.14) How did you receive it?

- Post Telephone
- Email Fax
- Other (Please specify)
-
-

2.15) Would you like to receive more information about Curtin Library Services?

- Yes No

2.16) Do you have any suggestions for improvements or additional services that you would like to be provided by Curtin Library Service?

Section 3

The next few questions are about your access to and use of computers.

3.1) Do you have access to a computer that you use in your studies?

YES

NO

If NO please go to question 3.7

3.2) What do you use this computer for? Please indicate all uses.

Word processing (e.g. Word)

Graphic or spreadsheets (e.g. Excel)

Specialist software (e.g. Accounting programs)

Email

World Wide Web access

Don't use a computer

3.3) Do you use your computer to access the Curtin Library service?

YES

NO

If NO please go to question 3.7

3.4) How often do you do this?

Several times each week

Several times per month

Occasionally

Very infrequently

Not applicable

3.5) Which Curtin Library Services do you access via computer?

Curtin Library's and/or other libraries' catalogues

Other (please detail)

3.6) Have you found being able to access Curtin via your computer useful?

3.7) If you don't already have access to and use a computer linked the Internet do you plan to have in the next twelve months?

Section 4

We have almost finished; these last questions are to help to group your answers.

4.1) How many units of study are you doing this semester?

4.2) Are you taking them all via distance education?

YES NO

If YES please go to question 4.4

4.3) Can you please describe the other units you are taking this semester?

4.4) Could you please describe any previous study you have done as an "on campus" student.

4.5) Are you employed full or part time in paid employment?

FULL PART NO

4.6) Would you mind telling me which age range you fit into?

65 and over
45-64
30-44
23-29
15-22

Thank you for taking the time to give me your opinions. The information you have provided me will be very useful.

If you would like a summary of the findings please tick here.

Good luck with your studies.

Appendix 4

Data recording forms

Interview with Academic staff

1 Unit number

Personal details

2.1 Staff member's name:

2.2 Male/Female:

2.3 DE experience:

Unit details

3.1 Unit number:

3.2 Unit name:.

3.3 School:

3.4 Unit also runs internally:

Unit design

4.1 Present staff member responsible for the design of the unit:

4.2 If not who:

4.3 Library consulted during the unit design:

4.4 Methods of assessment in the unit:

4.5 Comparison of student experience of unit in DE and internal mode:

Materials used

5.1 Materials used in the unit specifically designed for DE mode:

5.2 WADEC guide use:

Student contact

6.1 Methods of communication/contact used:

6.2 Frequency of the contacts:

6.3 Communications usually initiated by the student or the academic:

Reading

7.1 Materials are supplied to DE students undertaking the unit:

Books of readings:

Videos:

Tape recordings:

Software:

7.2 Other expected reading:

Set text:

Other prescribed books:

Journal articles:

A/V materials:

Software:

Other:

7.3 References supplied to specific journal articles:

7.4 Students expected to find references to readings themselves:

Books:

Journal articles:

Other:

Information Literacy

8.1 Information literacy skills assumed on the part of the student:

8.2 Information literacy skills acquired whilst doing the unit:

8.3 Emphasis of the content of the unit on subject, skills:

8.4 Any reported difficulty in accessing needed information resources:

8.5 Discussion of Library use with their students:

8.6 Reading expectation of DE students:

Computer use

9.1 Use by students of computers:

Other discussion

10.1 Other discussion and comments

The information needs of distance education students at Curtin University and the Library's role in meeting these needs.

Document analysis recording sheet

Key:

N/A Not applicable to this unit

U/C Information in the documentation is unclear

Unit details:

1. Unit name:

2. Unit no.

3. School/department:

4. Credit points:

5. Year level:

6. Unit coordinator:

7. Co-ordinators/tutors:

Prescribed Reading (Number of titles specified)

Books

8. Set texts:

9. Recommended reading:

10. Other prescribed reading

Journal articles:

A/V materials:

Computer software:

Other material:

11. Reference to other resources

12. Reference to Curtin Library Services

Loans and Photocopying:

Books:

Journal articles:

Audio visual materials:

Computer software:

Other materials:

Other library services:

Information literacy instruction:

Access to remote databases:

Subject searches:

Other:

13. Reference to other information sources:

14. Reference to need for research and or information literacy skills:

15. Materials supplied to the student:

Book of readings:

Guide to Library services:

Audio visual materials:

Computer software:

Other:

None:

16. Notes on the unit:

Student Interview Recording Sheet

1) Time/Date

2) ID code:

3) Name of Student:

4) Address:

5) M/F

6) Unit:

Section 1

1.1 Supplied Reading

Books of readings

Computer software

Photocopies

Videos

Other

1.2 Use of supplied reading

EXTENSIVE

MODERATE

LITTLE

NONE

1.3 Number of textbooks

Number:

1.4 Use of textbooks

EXTENSIVE

MODERATE

LITTLE

NONE

1.5 Complete unit using supplied reading

1.6 Complete unit using supplied reading and text

1.7 Other resources needed

Computer based resources

Books

Videos and A/v

Reference items (SPECIFY)

Journal articles

Indexes and abstracts

Other (SPECIFY)

Section 2

2.1 Importance of access any library

Crucial / Important / Helpful / Nice but not necessary / Irrelevant

2.2 Importance access Curtin Library

Crucial / Important / Helpful / Nice but not necessary / Irrelevant

2.3 What libraries access to

2.4 What other resources access to

2.5 What libraries used inc. Curtin

2.5.1 If Curtin not used why not?

2.6 Other resources used

2.7 Curtin Services used

Book Loans

Photocopy service

Photo copies/past exam papers

Literature searches or reference aid

Inter library loans

Searched the Curtin Library catalogue via the Internet

Accessed other library's catalogues via Curtin Library on the Internet

Accessed other on line services via Curtin Library on the Internet

Other

2.8 Number of times used

Number:

2.9 Method of contact

Post	Fax
Telephone	Email
Home page on Internet	Other

2.10 Opinion of Curtin Library

Service: very poor, poor, reasonable, good, very good, excellent

People: very poor, poor, reasonable, good, very good, excellent

Resources: very poor, poor, reasonable, good, very good, excellent

2.11 Training in use of library

2.12 Information received about Curtin Library services

Printed information
Other

Verbal information

2.13 When received

On enrolment

On starting the unit

During semester

2.14 How received

Post

Telephone

Email

Fax

Other (SPECIFY)

2.15 Would more be useful

2.16 Improvements suggested for Curtin Library service

Section 3

3.1 Use computer

Yes

No

3.2 What computer used for

Word processing (e.g. Word)

Graphic or spreadsheets (e.g. Excel)

Specialist software (e.g. Accounting programs)

Email

World Wide Web access

Don't use a computer

3.3 Use of computer to access Curtin

Yes

No

3.4 How often

Several times each week

Several times per month

Occasionally

Very infrequently

Not applicable

3.5 Services accessed

3.6 Access to Curtin Library via computer useful?

3.8 Intention to use computer/ remote access in next 12 months

Section 4

4.1 Number of units being studied

Number:

4.2 All distance

Yes

No

4.3 If not all distance how taken

4.4 On campus study done

4.5 Paid employment

Full

Part

No

4.6 Age bracket

65 and over

45-64

30-44

23-29

15-22

Did not answer

Appendix 5

Coding guides

Coding guides

Below are the coding guides for data entry in SPSS and Excel from the Document Analysis recording sheets and the Student Interviews and Questionnaires.

Coding guide: Document analysis recording sheet

1. Unit name: Enter as per example: Economics 101
2. Unit no.: Enter as is
3. School/Depart: Enter as per example: Business Law (not School of xxx)
4. Semester offered: Enter as number 1 or 2
5. Credit points: Enter as number
6. Year level: Enter as number
7. Unit co-ordinator: Enter surname only
8. Co-ordinators/tutors: 1= Yes 2= No
9. Set texts: Enter as number 1-8 with 9= none specified
10. Recommended reading, Books: Enter as number with 99= none specified
11. Other prescribed reading:
 - 2= Journals
 - 3= A/V materials
 - 4= Computer software

5= Other

6= Several types of materials

9= None

12. Reference to other resources

1= Books

2= Journal articles

3= A/Visual materials

4= Computer software

5= Other materials

6= Several types of materials

9= None

13. Reference to Curtin Library services:

1= Loans and Photocopying

2= Information literacy instruction

3= Access to remote databases

4= Subject searches

5= Other

14. Reference to other information sources:

1= Other libraries

2= Several sources

3= Other

4= None

15. Reference to research and or information literacy skills:

1= Yes

2= No

16. Materials supplied to the student:

1= Book of readings

2= Guide to Library services

3= Audio visual materials

4= Computer software

5= Other

6= None

17. Notes on the unit: Enter as text

Coding guide: Student Interview Recording Sheet

Comments beyond that specified for coding below are entered as comments in Word file. Answers that indicate multiple responses allowed and received are also entered in the Excel spread sheet for that question.

The coding for the Excel spreadsheet for all questions is as indicated below except in Excel: 1=A, 2=B, 3=C, 4=D, 5=E, 6=F, 7=G, 8=H etc.

1) Time/Date of interview: Do not enter

2) ID code: Enter as is. Number is made up of unit number plus number for individual student

3) Name of Student: Do not enter

4) Address: Enter town and state initials, for example: Busselton WA

5) Gender: Enter as follows:

1= Male 2= Female

6) Unit: Enter unit name, abbreviated to 12 characters as necessary, as per the following examples Auditing 101, Beha Sci 172

7) Supplied Reading. Note code for combination of Book(s) of readings, unit guide and plan. Enter as follows:

0= Multiple answers (that include items in addition or instead of what is coded 9)

1= Books of readings

2= Computer software

- 3= Photocopies
- 4= Videos
- 5= Unit guide and plan
- 6= Lecture overheads
- 7= Journal articles
- 8= Example answers
- 9= Books of readings, unit guide and plan

1.2 Use of supplied reading. Enter as follows:

- 1= Extensive
- 2= Moderate
- 3= Little
- 4= None

1.3 Number of textbooks. Enter number in numerals.

1.4 Use of textbooks: Enter as follows:

- 1= Extensive
- 2= Moderate
- 3= Little
- 4= None

1.5 Complete unit using supplied reading. Enter as follows:

- 1= Yes
- 2= No
- 3= Yes but difficult

1.6 Complete unit using supplied reading and text: Enter as follows:

- 1= Yes
- 2= No

- 3= Yes but difficult
- 4= Maybe but did not
- 5= Not applicable

1.7 Other resources needed: Enter as follows:

- 0= Multiple answers
- 1= Computer based resources
- 2= Books
- 3= Videos and A/v
- 4= Reference items
- 5= Journal articles
- 6= Indexes and abstracts
- 7= Other
- 8= Other resources not needed
- 9= Did not answer

2.1 Importance of access to any library. Enter as follows:

- 1= Crucial
- 2= Important
- 3= Helpful
- 4= Nice but not necessary
- 5= Irrelevant

2.2 Importance access to Curtin Library. Enter as follows:

- 1= Crucial
- 2= Important
- 3= Helpful
- 4= Nice but not necessary
- 5= Irrelevant

2.3 What libraries access to. Enter as follows:

0= Multiple answers

1= Curtin

2= Local public library

3= Workplace library

4= Local academic library

5= TAFE

6= Other

2.4 What other resources access to. Enter as follows:

0= Multiple answers

1= Friends

2= Colleagues

3= Internet

4= Own

5= None

2.5 What libraries used inc. Curtin. Enter as follows:

0= Multiple answers

1= Curtin

2= Local public library

3= Workplace library

4= Local academic library

5= TAFE

6= Other

2.5.1 If Curtin not used, why. Enter as follows:

1= Not applicable

2= Public library easier

3= Not necessary

- 4= Did not know available
- 5= Service is too complicated
- 6= Service is too slow
- 7= Kalgoorlie College is very good
- 8= I would have had to pay
- 9= Did not answer

2.6 Other resources used. Enter as follows:

- 0= Multiple answers
- 1= Friends
- 2= Colleagues
- 3= Internet
- 4= Own
- 5= None

2.7 Curtin Services used. Enter as follows:

- 0= Multiple answers
- 1= Book Loans
- 2= Photocopy service
- 3= Photo copies/past exam papers
- 4= Literature searches or reference aid
- 5= Inter library loans
- 6= Searched the Curtin Library catalogue via the Internet
- 7= Accessed other library's catalogues via Curtin Library on the Internet
- 8= Accessed other on line services via Curtin Library on the Internet
- 9= Other
- 10= Not applicable

2.8 Number of times used. Enter as number except:

9= Not applicable

10= Many times on trips to Perth

2.9 Method of contact. Enter as follows:

0= Multiple answers

1= Post

2= Fax

3= Telephone

4= Email

5= Home page on Internet

6= Other

7= Not applicable

2.10 Opinion of Curtin Library. Enter as follows:

Service:

1= Very poor

2= Poor,

3= Reasonable,

4= Good,

5= Very good,

6= Excellent

People:

1= Very poor

2= Poor,

3= Reasonable,

4= Good,

5= Very good,

6= Excellent

Resources:

1= Very poor

2= Poor,

3= Reasonable,

4= Good,

5= Very good,

6= Excellent

2.11 Training in use of library. Enter as follows:

1= Yes

2= No

2.12 Information received about Curtin Library services. Enter as follows:

0= Multiple answers

1= Printed information

2= Verbal information

3= Other

4= None received

2.13 When received. Enter as follows:

0= Multiple answers

1= On enrolment

2= On starting the unit

3= During semester

4= Not applicable

2.14 How received. Enter as follows:

0= Multiple answers

1= Post

2= Telephone

3= Email

4= Fax

5= Other

2.15 Would more be useful. Enter as follows:

1= Yes

2= No

3= Unsure

2.16 Improvements suggested for Curtin Library service. Enter as follows:

1= Yes

2= No

3.1 Use computer. Enter as follows:

1= Yes

2= No

3.2 What computer used for. Enter as follows:

0= Multiple use

1= Word processing

2= Graphic or spreadsheets

3= Specialist software

4= Email

5= World wide web access

6= Don't use a computer

7= Other

3.3 Use of computer to access Curtin. Enter as follows:

1= Yes

2= No

3.4 How often. Enter as follows:

1= Several times each week

2= Several times per month

3= Occasionally

4= Very infrequently

5= Not applicable

3.5 Services accessed. Enter as follows:

1= Library catalogues, Curtin's and others

2= Other

3= Not applicable

3.6 Access to Curtin Library via computer useful. Enter as follows:

1= Yes

2= No

3= Maybe

3.7 Intention to access/use computer with remote access in next 12 months. Enter as follows:

1= Yes

2= No

3= Yes but difficult due to cost

4= Yes but not own computer

5= Other

6= Did not answer

7= Not applicable

8= Don't know

9= Yes but unsure how to set up equipment

10= Can not afford it

4.1 Number of units being studied. Enter number as numeral.

4.2 All distance. Enter as follows:

1= Yes

2= No

4.3 If not all distance how taken. Enter as follows:

1= Not applicable

2= TAFE

3= Internal units

4= WASM

4.4 On campus study done. Enter as follows:

1= Yes

2= No

4.5 Paid employment. Enter as follows:

1= Full

2= Part

3= No

4.6 Age bracket. Enter as follows:

1= 65 and over

2= 45-64

3= 30-44

4= 23-29

5= 15-22

6= Did not answer

Survey instrument. Enter as follows:

1= Telephone interview

2= Questionnaire