

Information literacy in the virtual library

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Abstract :

Multi-modal learning is a feature of educational provision at Swinburne University of Technology's Lilydale Campus. Academic staff expect a high level of computer and information literacy from all students, and also have the expectation that library staff are well equipped to support this. To that end, library staff are responsible for the design, delivery and assessment of a module in a core subject that must be taken by all first year students, regardless of their course. This paper provides some background to this situation, looking first at the campus background, the nature of the library and its services, expectations of academic staff, and the library's profile in course delivery. From our experiences at Lilydale campus, library staff have most definitely been called on to play a dynamic role.

Introduction

The nature of course delivery at the Lilydale Campus of Swinburne University of Technology has impacted significantly on the nature of the delivery of library resources and services. New technologies are changing teaching and learning, thus enabling the students to learn in places and at times to suit themselves. Face to face teaching still plays an important role at Lilydale, as does the on campus experience. However, these factors all lead to an increased expectation that students will become computer and information literate.

Most librarians work in what may be called virtual, or digital, libraries and in that respect we all face similar challenges. Where Lilydale may differ from others, however, is the understanding on the part of academics that reference staff will deliver some of the curriculum and set 20% of the exam questions in a core subject for first year students. What is the nature of the campus at Lilydale and the attitudes of the academic staff that the library has achieved such a proactive role? Why is it so important to the students that they develop skills in information literacy? How have we responded to the challenge? To answer these questions, it may be helpful to provide some background information about the campus, then move on to the nature of the library and its services and expectations of the academic staff.

Defining the topic

As with all specialised areas, librarianship has developed its share of jargon. Two examples of this are the terms used in the title of this paper, virtual library and information literacy. For the purposes of this paper the virtual library is defined as the type of library that offers access to electronic information using the Internet, regardless of physical location or time of inquiry. The American Library Associations' definition of an information literate person as one who is "able to recognize when information is needed and have the ability to locate, evaluate and use effectively the information needed....Ultimately information literate people are those who have learned how to learn"[American 1].

Lilydale Campus overview

Swinburne's proclamation as a university in 1992 coincided with the establishment of the Mooroolbark Campus in Melbourne's outer east, and this campus then moved to Lilydale in 1997. The Lilydale Campus is a state of the art campus that provides an innovative way of teaching and learning in the higher education sector. The Multi-Modal Learning Project (MML) commenced in 1992 at the Mooroolbark Campus and is now the accepted strategy for operations at the Lilydale Campus. Two quotes are included below which describe the project.

The project introduced strategies and facilities to permit use both on and off-campus of educational technologically enhanced teaching and learning techniques similar to those more frequently used by distance education. These teaching and learning enhancements are in addition to traditional procedures for use with students who attend campuses frequently for classes of one sort or another. MML is a project to encourage and assist change in the educational

practices of academic staff teaching at Swinburne and to facilitate learning.[Jeffery 1]

Multi-modal learning is a feature of Swinburne's educational provision. Traditional methods of learning are augmented by a range of independent learning methods designed to capitalise on the benefits offered by computer and media technology. The independent learner centred approach is complimented by state-of-the-art technology which allows students to learn largely at a time, place and pace to suit themselves.[Swinburne 14]

Included here are some quotes from the Swinburne Higher Education Handbook that may be helpful in understanding the philosophy of the campus.

“There is an emphasis on team project work throughout the degree, which enables students to develop technical and communication skills necessary to ensure that they are of immediate benefit to employers after completing the course” [Swinburne 144].

“...the course is designed to enhance a number of generic skills highly valued by employers and important for the development of the individual such as self-awareness, presentation and communication skills and skills for the maintenance of learning and knowledge” [Swinburne 146].

The Lilydale campus has over 1800 enrolled students, 1415 of whom are full time (as of 30/8/99) [Savvas]. It is a small campus, which can be a benefit to tertiary students who may otherwise be lost in a larger campus. Currently, there is one Higher Education building on the campus; the library is situated in a central location and is easily accessible to staff and students alike.

As is the case with all universities, library staff work closely with teaching staff to develop collections of resources, and help students make the best of them. Once students have gained competency in the use of the facilities in the Swinburne library they should be ready to use world-wide resources such as the Internet with confidence and skill.

Courses offered at the campus

Undergraduate degree programs are offered in the following areas:

- Bachelor of Applied Science (Computing)
- Bachelor of Applied Science (Information Technology)
- Bachelor of Business
- Bachelor of Business (Accounting)
- Bachelor of Business (Tourism and Enterprise Management)
- Bachelor of Social Science
- Bachelor of Social Science (Interactive Multimedia)

All first year students, regardless of their degree program, are required to take the following four core curriculum subjects: Information Methods, Statistics and Research Methods, Learning and Communications Behaviour, and Science, Technology and Society. The core subjects are expected to equip students with the broad base of skills and abilities that employers look for.

Computer support

There are 120 computers available for student use on the campus. Dial in access is readily available, with 96 56K lines available for use. To date, students have been able to use Swinburne as their Internet provider, with restrictions covering conditions such as the number of hours they can access the Internet at any one time. There is also a quota of nine hours' searching over a seven day period. All students are expected to create a network account and configure an email account during one of their orientation week sessions. They are given 5Mb of space on a common drive where they can save documents.

The Library

The size of the library is approximately 408 square metres, therefore of necessity the hardcopy collection in the library is very small and focuses entirely on what is taught at the campus. There are approximately 15,000 books and 200 journal titles in the library, although students have access to the entire Swinburne collection, both physical and electronic, across all the campuses. They can renew their loans and place holds electronically and a daily courier service runs between the campuses.

Electronic resources vastly outnumber the physical resources. Like most tertiary libraries, Swinburne subscribes to full text web based databases and other digital resources. The Library Home Page (see Figure 1) includes, among other things, the following information resources on the web: web databases, electronic journals, Search the Internet, Subject Gateways to the Internet, the online information desk, links to the Swinburne catalogue, other libraries catalogues and COOLCAT. The web-based databases between them give full text coverage to over 2,500 journal titles. Full text journal holdings are included in the library catalogue. The electronic services librarian, based at the Hawthorn Campus, is responsive to any suggestions for improving access to web resources.

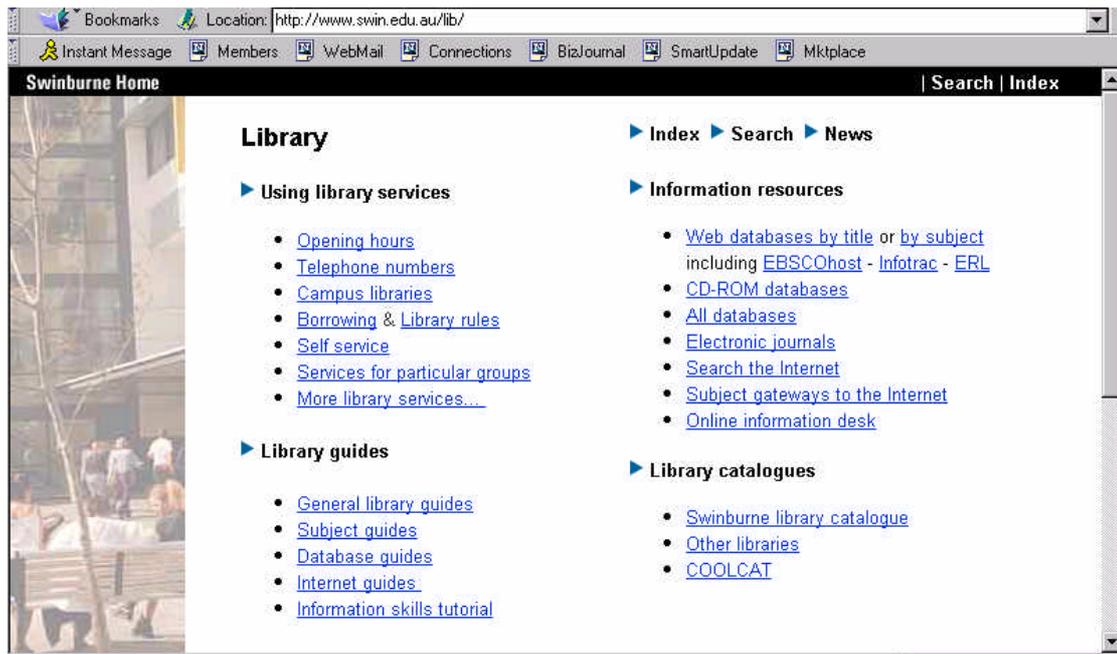


Figure 1: Web page

Interactive information skills tutorials are also available through the homepage. These are used as an important resource in the first year curriculum; they are:

- Starting your search
- The library catalogue
- Finding information on the Internet
- Searching for periodical articles and using electronic resources

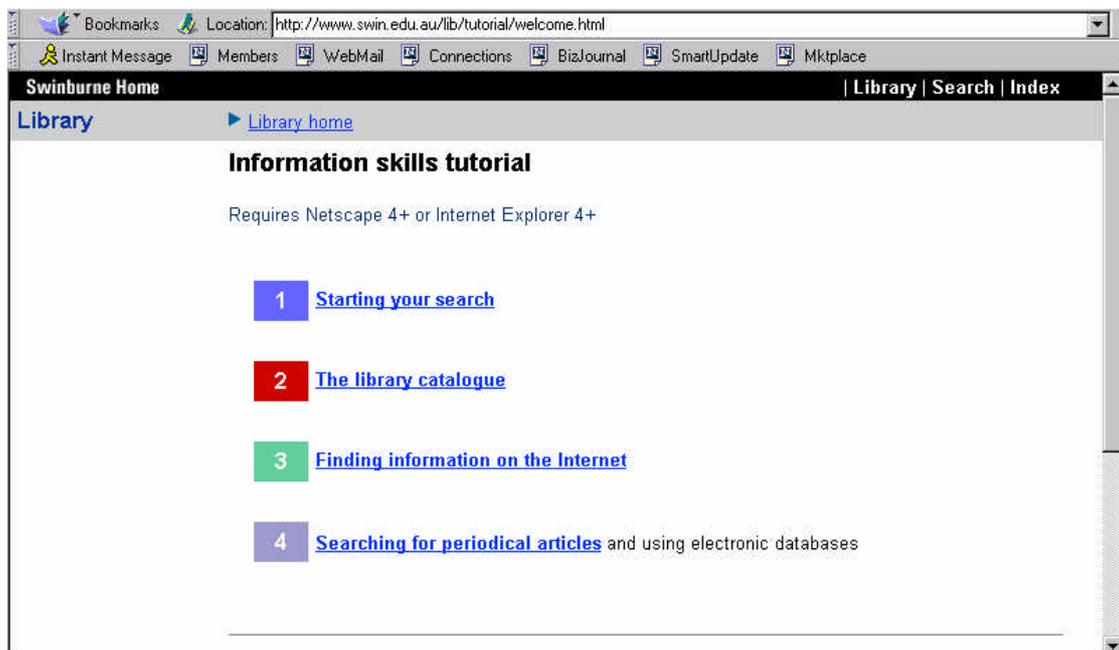


Figure 2 : Information Skills Tutorials

With space at such a premium in the library, students sit at tables and chairs rather than carrels; there is seating at the tables for 60 students. In addition to this there are 40 computers, an audiovisual viewing area and a small quiet room which is also used for user education classes. (The library can accommodate 120 students at any time but frequently has more). The expectation of the campus planners was that since the students would have access to so many resources from any computer on the campus and also from the convenience of their homes, they would visit the library infrequently. The catalogue, web based databases, subject home pages, lecture notes, on-line tasks, gateways to the Internet, discussion threads and other subject resources are available to them from home if they have a computer and modem.

The library computers are popular for a number of reasons. They have access to the entire Swinburne network, and also include all the software functions students require. A booking system was developed at the request of the student body three years ago and it is the only place on campus where this occurs. Although there are many computer laboratories, these are frequently used as classrooms and at other times they are not supervised. The Library's extensive opening hours and the availability of helpful reference staff also adds to the library's popularity.

Group work continues to be part of the new culture of learning; there has been mixed feedback from the students about group work but the consensus is that it is noisy and not all members work at the same level of diligence. The table and chair layout of the library combined with the large amount of group work and the use of the new technologies certainly serve to challenge any perceptions of a traditional library. At Lilydale we have nostalgic memories of the hushed, reverential atmosphere that still exists in most other libraries and we have to remind ourselves that it cannot work like that here.

In spite of the 'virtual library' concept, students choose to access the library resources from the library or a campus laboratory as well as off campus. One possible reason for this is because they can ask the reference staff for assistance. Captive reference staff are constantly among the computers assisting students with computer inquiries which can range from in depth reference inquiries to problems with their computer based subject tasks and email problems. Students who receive the greatest benefit from the library facilities appear to be those who use both on campus and remote access.

Expectations of academic staff

In spite of fears to the contrary, partnerships between academic and library staff in the flexible learning environment appear to have become more necessary than ever to design learning tasks that require the use of multiple types of format. Reference staff have been responsible for preparing and delivering subject modules from as early as 1996, at the request of the academic staff.

A conversation with a former library manager at the campus indicated that the reference staff at the new Mooroolbark Campus built on the good relationship with academic staff that already existed at the Hawthorn Campus [Olson]. It was relatively easy at the new, small, innovative campus to take the process further. Academic staff at the Mooroolbark (later Lilydale) Campus acknowledged that information literacy

was important, especially with the implementation of the Multi-Modal Learning Project.

Orientation week has become increasingly skills oriented over the last three years. In 1999, students took part in 40 minute workshops such as library orientation, logging onto the network, configuring their email accounts and introductory sessions to the core subjects. It is during orientation week that students learn their basic library skills. The year 2000 orientation program will have library sessions that last one hour.

The multi-modal nature of subject delivery at Lilydale is such that academic staff require students to be highly information literate and technically proficient from the day they start their course. They are expected to access subject home pages on the Internet, take part in discussion threads (on-line tutorials), and complete other on-line tasks and assessments from the very first week of lectures. All lectures are videotaped, digitised and put on the network where they can be viewed from any computer on campus. Remote access to digitised lectures is not available yet, but the library retains a video copy of each lecture on Counter Reserve for the current semester. This is one aspect of the new technology to which students have adjusted well. Some subject resources are available on a CD ROM that has been developed in-house by academic staff members. It is quite well known now and is called Oz21: Australia's cultural dreaming. Other subject resources and learning guides are available on the web and have been prepared in a way that makes the most of the new interactive technology.

Library profile in Course Delivery

Information Methods, a core first year subject, includes a module prepared and presented by library staff. It provides an ideal means of capturing students at the start of their tertiary careers. In order to take full advantage of this opportunity, and to ensure the continued support of academic staff, we were concerned that the module be delivered in the best way possible. In 1998 two members of the library reference team completed a subject called *Instructional design and developing self-paced learning materials*, which is a component of the *Graduate Certificate in Flexible Delivery*. The subject highlighted the need to look at the diverse needs of the learners and the ways in which they learn best.

Information Literacy component of Information Methods

Information Technology and the Library is a module in a core subject (*Information Methods*) for all first year students in higher education courses at the Lilydale campus. Reference staff are responsible for the design, delivery and assessment of this module. The subject was reviewed for 1999, and addressed some shortcomings which had become evident over the previous two years.

There were some issues that led to the need for review:

- Diverse levels of IT knowledge and literacy at point of entry
- Sociological and technological change promoting information literacy as a core competency
- Technical and global nature of information demand, storage and use
- Need for technically illiterate students to complete this subject in the first semester (previously it had been taught in both semesters)
- Students taking the subject in second semester were disadvantaged because they could not use the library facilities or take full advantage of Lilydale's multimedia approach to flexible learning

Methods

We then focussed on the needs of our learners, identified our goals and objectives, worked out delivery approaches, identified any challenges to learning, and planned how we would assess both the students and the success of the module.

Needs of the learners

Students undertaking the subject are first year higher education students. Approximately 85% have just completed their VCE and have a range of computer skills. Others are mature age students returning to study after many years, will not have touched a computer and may even have a fear of computers. It is estimated that approximately 25% have little or no computer skills and it is important that these students are identified. In the past, this has inhibited their ability to complete the course satisfactorily and eventually led to a revision of the subject. From 1999 students have been required to sit a placement test to assess their level of computer literacy. Those passing (presumed to be around 75%) will be exempted from the basic skills module and proceed to Module B.

Underpinning knowledge (those skills required by the students before they take the module) include basic computer skills, such as how to log into the Lilydale network, understanding a little about what the network is, keyboard skills, mouse skills, scrolling, some terminology such as what the "desktop" really is. We believe it is important to assess what they already know.

Goals

- To develop transferable, lifelong skills in information literacy
- To enable students to become sufficiently information literate to use the Swinburne at Lilydale's library facilities effectively
- To motivate the students to understand the importance of developing information literacy skills

Objectives

- To equip students to become sufficiently information literate to use the Swinburne library effectively. This involves being able to use the library catalogue, and access the CD ROM network and web-based electronic databases
- To familiarise the students with the Dynix catalogue
- To initiate the development of transferable lifelong skills in Information Literacy
- To design a module that incorporates on-line learning materials in information literacy that have already been developed by library staff

Delivery Approaches

The topic is run for two weeks early in the semester and takes the form of lectures and demonstrations. It is divided into two modules. In Module A library staff deliver a lecture which introduces the program, demonstrates the use of the catalogue and shows students how to access the self-paced on-line tutorial. Students work through the Library Catalogue unit of the tutorial and also complete an exercise.

Module B consists of library staff demonstrating Swinburne's CD ROM network and Web-based databases, and searching the Internet using search engines and subject gateways. Students work through the on line tutorials titled "*Starting your search*" and "*Using On-line databases*". Powerpoint presentations used in the lectures are placed on the student computer network (electronic reserve) for later revision. Their Learning Guide for the subject is available both in print and on line format.

Students are given a compulsory assignment that is graded, and sit an exam for the subject at the end of the semester. Library staff set 20% of the exam questions, but the entire exam involves the subject of information literacy.

Material used

As a result of completing the subject on Instructional Design, we deliberately used resources in different formats, so that students could learn in ways that suited them. These included :

- Learning guide, available both in print and on-line
- Information skills tutorials on the library home page
- Powerpoint presentations, which were later placed on the common drive
- Videotaped, digitised lectures
- Textbook
- Other resources on the library home page such as database guides

The textbook, incidentally, was selected by the Subject Convenor and not by the library staff. It was Patricia Iannuzzi's text, titled Teaching information literacy skills.

Challenges to Information Literacy

We identified a number of challenges over the previous two years that appeared to affect the development of information literacy skills. Some of these challenges will be familiar:

- Students undertake the learning because it is compulsory
- Many may be reluctant learners because they see it as unnecessary, particularly the recent school leavers who may not have an understanding of the standards required of tertiary students. (It has been observed that older students are usually more aware of their learning gaps and are eager to fill them.)
- Difficulties in motivating students to gain skills whose importance is not apparent to them
- Wide variety of entry level skills
- Information overload resulting from the need to learn many skills very early in their course

Assessment

The Subject Convenor expected that Reference staff would set 20% of the exam paper. This has been a great opportunity for a number of reasons:

- It gives the module more credibility
- It is a means of discovering the trouble spots
- It motivates students who may otherwise be recalcitrant
- In addition to assessing the students, it provides library staff with valuable feedback about the success of the delivery approaches

A thorough analysis of the results of the exam has not yet been made, however a number of trends became apparent at the time of marking the papers. Many students still had problems understanding what a citation was, and had difficulty understanding that they needed to check holdings under the periodical title rather than the article title. Possibly because the students were unaware that they would be examined on this component they achieved fairly poor results in this section in first semester, averaging about nine out of a possible twenty. Second semester results were much improved. We intend to make a thorough analysis of the exam results, and compare the first semester results with those of the second semester, where we changed our method of delivery slightly.

We have had a good look at the questions we set for the exam and believe that they were a good test, both of the students' information literacy skills development and of the success of the module. Questions covered topics such as using the catalogue, CD ROMs, databases both full text and otherwise, using boolean operators, techniques for searching on the Internet. Some questions were multiple choice, others required written answers.

More powerpoint presentations were used in second semester. These clearly outlined important points for the students, who were also informed that the information was examinable. After the lecture the presentations were put on the public drive on the

network and could be accessed by the students when necessary. Together with the rest of the material mentioned above, the students could access information in any style that suited them and just about any time or place.

A possible form of assessment of the effectiveness of the module was the vastly increased database usage. Ebscohost searches jumped from 35,774 in 1998 to 233,451 in 1999, and Infotrac from 23,278 in 1998 to 71,202 in 1999. However these statistics cover all the campuses of Swinburne so Lilydale cannot take all the credit.

Information Literacy component of Learning Communication and Behaviour

This is another core subject for first year students which includes a lecture by library staff called *Researching a Topic*. The topic happens to be the open exam question, which is another great motivation for otherwise recalcitrant students. For the last three years the students have been taken through the steps of research for Stanley Milgram's obedience to authority experiment, starting with the identification of key words through to database and Internet searching. They are encouraged to appraise critically the material they find, especially information found on the Internet.

Information Methods initiates the information literacy journey and *Learning Communication and Behaviour* adopts a complementary role by taking it one step further. It also involves the co-operation of yet another Subject Convenor who has high expectations of library staff.

Conclusion

The results of the library's inclusion in the curriculum have become apparent in a number of ways:

- Positive feedback from academic staff, with the expectation that the library module will remain in the curriculum (although the form it takes may vary from year to year)
- Improved results in the second semester exam
- Significant increase in the use of electronic resources, both on and off campus
- Financial support from the Discipline Leader for the revision of the Information Methods module for 2000

From our experiences at Lilydale, librarians have not lost their place as mediators between the user and the world's knowledge in these days of the information revolution. The virtual library environment can be an unforgiving place for the students if they are not sufficiently information literate. Access to most library and classroom material is almost unlimited; because of this, students really do need to develop techniques that can help them navigate around the vast information resources available, and extract what they need.

Conditions on the campus that enable the library to enjoy a high profile appear to be based on a few important factors. A good relationship with academic staff that developed over many years, a positive attitude to change and a favourable campus culture cannot be overestimated. This environment continues to be a challenge for the reference staff at the Lilydale Campus who are expected to play an important part in the development of information literacy skills. We have been called on to play a more dynamic role, broaden our skill base, become even more versatile and not worry too much about the noise.

BIBLIOGRAPHY

American Library Association Presidential Committee on Information Literacy. Final Report. Chicago: ALA, 1989.

Arnold, J., K.Vigo and D.Green. Oz 21 : Australia's Cultural Dreaming. CD-ROM. Melbourne: Swinburne University of Technology, 1997.

Iannuzzi, Patricia, Charles T. Mangrum 11, and Stephen S. Strichart. Teaching Information Literacy Skills. Boston: Allyn & Bacon, 1999.

Jeffery, Peter. "Establishing change": third review of the project to introduce educational technological approaches to the provision of higher education at Swinburne at Lilydale. AARE conference, Brisbane, 1997.

Olson, Truda. Personal interview. 6 Dec 1999.

SAL in profile 1998. Lilydale: Swinburne University of Technology, 1998.

Savvas, Saty. Swinburne University of Technology: summary statistics by campus. 30 Aug. 1999. Available: <<http://www.swin.edu.au/swincorp/pis/sum3.htm>>.

Swinburne University of Technology. Higher Education Division. Higher Education Handbook 1999. Hawthorn, Vic.: Swinburne University of Technology, 1999.