

LEARNING, TECHNOLOGY AND INFORMATION SERVICE DELIVERY IN THE DIGITAL AGE

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ABSTRACT

The challenges facing the higher education sector are directly impacting on services provided by libraries. This paper examines CQU Library's response to the challenges by developing a sustainable information literacy program and review services to clients

INTRODUCTION

"To teach a man how he may learn to grow independently, and for himself, is perhaps the greatest service that one man can do another." (Benjamin Jowett, quoted in Borenstein, 1997)

This quotation from Jowett perhaps best sums up the approach Central Queensland University Library has adopted in relation to lifelong learning. Assisting our users to become independent learners during and beyond university. The library is one of the major proponents of lifelong learning and information literacy within the university.

Central Queensland University is a multi-campus, distance education provider, with commercial operations in Sydney, Melbourne, and Brisbane for international students living in Australia. The university also has a campus in Fiji as well as operations in parts of Asia. Courses are taught in the traditional face-to-face mode, by interactive videoconferencing, by print-based distance education, and online. Students can study by one or all of these modes during the course of their student life.

An obvious challenge for the library is to promote lifelong learning through the development of information literacy skills and concepts in students regardless of mode of study, location, time zone, or technology. The other major challenge for the library is providing an equitable library and information service to our students. Meeting these challenges in the modern higher education environment is no easy task.

The modern university environment is vastly different to the days of old. Ellingsen (1999 p 31) comments that universities are "trapped between tradition and turning education into a paying business. In an era when government funds just half the \$8.5 billion cost of tertiary education, vice-chancellors have become obsessed with efficiency". Duderstadt (1999), although

commenting on the United States higher education system, observes,

"To meet growing societal demand for higher education at a time when costs are increasing and public support is declining, most institutions have been forced to sharply increase tuition fees, triggering public concern about the costs and availability of a college education. As a result most colleges and universities are now looking for ways to control costs and increase productivity..." (p 3).

Not only is there a financial imperative for universities, but there is also a financial imperative for individuals. As increasingly more students are now paying fees to study, and universities are fiercely competing for their custom, their rights and power as consumers increases. Global Alliance Limited (1997, p 11) in their commissioned report for the West Review, see a power shift to consumers that will be expressed in a number of ways including price competition, a wider range of choices, and greater flexibility in delivery.

As an integral component of a university, the library is faced with the need to become more productive and to lower unit costs. A number of universities have outsourced technical service functions entirely, while others have developed 'partnerships' with commercial suppliers. While libraries, such as my own, have limited opportunities for obtaining external revenue, the focus is constantly on cost control. The rights and demands of students as consumers are also experienced by CQU Library in relation to the availability of material, the quality of service they receive, and library policies and practice.

Societal need for learning and training is one of the core drivers of lifelong learning. Blustein et al, (1999) refer to this aspect of educating people as retooling people for new careers as they suggest

"that people will change careers several times in their lifetime."

Duderstadt (1999) identifies that "today's undergraduate body is no longer dominated by eighteen to twenty-two year old high school graduates from affluent backgrounds" (p 4). At the time of writing, the Vice-Chancellor of Central Queensland University announced that only 25% of undergraduates in 2000 were high school leavers. Duderstadt (1999) also observes that

"we are beginning to see a shift in demand from the current style of 'just-in-case' education, in which we expect students to complete degree programs at the undergraduate of professional level long before they actually need the knowledge, to 'just-in-time' education in which education is sought when a person needs it through non-degree programs, to 'just-for-you' education in which educational programs are carefully tailored to meet the specific lifelong learning requirements of particular students" (p 4).

The impact of the changing demographic structure of student body, combined with a focus on tailored requirements for particular students, place libraries in a particularly difficult situation. The just-for-you paradigm creates a considerable amount of inherent tension when lifelong learning and information literacy principles are balanced against providing tailored information packages for students.

Technology is one of the greater drivers of the modern age. Its impact on higher education is obvious through developments such as the application of interactive videoconferencing for lectures, and course delivery via CD-ROM and the World Wide Web. Virtually all administrative functions have been automated. The efficiency of administrative functions is seen by Global Alliances Limited (1997 p 10) to be of such importance that it sees the streamlining of back-end processes as providing universities with a strategic advantage over less efficient competitors. My own university has just made its largest single commitment ever to install sophisticated administrative software. I also observe that a number of other Australian universities are undertaking installations of a similar nature.

Information technology impacts on our everyday life. Katz (1999) sees convergence: the merging of entertainment, publishing, education, retailing, telecommunications, and information technology, as "the most important phenomenon in the evolving technology market place" (p 33). One only has to read the financial pages of the major daily newspapers to be aware of the potential impact of convergence.

Libraries traditionally have been early adopters of technology. In most universities back-end operations have been streamlined and automated, and students and staff now have a vast array of print and electronic resources from which to choose. Over time, libraries have proven to be effective managers of information. They have always been responsive to new technology, and have modified practices to incorporate the new technology while at the same time retaining full access to the retrospective collections (Crocca, 1995).

Central Queensland University Library recently evaluated the impact of financial, societal and technological drivers, and its historical background, and realised its current mode of operation wasn't wholly congruent with the direction of the university. A recent review into flexible and distance learning at the university identified a number of goals. The goals included the development of a flexible global learning platform, maximising flexibility for CQU students, and developing the university as a learning organisation (Central Queensland University, 1999)

The library was essentially operating in a binary mode, one service for on-campus students, and another service for distance education students – the university having a long history of being a distance education provider. There was significant duplication of functions due to the binary divide. Students were not always being provided with a streamlined service, and policies were in dire need of review as a result of the expansion and changing dynamics of the university.

The library had two significant strengths on which to base its future plans, technology and information literacy. The library has systematically developed its technological infrastructure and has actively developed its collection on a premise of providing access to all students regardless of location. For example, the library now provides access to more electronic journals than it does to print journals. The library has also been extremely proactive within the university in fostering lifelong learning, and information literacy in particular.

INFORMATION LITERACY

Information literacy and lifelong learning have a prominent role in Central Queensland University policy documents. However, the implementation of the enunciated policy has yet to be fully embraced. In its core priority to "Further develop flexible learning and educational delivery" (Central Queensland University, 1997), the university aims,

"To be a university of the electronic age; a university which has members who manage their own information well and effectively access and evaluate external information; a university which offers programs that equip students with information management skills and a university which is a respected provider of information."

Strategies related to this core priority include the following:

- ensure that information literacy skills are a component of all new courses and progressively become a component of all existing courses,
 - offer specific academic award programs in information literacy skills available for on-campus and distance education students,
 - develop innovative programs through the faculties and the library to ensure that distance education students are given the same opportunities to develop information literacy skills as on-campus students.
- (Central Queensland University, 1997)

Although the university has yet to offer specific academic award programs in information literacy, innovative programs have been developed within some faculties and by the library, and information literacy skills and concepts are progressively being incorporated into existing courses.

The library is a major crusader of information literacy within the University. Information literacy has a prominent position in the library's strategies to support teaching, learning and research. (Central Queensland University, Division of Library, Information and Media Services, 2000). In recognition of earlier and continuing work, the university rewarded the library with a \$100,000 grant specifically to develop a comprehensive and sustainable information literacy program for all CQU students and staff.

The library identified seven underlying forces necessitating the need to develop a comprehensive and sustainable information literacy program:

- 1) an increasing number of academic staff requesting concept based information literacy education in preference to skills based training,
- 2) the four-term year coupled with greater undergraduate student numbers made traditional face-to-face increasingly labour intensive,
- 3) more students studying on CQU regional campuses,

- 4) a greater number of distance education students, and more students were undertaking courses online,
 - 5) increasing amounts of information were being electronically stored and accessed,
 - 6) A larger body of researchers within the university,
 - 7) technological and communication advances made it essential that programs and services incorporated new technology.
- (Orr, 1999).

Equity of access to information literacy was an imperative for the library. It services students studying on-campus at Rockhampton, at smaller regional campuses with fewer resources, by distance education, and students studying electronically.

The team proposed a number of outcomes for the project:

- a sustainable teaching model for the creation, delivery and evaluation of information literacy programs,
 - products to support the sustainable model and thereby reducing face-to-face teaching,
 - an integrated approach across CQU campuses,
 - enhanced delivery to distance education students and the use of technology to make such delivery more effective,
 - improved access to electronic resources through the redesign of the Library webpage and a virtual reference desk,
 - enhanced support of researchers.
- (Orr, 1999)

Although the project had not been finalised at the time of writing, a number of significant outcomes have been realised.

A framework has been developed to align principles of information literacy with learning outcomes for students. The framework defines the information literacy principle, identifies the learning outcome, and identifies who is responsible for the learning outcome – the student, lecturer, librarian or a combination of parties. To support the framework, guidelines for a sustainable model of embedding information literacy skills and concepts into lectures and tutorials has been developed. The framework and guidelines have been trialed in a number of areas, and case studies have been written (Wallin, 2000).

The library webpage has been totally redesigned. It will be launched in time for the commencement of

Term 2, 2000. The redesign was based on four guiding principles:

- 1) ease of navigation,
- 2) professional appearance,
- 3) customer centred content,
- 4) an information literacy philosophy that aims to educate the user.

Specifically, the last principle stated "The web pages are not a conglomeration of numerous handouts and information sheets but should be clearly structured and support information literacy principles and goals." (Houston & Tittel, 1999 p 1)

The first module of an information literacy skills video has been completed, librarians have visited the regional campuses to ensure integration across the Central Queensland campuses, and investigations and trials are continuing on the development of a Virtual Reference Desk.

CLIENT SERVICES REVIEW

Although the Information Literacy Project consumed significant amount of time for professional staff during 1999, the library also initiated a review into its client services. As mentioned previously, the library was operating in an outdated binary mode of operation which engendered significant duplication and redundancy. The library realised it could not continue to effectively deliver quality information literacy programs and library services to students using a range of technologies and studying in a variety of modes if it did not realign its policies and services to the hybrid university paradigm.

The Client Services Review Task Force (CSRTF) was initiated in August 1999. The Terms of Reference document (Client Services Review Task Force, 1999a) stated the following:

- The Client Services Review Taskforce (CSRTF) has been established to consider the most appropriate and effective means for providing services to the clients of CQU Library.
- The Review into Distance and Flexible Learning, and the CQU Online report highlight the need for the University to offer courses to students in a variety of modes, including traditional paper based distance, online, and the traditional on-campus. The University is also extending its offerings to overseas-based students who, like Australian based students, may study in a variety of modes.

- The Library's services are currently oriented to providing services to on-campus students and distance education students. The new hybrid paradigm for student learning has significant implications for the Library in the provision of client services.

The mission for the CSRTF was quite simply "To review public client services with a view to making them congruent with the future direction of the University".

The task force consists of 10 staff members representing all parts of the library. The group, convened by the Deputy University Librarian, agreed to undertake the project using a scenario methodology as outlined by van der Heijden (1996). The model involves similar steps to other models of strategic planning but with some subtle differences:

- SWOT analysis,
- environmental scan – examining internal and external environments but focussing on the following developments – societal, economic, political developments, and technological (SEPT) (van der Heijden, 1996),
- scenario developments – developing a range of scenarios and agreeing on the most likely scenario(s),
- gap analysis,
- identification of critical success factors,
- planning based on critical success factors,
- implementation.

The most significant part of the process has been the development of the scenario which forms the basis for planning. The task force developed a number of scenarios, all based on bird names, and finally agreed on the Swift Scenario (Client Services Review Task Force, 1999c). The scenario is named after the White-throated Needletail *Hirundapus caudacutus* as one of its distinguishing attributes is that it is "Bulky, but as effectively streamlined as a bullet." (Flegg, & Longmore 1994, p 212) which was the aim of the task force for the library.

On completion of the preliminary draft, the Swift Scenario was presented to a number of groups for a reality check. The groups included all library staff, the Vice-Chancellor, and an invited group of academic and general staff from the university. Their feedback was recorded and incorporated into the scenario where applicable.

The Swift Scenario describes where the Library wants to be in five years time. Once the scenario

was finalised, a gap analysis was undertaken and critical success factors (CSF) were identified. Each CSF is directly linked to the Swift Scenario. Planning groups, based on the critical success factors were formed. The critical success factors are:

- 1) streamlined information access including 24 hour, 7 day a week IT systems availability,
- 2) clearly defined levels of service,
- 3) a comprehensive enquiry service including client service tracking and centralized enquiry points,
- 4) equitable access to information literacy programs,
- 5) appropriately configured buildings,
- 6) appropriate funding,
- 7) staff training and development,
- 8) planning and timing,
- 9) user and staff acceptance.

(Client Services Review Task Force, 1999c)

The Swift Scenario independently identified similar trends and drivers as the Library and Information Technology Association's (LITA) *Top Tech Trends* (1999). The trends listed below are either implicitly or explicitly identified in the Swift Scenario. LITA experts identified seven technology trends:

- 1) customization, interactivity and customer support,
- 2) assistance from librarians in selecting, evaluating and adapting of information (information literacy),
- 3) the importance of the human factor in the virtual library,
- 4) co-opting existing technologies from other industries,
- 5) accessibility of electronic resources,
- 6) authentication and rights management,
- 7) planning for emerging technologies.

(LITA, 1999)

The planning groups require considerable involvement and commitment from a large number of library staff. Although each group operates independently, there are strong inter-relationships with the other groups. Although the groups have not finalised their plans at the time of writing, significant progress has been made.

A review of the library's Information Technology Development Plan has been undertaken and all library systems have been audited for availability. Service level definitions have almost been completed, and a review of policies will soon be initiated. Client tracking software is being evaluated, and the client contact points are being reviewed. An audit of staff skills is about to

commence, and an information strategy has been initiated. Information literacy developments are occurring under the aegis of the Information Literacy Project. All groups are due to report and make recommendations to library management by Easter 2000.

The relationship between the Client Services Review Task Force and the Information Literacy Project is more than a marriage of convenience. There are strong interdependencies between the two projects. For example, some of the technological developments required for the Information Literacy Project are being addressed through the CSRTF, and conversely the information literacy factors components of the Swift Scenario are being addressed by the Information Literacy Project.

MEETING THE CHALLENGES

Central Queensland University faces challenges that are systemic to the higher education environment – economic forces, societal change, and technological developments. The services, products and policies generated by the Information Literacy Project and the CSRTF will effectively position the library to meet the challenges thrust upon it by the university as it meets its challenges.

Through the two projects, the efficiency and effectiveness of the library as an educational resource and a service centre will improve. Information literacy skills and concepts will be delivered by the university through the adoption of the sustainable information literacy teaching model, and library services generally will be more closely aligned to the needs of students, regardless of where or how they are studying.

As more members of society require more training and skilling, and the age spread of undergraduate students widens, the importance of learning skills magnifies. As more students study remotely, there will be an inherent demand for streamlined access to information. CQU Library will be positioned to effectively impart information literacy skills and concepts, and to provide streamlined access to information. The library will need to carefully examine the tension expected to be generated through the provision of 'just-for-you' information for the 'just-for-you' programs identified by Duderstadt (1999 p 4). An implication of such offerings could be the requirement for carefully tailored information packages thereby negating the opportunity to impart information literacy skills and concepts. As the library continues to make more information available electronically to students, consideration will be given to facilitating customised access as the technology develops.

Changes in computing and telecommunications will obviously impact on how the library delivers its information literacy programs and its library and information services. The two CQU Library projects will provide a service that is expected meet the demands of the "800 number and ATM mentality" (Blustain et al, 1999 p 54) as well those clients who prefer a more human approach. Convergence will impact on the availability and modes of delivery of information. It will be CQU Library's responsibility to ensure that staff and students receive the necessary "evaluative guidance" (LITA, 1999).

Just as CQU has adopted an industry solution for its administrative and financial management, the library is also closely investigating solutions from other industries to facilitate its management of client services.

The services, products and policies generated by the Information Literacy Project and the CSRTF will effectively position the library to meet the challenges thrust upon it by the university as it meets its challenges.

"To teach a man how he may learn to grow independently, and for himself ..." (Jowett, quoted in Bernstein, 1997) will be provided by CQU Library through information literacy, but it will be dependent on the library being "Bulky, but as effectively streamlined as a bullet... powerful and exceptionally fast" (Flegg & Longmore 1994, p 212).

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