

A New Canoe to Cross the Sea of Learning

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Abstract

The World Wide Web is an exciting new medium (“a new canoe”) with which to provide education and training to individuals around the Pacific and beyond. This paper examines the issues involved in the provision of Web-based education and training courses, as part of formal degrees and for ad hoc professional development. Developing elements of “the virtual university” necessitates finding ways to overcome isolation of students, and to provide relevant and intellectually challenging material to students who come from a wide diversity of backgrounds (educational, professional and technical) in both developed and less developed countries. Factors considered in the paper include instructional and information design; academic and technical support for students; and the educational policy framework within which such courses are developed. Many of these theoretical and practical issues are viewed within the model of the joint programs in Audiovisual Management and Preservation Management now being developed by the School of Information, Library and Archive Studies, University of New South Wales, in partnership with Australia's National Film and Sound Archive and the National Library of Australia .

In traditional Micronesian navigation the canoe is seen as stationary while the world moves by or comes to the canoe. The canoe's place on the sea is determined by its relationship to key navigational stars as they rise and set on the horizon. (Gladwin, 1970) In the same way, when we explore the Internet, we remain stationary at our terminal and, by using key navigational tools such as URLs and hyperlinks and the World Wide Web, distant sites can be brought to our side.

The development of the World Wide Web since 1989 has enabled computer and telecommunications networks to be utilised extensively in the delivery of educational courses. The ease of use and multimedia capabilities of the Web, are quickly turning it into a standard medium for communication. This is communication in its broadest definition, incorporating interpersonal communication, marketing and public relations and access to large storehouses of data and information. This new technology is one of the principal challenges for education in the next century, as well as being one of their possible solutions.

Since ancient times formal higher level education has taken place in universities. Today's campuses trace their roots back to the schools of classical Greece and Rome, through the faculties of Bologna and Paris in the 12th century, and in Asia principally from the Confucian schools in China and Vietnam, such as the Temple of Literature in Hanoi where examinations to become a *mandarin* were held from 1484 to 1878. Such institutions have traditionally been centres of learning where students come physically to listen to lectures by learned professors, take part in seminars, participate in formal and informal discussions, undertake research in laboratories and libraries, and undergo a formal assessment procedure to earn a title or degree that carries some academic accreditation.

However, many potential students for a variety of reasons -- social, geographic or economic -- may not have the luxury of full time attendance at a university, particularly to update or extend both their skills and knowledge. Rather they are looking for convenient, 'just-in-time' courses and continuing professional education. Nor, in these days of discipline fragmentation, can many university schools (including those of information science and management) hope to employ staff who are experts in every aspect of specialist field. A further factor to be considered is the geographical dispersal of persons who may be interested in a particular specialisation. Without large numbers traditionally delivered university courses are generally not economically viable, but dispersed students could, if brought together, from around the world, constitute a viable cohort. These are the driving factors leading educators around the world to look at a variety of methods for 'flexible delivery' of courses, both for subjects within formal degree structures and for continuing professional education purposes.

“The feeling of sun on your face”

A key issue to be faced in designing courses for such flexible delivery is the need to maintain the quality of the learning experience. In recent times educators have sought to foster student responsibility, dynamic generative learning, authentic and relevant contexts, collaboration between students and teachers, and reflection -- a complex set of characteristics described as a “rich learning environment” (Grabinger and Dunlop, 1997; Fowell and Henninger, 1998) or what the Vice-Chancellor of the University of New South Wales, Professor John Niland likens to “the feeling of sun on your face”.

Earlier forms of distance education have found it difficult to replicate the rich learning environment to be found on campus, and have had to battle isolation and individuation of the students. Using the postal system as the medium for transfer of printed lecture notes (and sometimes audio or video tapes) and for the return of student work, has the additional problems of delay and of total reliance on self-motivation by the student to keep up with the work to be done, in the face of everyday distractions and demands on time. Some distance courses now use CD-ROMs to carry the learning resources but while utilising computer technology and allowing interactivity, this medium does not overcome the problems of student isolation and individuation. Using radio or television helps to increase the likelihood of regular 'attendance', allows a more personal familiarity with the lecturer, and also provides opportunities to introduce interesting and varied material, incorporating film and sound. In most cases, however, the communication is still one-way, or at best allows a limited response from the student, generally in asynchronous mode.

The World Wide Web provides an environment that can, to some significant extent, overcome these disadvantages, and can come close to matching (some say it may even exceed) the rich learning environment of a traditional campus through the construction of a 'virtual classroom'. It is this Web-based mode of delivery that we liken to a 'new canoe' that allows students to feel sun on their face as distant sites and new concepts are brought to them.

Web-based courses

A fully Web-based course or 'virtual classroom' is one in which all aspects of the course — enrolment and course administration, content delivery, supplementary reading materials, interpersonal communication, collaborative projects, tests and other assessment, lecturer-student feedback — are all delivered via the Web. Currently, there are few examples of such 'fully-webbed' courses available. Most courses that use network technology do so for only

some elements, for example: making available course lecture notes; providing access to Internet resources; or utilising electronic mail for communication between students and lecturers.

One of the major pedagogical benefits of flexible learning is that it allows students to progress at their own pace. (Taylor, 1994) It also enables them to study the learning resources at times and places most convenient to them, and to review the learning resources as often as they need to do so. The World Wide Web is particularly suited to this form of delivery as all the student usually requires is access to a computer, the ability to use a web browser, and a personal student account. Some of the advantages of using the World Wide Web in flexible delivery are:

- it makes possible rapid and timely interaction between learners and their instructors, and among learners;
- it allows relevant information resources available from other sites to be easily accessed;
- it is attractive and easy to use;
- it can incorporate text, still and moving images and sound into the learning resources;
- course material and other information can be dynamically updated and made immediately available to the students.

Challenges

The steps involved in the design of the course material are threefold: instructional design; writing the course content, and information design.

The instructional design is the definition of the subject —its objectives, the topics and relationships of individual modules, and the specific objectives and content for each module. Each of these elements needs to be examined and embedded into a model that provides a rich learning environment, such as group discussion questions, case studies, and formative and summative assessment tasks.

In contrast to a traditional lecture, delivering course material on the Web is akin to publishing, and therefore involves considerably more writing and editing. Reading material on a screen is not easy, so care must be taken with reducing the density of the material by using relatively short sentences, by using good layout and design techniques, and by the addition of appropriate graphics.

Once the course content has been created it needs to be separated into 'chunks' for presentation on a screen, bearing in mind that the optimum maximum number of levels for hypertext navigation is only three. Appropriate navigation devices need to be created to allow the student to move through or across the levels and to jump in and out of the course material to external documents on the Internet. The richness of the hypertext environment adds an additional degree of complexity as research and experience has shown that many students will not access the material sequentially.

In the traditional classroom there is an explicit community of students in which normal human communication takes place; but this community is neither overt nor obvious on the Web. Certainly, 'virtual communities' are alive and well; one only has to take part in listservs or IRC sessions or to read the research of Sherry Turkle to understand the power of communicating in this environment. In 'fully-webbed' courses the task from the very

beginning is to create for the students a sense of belonging to a group, with a degree of familiarity and shared interests. Most of the anecdotal evidence from 'fully-webbed' courses suggests that it is very difficult to motivate students to take part in the group discussions. "The real life of the class as an interactive body takes place in threaded discussions. It takes a while for students to realize this, as many seek to engage a discussion with the instructor only, responding to the posted questions or topics, but not joining in a dialogue with each other, reading and commenting on each other's statements" (Reddell, 1997). A participation mark is one way of getting increased online activity but unless the students are motivated by the learning resources and process this too is only a partial solution.

Australian experience

Australia has a long and rich experience in distance education due to our widely scattered population, which since last century has relied on distance education, mainly correspondence courses.

In 1911 the University of Queensland began extension courses, and these have been particularly prevalent in the field of agriculture. In the 1920s and 30s the state education departments developed extensive correspondence programs. The School of the Air, begun in Alice Springs (Northern Territory) in June 1951, is still a major method of delivering primary school education to outback children via radio-telephone.

The University of New England (in northern New South Wales) developed a strong reputation for distance education programs delivered through the postal system, and these were pursued also by Charles Sturt University, the University of Southern Queensland, Edith Cowan University and others. In the 1980s the overseas experience of the Open University was picked up in Australia and different consortia began using the model of teaching via television or radio broadcasts.

Australia's international education role

Australia's geographic location within the Southeast Asian/Pacific region has led it to develop a role in educating, mentoring, and advising in a variety of fields. Some examples in information management are:

- The National Library of Australia's Regional Cooperation Programme and the International Development Program of Australian Universities, which over a long period of time have both worked to build up university and national libraries as key elements of infrastructure through consultancies, training and provision of equipment and bookstock;
- The Australian National University's provision (with funding from the Australian government) of the first data telecommunications for Vietnam, and commissioning the School of Information, Library and Archive Studies conducting the first Vietnamese Internet workshop in 1994;
- The BISA (Bibliographic Information Services for Asia and the Pacific) program at the University of Sydney and later at the University of New South Wales, which has provided short courses in library and information management since 1981 to over 200 information professionals from 20 countries in Asia and the Pacific.

SILAS Initiatives in Flexible Delivery

The School of Information, Library and Archive Studies (SILAS) at the University of New South Wales has been involved in all of the programs mentioned above. In the past year we

have turned our attention to the new area of Internet delivery and have embarked upon three innovative programs:

- a suite of subjects in audiovisual management to complement the School's other specialisations in librarianship and records/archives management;
- a subject focussing on the preservation and conservation of library and archive materials; and
- a subject in records management in the electronic environment.

Each of these specialist programs has been initiated in partnership with the leading institutions in their field.

Audiovisual management

In Australia the institution charged with the primary responsibility for ensuring the survival of our audiovisual heritage is the National Film and Sound Archive (NFSA). The Archive is a semi-autonomous agency of the Department of Communications and the Arts with headquarters in Canberra. It manages a large collection of about two million audiovisual items including films, audio and videotapes, discs, and cylinders. In terms of its collection development and management policies, priority is given to materials associated with Australia or Australian talent. It also has extensive international linkages especially in the wider region through the South East Asia-Pacific Audio-Visual Archive Association (SEAPAVAA).

SILAS and the NFSA have a long association dating back to the establishment of the Archive in 1984. In 1995 the opportunity arose for the NFSA to play a major role in the delivery of one of the School's elective subjects - *Managing Moving Images*. Subsequently the scope of the subject was expanded to include sound materials. During this time the NFSA had also been contracted by ASEAN and the Australian Government to run a series of intensive workshops on various aspects of audiovisual management. The success of both the SILAS subject and the training workshops led SILAS and the NFSA to think about options for a formal academic program in audiovisual management.

At this time only one university-based program in film archiving (University of East Anglia, Norwich, U.K.) was in existence. In addition, a one year, non-university program in film and video preservation (George Eastman House, Rochester, New York), was also being established.

In 1996 SILAS and the NFSA entered into a partnership to provide a specialist program in audiovisual management delivered via the Internet. Two courses were developed and offered for the first time in the second half of 1997. These were *Foundations of Audiovisual Management* (now called *Audiovisual Management*) and *Preservation of Audiovisual Collections* (now known as *Preservation and Conservation of Audiovisual Materials*). Another course, *Advanced Audiovisual and Multimedia Management*, is to be offered in the second half of 1998.

Preservation Management

The second initiative was developed for the wider community of libraries and archives — *Preservation Management for Libraries and Archives*. The chief content writer for this course is Wendy Smith, formerly of the National Library of Australia (NLA), which has given its

endorsement to the course. The content was originally developed with assistance from a Robert Vosper Fellowship from the International Association of Library Associations and Institutions (IFLA). This course is an introduction to aspects of preservation management for libraries and archives and the role of preservation within the broader context of collections management. It covers the basic technology, properties and deterioration of the materials of libraries and archives and considers methods for improving their long term preservation. The interdependence of librarians, archivists and conservators in preservation planning is examined, and the basic elements of a library or archives preservation plan considered.

Records Management

Our third initiative is as yet in its early days, but we are hoping to develop an Internet program in Records Management which we hope to have available for enrolment during 1999.

Methodology

In all these initiatives we followed the model discussed above of conceptualising our work in three distinct phases: instructional design; writing the course content, and information design.

A project team was assembled; this consisted of instructional design specialists (University of Texas), subject specialists (NFSA, NLA and SILAS), and information design and web publishing specialists, editorial staff, technical support and a project manager (SILAS).

Analysis of our environment, we concluded that all the criteria for 'fully-webbed' courses were present:

- a need within the information profession for a specialised program;
- access to international experts in the field;
- a geographically dispersed student market;
- potential students already working in the field and wishing to upgrade their skills or formal qualifications; and of crucial importance
- the relevant technologies had matured to the point where we could select an appropriate software vehicle, be confident of stability of platform and delivery; and assume that sufficient potential students could have access to the minimum technological configuration to participate effectively.

We selected a program called TopClass™ which has been designed specifically for distance education projects. TopClass™ requires no proprietary software and can be accessed through Netscape. It allows students to read course material, send e-mail to their lecturers and to each other, to complete assessment tasks, and to participate in group discussions. Module content can also be updated constantly and the software possesses a number of useful administrative features. There are two demonstration courses available through the TopClass™ website at <http://www.wbtsystems.com> and an overview of the SILAS subjects is available at <http://www.silas.unsw.edu.au/silas/distedu.htm>

We designed each course with ten or eleven modules, each of which was structured to provide a richness of content and environment, with overall contextual information (introduction, objectives, key concepts), 'lecture' material, clickable glossaries, external links to Internet resources, threaded discussion groups, case studies for small group projects,

automatically corrected quizzes, email access to tutors and to other students in the class, and technical support.

Implementation

The 42 students in the first cohort were a mixture of postgraduate students enrolled in the Master of Information Management formal award program at UNSW, and information professionals working in the field, who enrolled in the particular course for continuing professional development. The external students came from all around the Pacific: including Australia, New Zealand, Papua New Guinea, Hong Kong, the Philippines and the United States, as well as beyond: from Germany, the Netherlands, Israel and the United Kingdom. The decision to mix the two groups of students was consciously made in order to provide a variety of backgrounds and work experiences. We found that this worked reasonably well, but could be improved by giving the more experienced students a mentoring role toward the less experienced (and this is being introduced where appropriate in the 1998 classes).

We also found that not all students became involved in the discussion groups, unless there was some sort of assessable task involved; the assessable group projects worked very well with lots of chat going on among the students. The sense of community with one group was strong enough among one group of professionals to continue even after the formal part of the course finished, and by the time they signed off the course for the last time, they had posted 42 messages (while the average for the project part of this course was 15).

Over all, the feedback from the students was that the course material was of a high standard, the delivery mode was very convenient, built-in links to Internet resources were excellent, and email access to and feedback from the lecturers was very good. It was conceded that more effort was required to motivate the students to participate actively in the discussion groups from the very beginning. It was also felt that there needed to be a facility for informal discussion among the students, which was not monitored by the lecturers—the coffee shop equivalent. It was also noted by a number of the students that participating in a course delivered over the Web was in itself an excellent learning exercise.

Conclusion

Our experience has left us in no doubt that utilising the new information technologies for delivery of educational courses holds both challenges and solutions for information professionals and educators.

The principal challenges surround the cost of developing the courses. Our experience confirms many other reports that flexible delivery of education is by no means a cost-saving mechanism if a rich learning environment is to be maintained. An enormous investment of time is required in all three phases of course development, as well as in delivery, where continuous involvement by teaching staff is required. Further, the course material must be revised and updated to take advantage of new resources and approaches to the subject.

We are convinced that Web-based courses can provide the rich learning environments to be found in well-designed courses held in traditional classrooms. There is much to be understood about how people fully maximise their learning potential in the 'virtual' classroom, but we believe that it is an environment that can develop students' creativity, independence and responsibility. Finally, the new technologies certainly hold some of the solutions to the problems of delivering specialised education to students who, for any reason, are not able to

participate in traditional classroom-based education, but who can cross the sea of learning in this new canoe.

Note:

A number of staff members from SILAS were and continue to be involved with these projects: Maureen Henninger, SILAS' Co-ordinator of Continuing Education, developed the conceptual design of the information delivered to the students; Paul McNally, one of School's Visiting Fellows with considerable experience with distance education through his work at the University of Southern Queensland, prepared a number of clear and concise procedure manuals for content writers as well as students; Dr Paul Wilson, a lecturer in the School, is the academic co-ordinator and content editor of the courses; and Dr Helen Jarvis, Head of School, has undertaken many of the administrative and academic liaison tasks. Dr. DeLayne Hudspeth, a specialist in telecommunications and instructional design from the University of Texas in Austin, also worked with the team.

The NFSA has committed considerable staff resources to ensuring the success of the Audiovisual Management specialisation. NFSA staff involved in developing course content are:

Audiovisual Management - Ray Edmondson and Meg Labrum

Preservation and Conservation of Audiovisual Materials - Mark Nizette, Bob Pymm, Ian Gilmour, Ken Rowland, Mick Newnham, Wanda Lazar, Matthew Davies and Janine Walkolm

Advanced Audiovisual and Multimedia Management - Meg Labrum, Graham Evans, Elizabeth Jamieson and Kate McLoughlin

In terms of Preservation Management in Libraries and Archives, the chief course content writer has been Wendy Smith who now works as a preservation consultant.

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