

Empowering Students for Success: developments in information support for DE students in Library and Information Science.

Abstract

This paper discusses student and academic staff experiences with old and new technologies and their effects on learning outcomes. It focuses on the effects of educational philosophy, Information and Communications Technologies (ICTs), and pragmatic factors in DE delivery. Included are results of some research centred on library and information science courses offered in the distance education mode by the School of Information Studies, Charles Sturt University.

Introduction

One of the first things you notice on moving to Australia is the vast distances between areas of population. New Zealand could fit into Victoria, and there would be still be space left over. Because of this, Australia has long had a special interest in distance learning and there is evidence of it in some form since the 1940's. Schoolchildren in the bush, for example, traditionally learn through School of the Air radio broadcasts. The Internet is a new medium for the provision of school education to isolated areas of Australia. In higher education, the number of distance education courses and students is still growing.

Charles Sturt University

Charles Sturt University prides itself on being one of the leading Distance Education (DE) universities in Australia; it has, for example, been delivering librarianship and information studies through DE for over 25 years. CSU spans 8 campuses throughout New South Wales, the distance between its northernmost and southernmost campuses being over 500km.

The catchment area for CSU students is even greater, with students from every State and Territory. There are also significant cohorts of students studying in countries such as New Zealand, Hong Kong, Malaysia, Indonesia and the Philippines, and even further afield in places such as Canada, China, Germany, Mauritius, South Africa, the UK, India, Sri Lanka. In all, students of CSU reside in more than 80 different countries.

CSU now has 28,471 students [undergraduates 65%; taught PG courses 20%], **76% of whom study by Distance Education (DE).**

School of Information Studies

The School of Information Studies has students in most of the countries mentioned above, with current large cohorts in Hong Kong, Malaysia, and Mauritius. The school comprises discernible groups, Librarianship, Teacher-Librarianship, Information Technology and Mathematics. It is an interesting mix and when it works well is very fruitful. To put that in personal terms there are colleagues to whom I can refer about educational theory and

practice, and those equally well versed in technology. We willingly share our expertise – for example one of our IT colleagues is currently running tutorials for us in creating and maintaining web pages, and in developing the expertise to run online interactive tutorial sessions.

Librarianship and Teacher Librarianship at CSU

In May 2000, there were 1289 students in CSU's Library and Information Science Courses.

BA (Library and Information Science)	551 [incl. HK 85; Mauritius 36]
MApp.Sci (Library and Information Management)	415 [incl. HK 133]
MEd. and Mapp.Sci (Teacher-Librarianship)	311
PhD	12

The Distance Education (DE) Culture

In Australia, higher education has moved to an almost constant mode of development and re-development, as it seeks to address increasing demands for flexibility and quality in educational delivery. These demands are driven to some extent by competition between universities for student enrolments, student demand for cost effectiveness, and an expansion of demand for choice from those seeking education in this increasingly competitive tertiary market. The result has been constant growth in the number of distance education and part-time students, who must use a variety of modes of communication and information technology in the course of their study.

Distance Education is the fastest growing sector of tertiary education in Australia today. Indeed, in the last five years, the number of students choosing to study by distance education in Australia has grown almost three times faster than the number choosing traditional full-time on campus studies.

At CSU, we encourage DE enrolments by promoting our strong past record, our support infrastructure, and advantages for remote or full-time employed people.

However, at CSU, our research shows that the drop-out rate is greater for external students than for those on-campus. The main reasons for this appear to be:

- unrealistic expectations;
- failure to feel a connectedness with the institution;

In the first case, this covers many issues, from how to fit study in with family, work, and personal life, to expectations of the nature and level of tertiary study.

In the case of connectedness, CSU prides itself on increasingly providing flexibility, empathy and understanding to cater for individual student needs. For example, in our undergraduate library science degree, which is by far the largest in Australia, the need for face-to-face contact at the beginning of study is covered by a compulsory Residential school in Wagga Wagga. For offshore courses, where there is a cohort to warrant it, these study sessions are run in the country in which the students reside.

Some LIS courses offered by DE in other countries lament their inability to offer online enhancement because many students do not have access to internet and email. At CSU, regardless of where our students are located, they need to be able to access resources and support services to assist them in undertaking their studies and to gain maximum benefit from their experience as a student CSU. Access to the internet and to email is imperative, and we have been using the internet to support teaching and learning for a long time now.

It is against the above backdrop that thoughtful change and interaction in delivery needs to occur. An approach that adopts a learner centred way of thinking needs to be flexible, and empower the student to face this emerging environment that requires lifelong learning (Meloche, 2000).

Over two decades ago when CSU led the introduction of DE as a way of gaining a professional award in librarianship there were many sceptics. They argued that DE was but a shadow of the traditional face to face offering and that graduates of the new DE approach would be inferior. Students wishing to pursue a professional award were persuaded to consider a DE offering only if no suitable face to face program was on offer.

However, to compare DE to a face to face benchmark is unhelpful and does not address issues of substance. The comparative approach to understanding DE fails to appreciate that DE is a unique world where the symbols of quality differ dramatically from those of a face to face environment. On a recent ABC programme, *Lateline*, the author (whose name I have forgotten) of a work on copyright and ownership issues in the music industry said that one of the problems in dealing with the model is that those involved were trying to impose real life models on the virtual world, but that these models were neither apt nor helpful. The same is true of distance learning.

Realities of the teaching environment

The current teaching environment is affected by various tensions, which may be grouped under 3 main headings:

- Educational philosophy
- Information and Communications Technologies (ICTs)
- Financial/Pragmatic factors

[There is also a fourth tension in information studies, shared by other vocational courses, in that we are preparing students for a profession, with scrutiny from the appropriate professional bodies.]

Educational Philosophy

Underpinning all of our information studies courses is an emphasis on lifelong learning and the need to create independent learners who are information literate in our knowledge based society. These are global issues, as a review of education for the Hong Kong Government illustrates (Law, 1999).

... to succeed in a knowledge-based society, our children must develop the capacity and aptitude for lifelong learning. They must have a good mastery of information technology skills and the creativity and resourcefulness to harness,

share and synergise information and ideas in the global village of the 21st Century.

- Changes in government policy, and changes in the way support is provided to higher education have directed the situation in Australian tertiary education. *The Higher Education Report for 1999 to 2001* (Kemp, 1999) identified that graduates should have thinking and knowledge skills. The Department of Education, Employment, Training and Youth Affairs (DEETYA) final report on lifelong learning acknowledges that developments in information technology will fundamentally change methods of teaching and learning and stress the need for *flexibility* (Lifelong Learning, 1998 p18).

- But what does this mean for us as university educators? The HK directive sums it up:

a shift in pedagogy from the text-book, teacher centred approach to a more interactive, thought provoking and learner centred approach.

- Traditional teaching is often criticised for being inflexible, teacher centred, textbook orientated, and boring. Emphasis in traditional curricula is placed on the product of learning; less emphasis is placed on process as a guide to learning. More ‘enlightened’ learner centred approaches to education employ a range of individual and group models to inform learning and a range of qualitative instruments to assess learning. Measures of how students learn and are learning are regarded as just as important as what score the students achieve.

Teaching in the DE world can be an example of the worst teaching. Materials can be sent to students, they can be treated as clones, they can be rewarded for reproducing the instructional materials in their own words. Alternatively, the DE world can be harnessed to create thinking learners who are treated as individuals and have both individual and group learning experiences. Practice in Australia is becoming more innovative and flexible but even so, it still usually involves the physical distribution of printed materials both to and from students.

Information and Communications technologies (ICTs)

New ICT-based teaching tools employed by DE instructors are many and varied, enabling lecturing staff to develop new learning strategies which are not dependent on students being in a specific place at a specific time. Our DE strategies have always been based on this, and ICTs give us further opportunity for flexible learning practices. Impediments identified by Janice Rickards, Griffith University, in a recent paper to the IATUL Down Under Conference, such as the need to ensure student access to these technologies, have already been addressed and resolved at CSU. ALL students entering CSU LIS courses now require quality internet access in order to successfully complete their degree.

Investment in information technology, computer assisted courseware, and Internet based resources is certainly important, and is having a major effect on the type of experience that students, particularly Distance Education students, are having while at University. While computers, systems, networks and programs provide possibilities for communication, the ICTs do not always advantage students in terms of access and feedback and their experience of learning.

Kirkwood (1999) of the UK OU in an address to the 13th annual conference, *Asian Association of Open Universities* outlines the diversity of learning environments and highlights the need to know more about the individual use of ICTs in DE. Present experience suggests that, although developments in technology are capable of a wide array of teaching and learning enhancements, there are limitations to what is practically possible. There a number of issues which have to be addressed.

Technological developments and implementation

Enthusiasm for 'exciting technological innovations' that include a 'dazzling variety of new products which will transform our...institution' (Green,1999) can cloud the realities of providing a worthwhile learning experience.

Universities think it is 'trendy' or 'cutting edge' to engage and harness the latest in technologies. At CSU it is seen very much as a selling point, but we have learned not to view ICTs as the panacea for everything..

Student Access to ICTs

CSU struggled for many years about the equity issues involved in requiring students to have electronic access in order to pursue their studies. As mentioned earlier, ALL students entering CSU LIS courses now require quality internet access in order to successfully complete their degree.

- At May 1999, about 47% of Australian households (3.2 million) had computers, a 13% increase over May 1998.
- By May 2000, 54% of the households in Australia, (3.8 million), had access to a computer at home, a further 18% increase.
- At May 1999, about 22% of households (1.5 million) had Internet access, a 57% increase over May 1998.
- By May 2000, the number of households with home Internet access rose to 2.3 million, or 33% of all Australian households, a further increase of 53%.
- While the proportion of households with home access continues to rise for both computers and the Internet, the difference is decreasing. Higher levels of access occur in households with higher incomes, in households with children under 18 years and among households located in metropolitan areas.

ICT issues for students at CSU

- Minimum standards of equipment. At CSU we recommend to students certain minimum requirements for electronic access. However, because of the flexible nature of DE, students can take up to 12 years to complete their undergraduate degree. The IT minimum requirements have gradually been raised and those students who enrolled early may not have the right standard equipment, and will need to upgrade.
- Internet Service Provider. All students on enrolment are automatically given an ID password etc. However, because there are limited dial-up facilities and it is often slow and/or expensive to use the University Web server, most students will opt to use their

own ISP. This can limit the usefulness of facilities like Listservs unless the lecturer or support staff recreate the lists of email addresses.

- Student Inertia. For each subject at CSU the lecturer is offered a range of facilities which include a Listserv, a Forum and 'Chat', ([Show relevant page in learning materials](#)) Students now also may submit assignments electronically. Many lecturers don't bother with the Listserv because of the problems outlined above. Getting students to use the forum and chat is not easy. Our research indicates that unless there is an incentive to use the forum (e.g. it counts towards assessment) only a small number of students use it. In response to evaluation questions, many students indicate that when they come home from work tired they concentrate on assignments and don't want to be bothered with extra items.
- Jen Harvey & Nora Moge (1997) give suggestions of different ways that students might be motivated to use the technology that we are providing. Our own enthusiasm and belief in the materials we are using is crucial, and we need not only to make the content relevant and use appropriate technology, but also consider as many of the following aspects as well: "*make it supportive, make it assessed, give the students ownership, make it shared, make it properly integrated, make it interactive, make it competitive, set targets, make it understandable, be an enthusiast, enhance students' self confidence, make it fun - for you and for the students.*" We are learning now that we agree with their conclusions that it is important to be able to identify several reasons for the students using the material – and the more the better.
- Our IT support unit gears everything that is web-based to the 'lowest common denominator' and that has to be taken into account when designing and providing courses.
- It takes a considerable investment in time and effort to develop systems and procedures, and once they are implemented they tend to resist change (Lifelong Learning, p.18). This is especially so if it is coupled with the tendency of the IT services (CSU) to push for greater use of IT facilities for their own sake 'because they are there'. This is the antithesis of flexibility and responsiveness to change. If we are to shape our destiny and not be 'slaves of a technological treadmill' (Green, 1999), and if use of online facilities is to mirror the framework suggested by the Government in that it 'responds to students' preferences about study options' and provides 'high quality learning experiences which meet the needs of individual learners' (Lifelong Learning, 1998 p21), then it is important that any use of ICTs be learning centred, and that its use increases engagement with students, between students, and with learning resources (Kirkwood, 1999).
- Evaluation of learning resources. It is all very well to offer a comprehensive range of learning resources, but we need to know whether what we offer has any value to the learner. For instance, in a recent Australian study of first year students, printed learning guides were found to be popular but books of readings were not. *'Students rated the use of email highly but not the use of chat groups. Certain kinds of web sites shared mediocre ratings with some kinds of print material. These findings seem to suggest that whether or not students found a particular learning resource helpful is not linked to whether the resource being used is traditional or newest technology. Something deeper seems to be operating here. It may well be that how different resources are*

used is a crucial element in determining student satisfaction.” (Ferman and Andrews, P. 6)

- For our offshore students, some major issues that need to be addressed include online access difficulties, interruptions to power supply, high telecommunication, low per capita income of students, cultural factors such as a perceived reluctance to study online unless there is considerable face-to-face, teacher-student interaction, and cultural adaptation of learning materials.

The words of Green (1999), an academic in the Department of Engineering at the Australian National University, should not be taken lightly, especially with regard to provision of distance education, *‘New computer and communications technology is pushed as a panacea for access, motivational and budget problems.’*

Human contact

Despite the hype that surrounds the ever-increasing array of communication technologies, there is still no virtual communication which is nearly as good as face to face. E-mail, forums, audio tele-conferences and virtual conferences give greater ease of access to distance learners, and while it is true that many of these are used for free-range chat (a whole other argument), the spark of incidental face to face discourse doesn't tend to happen. Our research shows that most e-mail consists of requests for extensions to deadlines on assignments, or to clarify something in the study materials, and most postings to the forum are to make contact with other students, or to ask specific questions about assignments.

Some groups with on and off campus cohorts are working towards providing both on campus and DE students with almost identical learning activities and resources including:

- Electronic communications (forum, email)
- Lecture presentations available on the web
- Guest speakers' presentations available on the web
- Web sites as a feature of the learning experience
- Library database searching help available via the forum.

However, some research involving content analysis of CSU online forums is exploring new roles for online DE learners as active participants rather than passive recipients and the consequent changes for the role of the teacher. For example, one project learned that when they compared forum participation over two years during which there was varied input by teaching staff, involvement in the forums dropped considerably when the lecturer was not involved (Bowles).

At a recent seminar in Wagga Wagga on *Leadership and learning communities*, Gary Hartzell, a Professor of Education from University of Nebraska, stressed the need to foster *communities* in any kind of learning and noted within this, the importance of *incidental* communication. This is, apparently, a hot topic for debate in the USA, and not just in learning environments. Hartzell cited one of the large corporations who were building new multi-storey offices in the shape of an octagon. On every floor, in all 8 corners there was a coffee machine and a water cooler. They hoped to foster incidental communication, noting that people are more and more office bound. How can we do this in the distance learning

environment, which can seem sterile? A CSU study showed that most students have found that online chat offers peer support; however, not all of the students find that it facilitates their learning (McLeod). We are trying to develop strategies to take this into account.

Financial factors

We are all under financial constraints created by internal and external forces, the net effect of which for academics, and for teaching and learning, manifests itself in two main ways that will be familiar to you:

- It is important to increase student numbers, whilst reducing academic staffing costs, with the result that each academic is 'servicing' more students
- There is constant pressure to reduce costs.

For example, administrators in universities can identify easily aspects like examinations and books of readings as cost centres ripe for the plucking. From their point of view it makes sense to abolish them, or at least reduce them in number and size. However, such a point of view is based on economics rather than student learning needs. Green (1999) identifies that cost reduction has been seen as a motivation for introducing new technologies into education.

I worry when I read of an academic in an Australian university recently promoting an approach which sees web-based, interactive distance learning supported by "intelligent databases and automated response systems." (Alcorn). It is seen as a means of creating lighter teaching loads and thus saving costs. However, this approach assumes not only that students will learn from each other, but also that students tend to ask much the same type of question in an area, so the answers stored in a database can be churned out when required. This rejects the clear truth that no two students will ask the same question in the same way, nor require the exact same answer to a similar question. It ignores that students come to a subject with a range of levels of prior experience and attainment, and with clearly different social, work and family backgrounds.

One of the more alarming aspects is that technology is seen as a cheap alternative to more traditional forms of teaching. Yet, Green cites nine studies comparing online text with paper/print equivalent. In almost all cases, print based form was quicker to use and was preferred. Also there are hidden costs. We have just started a new electronic assignments submission system, but one problem with it is that paper and printing costs are transferred from students to the University. Clearly the administrators didn't see that coming!

Just as insidious, is that an attractive financial imperative is to use the potential of new technology to widen audiences and *standardise* delivery. Green (1999) envisions, (based on the West review (*Learning for Life*, 1998), which, incidentally, he accuses of regarding technology as essential and teachers as optional), a scenario in Australia towards the tutorless university in which knowledge is reduced to 'standard learning modules grouped into 'packages of learning resources'. He further argues that there will be an increase in demoralisation and higher turnover among 'dis-empowered tutors, assessors and graders'.

That is something you won't see happening at CSU in library science, where we see our present and future as being courses with a people focus – after all we are providing education for those who must work with and serve people.

Time Factors

There is a perception that:

- if one teaches solely through DE, there are aeons of time at one's disposal.
- increased use of ICT, eg for online marking, will save time
- ICT allows the academic greater flexibility.

The realities of those perceptions are **UNTRUE**, **UNTRUE** and **PARTLY TRUE**

One of the great outcomes of our use of ICTs is that contact with DE students is increasing. I can spend 5-6 hours every day sent in answering and dealing with students' issues arising through e-mail, 3-4 hours on the phone, perhaps another two hours on forums, and up to 5 hours on chat sessions. However, add to this the number of subjects we teach (I have taught 7 this year), constant research for and revision of mail packages relating to these, preparing for additional educational experiences and marking, it is often difficult to spend quality time on research and publication.

Provision of the Learning Experience

Within all those constraints then, we come to providing the learning experience. In LIS at CSU, we aim to achieve the educational ideals of flexible learning which creates independent learners, and the preparation of students for a professional vocation.

We have for a long time been developing and evaluating new models of learning for DE, which incorporate all the philosophical points already raised, and where appropriate, take advantage of the new technologies.

The current academic environment requires staff to:

- develop the skills of lecturing and tutoring using text based and other on-line media;
- further develop their facilitation/moderation skills;
- ensure student participation by effectively integrating on-line course elements with assessment strategies and methods;
- give feedback to students (especially on assessments) so that they are received in a motivating and constructive way, when normal 'indicators' (eg, body language, tone of voice) are not present;
- support students from other cultures by being aware of, and accommodating, cultural differences in learning styles and communication practices;
- adapt the management skills of dealing with students effectively on a one-to-one basis, especially where students can and will contact lecturers at any time, and expect an immediate response;
- manage and set realistic expectations for themselves and their students;
- manage a potentially increased and diverse workload;

- learn new technical skills, e.g. to incorporate other media, (eg audio, video and video-conferencing) into the subject materials online.

Learning Materials Online

The internet presents us with many possibilities for new developments in provision and development of learning materials, and adds to the resource possibilities. But how do we embrace the possibilities and opportunities that are still being developed and are available now through the convergence of broadcasting and telecommunication and computer technologies? In some ways the same arguments that surrounded developments in educational technologies in the 1970's and 1980's are re-emerging. I suspect that the answer will be the same in that we do not have time to make our own DVD presentations, for example, but rather we will use a variety of resources that are already available. High quality online education is neither low cost nor without problems.

My belief is that there needs to be care with conversion of courses and subjects to online format. A number of studies in Australia and Canada show that there is a resistance, by some students, to use these and if all subjects are online they become overloaded. Literature on information seeking suggests that the more 'barriers' or disincentives' there are, the less a seeker, or a student in this case, is likely to use them.

The experience of any academic will tell you that all students are different and respond to different stimuli and have unique ways of learning. Adrian Kirkwood's article (Kirkwood, 1999) shows clearly that there is resistance by some students to use online facilities, often dependent on personal circumstances. There can also be linguistic misunderstandings, misunderstanding of cultural context cues, assessment difficulties, online participation differences, administrative problems. In an interesting article on *the impact of personality on approaches to learning and information behaviour*, Jannica Heinström (2000) re-emphasises the individuality of learners and information seekers.

Assessment

At a recent colloquium on assessment, organised by CSU's Centre for the Enhancement of Learning and Teaching, (April 2000), David Boud, Professor of Education at University of Technology Sydney, described assessment as the single most important element, to the student, in distance learning study. Students equate the learning experience with assessment. Assessment is part of the frequent feedback needed if learning is to be sustained.

The credibility of both the assessor and the assessment are critical factors in any form of assessment. In the library and information disciplines it is particularly important that instructional design and the assessment of learning utilise the principles of resource based learning and information literacy models if it is to be credible in the market place. Assessment must be designed to measure what has been learned, not necessarily to measure what the student knows.

Instructors who feel the need to demonstrate the legitimacy of the DE model may over-assess. But the greater the emphasis on assessment, and the greater the time devoted to learning (or, cramming) for the exam, the leaner will be the genuine learning. Effective

learning will more likely occur where students are provided with adequate time to reflect on what they are doing, where students are required or encouraged to take some responsibility for their information seeking and where students learn through analysis and evaluation that they are guided towards and not merely given. Requiring students to use diaries and thinking logs is one appropriate way to encourage this. Another is to encourage students to use electronic tools such as Forums, Chat, MOO etc. Providing a reward structure to this involvement, and incorporating positive and constructive group work and peer review processes will reinforce a learner centred culture. Feedback should deal with learning processes as much as with subject learning.

The importance of support

Still on a practical note, one of the things that I have found at CSU is that the level of support by the University is excellent, largely because, as the student statistics indicate, the majority of the University is geared to DE and that makes a difference. It is one of the selling points of the University and a reason why students choose CSU. Although the academic outcomes are important, it is often because the systems are in place that the University generally is perceived by students as 'efficient'.

Support for DE students comes through personal, accessible and flexible student administration systems; opportunities to improve skills in online learning, academic skills development, maths, statistics, career management, personal development and making the transition to tertiary study; counselling; help with disabilities; library support; IT help; and through the strong support of academic staff, through staff training and development, instructional design, IT systems, etc.

Conclusion

CSU's experience with effective learning through DE declares that flexibility and constant development are keys, and, with increasingly more time and resources allocated to discussion, research, training, and support for innovation, these are a strong part of the organisational culture. It has become increasingly obvious that students can be empowered to learn and to succeed by being able to choose their means of access to learning resources and the means of delivery.

To return to my earlier statement: we are setting our students up for lifelong learning. We attempt to deliver that balance between

what the profession requires as core knowledge, skills, abilities and values;
what will help get them employed; and
what will encourage them to become lifelong learners.

That balance also assumes that our approach is learner-centred, that judicious use is made of new and old technologies, and that we must not be driven by financial agendas alone.

"... online teaching and learning can be done with high quality if new approaches are employed which compensate for the limitations of new technology, and if professors make the effort to create and maintain the human touch of attentiveness to their students."
(Teaching at an Internet Distance).

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