

and the creation of an information-poor underclass.

Law firms will be major beneficiaries of the information revolution. Precedents, client marketing, in court presentations, in-house training, World Wide Web kiosk information and marketing sites for foreign clients are all set for drastic changes. There have already been obvious advantages in cost reduction and speed offered by the availability of cases and legislation in full text search and retrieval systems. One can expect to see links between law firms and the universities' virtual library opening up even greater possibilities.

#### **Where does computer aided learning fit in the tertiary education equation?**

R Mason

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There is evidence that computers are having an impact on curriculum development, instructional planning and assessment as well as on student learning. In the area of curriculum development, there are two basic strands for a syllabus comprising computers and the law. First, computers may be relevant as a specialist subject examining legal issues raised by the manufacture and use of computers. Secondly, there is the use made of technology by lawyers — the collection, classification, storage, retrieval, manipulation and evaluation of information by means of computers.

There are various instructional strategies available through the use of computers. In the domain of knowledge representation, the innovation of hypertext technology is beneficial. Research shows that improved learning occurs where students are not just passive recipients of knowledge but are actively involved in the process of learning, in constructing their own world picture from experience. Learner control of

the learning experience is an important instructional design feature of hypertext used in multimedia. But computers can also provide students with the opportunity to test their ability to apply knowledge by testing their problem solving skills. Computer aided learning of basic principles may be valuable in these days of burgeoning curricula and larger classes and can free up precious class time for tackling more open ended problems.

While problem-solving exercises may also be used for assessment purposes, there are significant difficulties in using computers for assessment. These include the large investment of time and effort required to write data banks of questions, particularly if a range of question types is used. The items need to be unambiguous, capable of discriminating between high and low achievers and free from cues that might lead to response biases. More worrying is the possibility that questions may be directed at factual knowledge and not test higher order skills and the objectives of the course.

The more fundamental problem with using computer-aided learning programs is their lack of integration into the assessment regime. Unless students can see that working through computer programs will improve their performance in formal assessment items, such as assignments and examinations, it is unlikely that they will make use of them.

In a general sense, computers may contribute to learning through word processing facilities and electronic database searches. On the specific matter of student learning, empirical studies on available research indicate that computer assisted instruction in classroom teaching may improve learning and consistently reduce the time needed for instruction; is reasonably well liked by the students; and is probably most effective when used with conventional instruction.

Students appreciate the anonymity, politeness, and patience of the computer, the immediacy of the feedback, the specific guidance and being able to learn what they want to learn at their own pace. Negative comments are that the exercise may be treated as a game rather than a serious academic activity and the fact that computers cannot pass judgment on student queries.

Given the multidisciplinary nature of development teams, their technological complexity and their high cost in terms of time and resources, infrastructure support in the university context is particularly important for the development and implementation of computer aided learning. Infrastructure support also involves implementation of computer aided learning programs. For example, whether the institutions deliver multimedia educational technology on campus once the programs are developed. The final point on infrastructure support is that the degree of commitment of the university, the department and the teaching team to integrating the new technology, is crucial. Numerous commentators warn of the need to approach the issue of computer aided learning as part of an educational strategy, not as an end in itself.

#### **Teaching a law seminar over the Internet**

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Once communication is unshackled from the confines of place, the world becomes a classroom occupied by a world of students and a world of teachers. For students looking for coursework, the Internet may provide learning opportunities without limitation. Internet email is fast and so cheap it is virtually free. But speed and cheapness also constitute the major drawbacks of email because without some sort of self-imposed controls or software-managed filters,

one can easily drown in an ocean of daily email messages.

Internet email means that students and teachers who have access to networked computers or to a commercial on-line service can communicate with each other regardless of time or geography with little regard to cost. Nothing prevents a group of students and a teacher from forming a course in which most or all of the necessary communication among them takes place through Internet email. Email, however, cannot provide physical presence or oral speech. The interactive and immediate stimulation of a one-on-one tutorial, which can be a rich learning experience for a student and force responsiveness from both parties, will not be suitably substituted by a read email message for the student who learns best by listening to spoken words from a good lecturer. It cannot provide behavioural speech and body language or the immediate interactivity of a stimulating group discussion. Email permits group interactivity but it is not immediate.

On the plus side, email is written speech and written speech is fundamentally different from oral speech. Oral speech comes with all sorts of non-verbal clues that help convey meaning. Where a speaker can go back and rephrase, the writer must assemble all parts of the message and make sure that each part is clear. Written speech tends to be more concise. Writing forces reflection and often forces the writer to understand his or her own thoughts. Because writers will usually re-read what they have written and make revisions, the content becomes even more thoughtful. So, email provides practice in writing and the student will benefit from the practice of stating legal concepts in writing.

It also provides more communicative access among students and between student and teacher. Furthermore,

because an email participant can respond to an email message when he or she is ready rather than in the five or ten seconds required in a classroom or tutorial setting, there is more opportunity for reflection. Email permits the writer to send afterthoughts relating to the initial communication and to receive individualised instruction and discussion. Email also provides personal autonomy in that an email participant may do email related work at home at the time of day that suits. Students and teacher can communicate with each other no matter where they are in the world so long as they have access to a computer. Email is a particularly efficient means of communication because the communicants need not synchronise the time and place of their communications. It facilitates collaborative learning because it can easily accommodate communication within a group of participants. Because email transmits written language in a digital format, it is easy to transfer documents between participants. Copying, editing and distribution are effected in a few seconds. Email, because it can easily accommodate communication within a group of participants, facilitates collaborative learning.

At the University of New Mexico, the writer has taught a seminar dealing with taxation in Indian Country (a term that refers to certain lands that the Federal government recognises as owned by members of tribes and/or subject to the governmental power of tribes) in an effort to meet the professional needs of a substantial segment of our student population. The work consists of casenotes on leading Indian tax cases, problems involving collaborative research and individual memos emailed by one student to another, and class discussion of the set problems and memos.

Because taxation represents a substantial area of practice in Indian

law, many law schools have one or two students who would like to take such a course. Since Native American students are spread throughout the country, the Internet is a convenient way to reach these students and to help them learn the material. A seminar of this type is particularly conducive to an email/Internet format because the bulk of the learning comes through self-study, research and analytical writing. Accordingly, in the fall of 1995 and with the support of the dean, the writer started a class composed of 10 local and five Internet law students. Of these 15 students, 11 were Native American and four were not.

To help the Internet students know what was going on, a local student took class notes and sent them to the Internet students. During the first third of the semester, each student had to write five to six casenotes on assigned cases. These were circulated via email. During the class meetings, we discussed four or five of the assigned cases. Each student was in charge of leading the discussion on his or her assigned case. The author presented the cases assigned to the Internet students. The students then researched the law on various topics taken from actual clients and sent their memos to each other via email. He then provided all the students with written comments on their memos and, at the conclusion of the course, conferred with the professors involved at the other universities and agreed with them on the appropriate form of assessment.

The underlying strength of the course is its clinical approach. The students work on real problems of real clients and are required to do real research. Students see the value of learning the material because it has immediate application to the memos. This foundational strength remains the same whether it is taught live or by email over the Internet. On the downside, the Internet students did not interact actively with one another,

although they did with the writer, who is teaching the course again and planning on requiring some Internet collaboration in shared research and the editing of written work. If possible, he would like to extend the use of Internet technology by putting up a home page for students to use and using Internet video conferencing to have some real time meetings among the students.

If Internet seminars become widespread, law schools will have to agree on a method of enrolment, credit, tuition and assessment. The ABA currently has no guidelines on Internet classes, so any new regulations dealing with Internet seminars will have to await the arrival of the next century. Nonetheless, an Internet law seminar can offer students a unique learning experience involving ample amounts of legal writing, much of it interactive. In addition, a specialised seminar can meet the subject matter interests of unique student populations who otherwise would be unable to take such a seminar.

### **The Internet: is it a viable medium in the education of legal professionals?**

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As business becomes more global, the consequent need for continuing education to maintain the necessary skills of the workforce will start to challenge the resources of institutional education. Recognising this, many institutions of higher learning are developing more flexible means of delivering education through, for example, distance learning and summer schools.

This article seeks to determine to what extent the Internet may be used as an educational medium in the continuing education of legal professionals, about which there is little, or nothing, in the conventional literature.

The specific Internet technologies of interest in this article are e-mail, Computer Mediated Conferencing (CMC) and the use of the World Wide Web (WWW) to enable access to the information available in databases throughout the Internet.

E-mail is extensively used for the interchange of information between people on the Internet. The writer composes a 'letter' on the keyboard, sends it to the recipient electronically with the Internet performing the role of the postman, sorting office and distribution centre. The only requirement for communication is that both receiver and senders be registered as users on the Internet and that they know the electronic address of each other's 'mailboxes'.

The CMC enables defined groups of geographically dispersed individuals to come together, electronically, for the exchange of ideas. The CMC may be 'synchronous', where the users are in simultaneous contact, or 'asynchronous', where communication is conducted through the intermediary of the user's mailbox. There are a number of such 'asynchronous' group conference systems whose principal advantage is that they permit a more immediate means of communication than the traditional method of paper-based correspondence to a wide audience. This permits an interactive transaction of ideas and provides a means of facilitating research amongst geographically dispersed academics. The Internet can also be used interactively in real-time through 'chat' groups, where users can send messages to each other in real time. It is also possible to use the Internet for real-time video-conferencing.

The Internet is being used as an educational vehicle with mixed success. The consideration of its future use must take various factors into account. Since it is likely that many people will be first-time users, the end product must be comprehensible and the process of

technology transfer as painless as possible. This is a question of design. Face-to-face contact is also a significant issue in the delivery of education. Research shows that tutors have an important pedagogical function and play a principal part in linking the learning materials to learning.

The legal profession is already an extensive user of the Internet with the libraries of the significant law schools throughout the world all being accessible through the Internet. In the United States, a number of law firms have set up home pages for information and to promote their business expertise. Accessing the home page of the Rutgers University School of Law provides the user with hypertext links to a wide variety of law schools, law firms and US government sites as well as subject oriented sites and LEXIS.

Educators will have to adjust to changing ideas on alternative educational methodologies. Use of the Internet is technically feasible but may take some time to be accepted as a primary educational tool due to the perceived need for face-to-face contact in the educational process. One possibility is that the Internet could form a component in a new method of education based around facilities such as the Knowledge Centres being trialed in Europe, which are equipped with the latest in multi-media and digital communications facilities. Then the Internet could do what it does best, provide fast global communications and access to an enormous body of information.

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