

least part of law teaching will become problem centred.

Conventional and distance teaching will grow more alike, but there will still be a separate place for distance teaching universities. It is clear that the differences between distance and conventional teaching will decrease, but conventional universities will never stop lecturing; they will use ICT, but never use *only* ICT. Distance teaching universities and conventional universities have their own groups of customers, and this will not change. The potential gains offered by ICT are in providing higher quality, or at least maintaining the quality, of law teaching for the same amount of money, not in lowering costs.

Information technology in the legal curriculum — reactions and realities S Migdal & M Cartwright

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In what sense, if at all, does computer aided learning (CAL) lead to more effective learning? Cynics may look at the government objective of increasing participation in higher education and answer, more effective at delivering education to ever increasing numbers. But this says nothing about the quality of the learning experience.

The authors sought to test four hypotheses about CAL based both on their own empirical research and an examination of the literature: (1) CAL can effectively replace face to face tuition; (2) it is ideal for non-campus based students; (3) it is equally effective at all levels and stages of legal education; and (4) it facilitates deep as well as surface learning.

The authors produced two independent multimedia learning programs (Medical Law and Negligence on CD-Rom and Employment Law on the Internet) intended as complete substitutes for face to face tuition. As well as developing these computer based learning programs, they also explored ways in which electronic material could be used as a complement to the traditional face to face lecture.

Information was collected about student reaction by way of unsolicited observations contained in module evaluation questionnaires given to all students and a specific information technology questionnaire survey of students on the modules using CAL, of which 100 or 42% were returned.

The results revealed that, for the majority of the students, the use of computer based techniques both in the classroom as a lecturing aid and as an aid to learning is a positive experience. They found the use of computer based delivery techniques in lectures to be better in providing structure, understanding and knowledge than traditional approaches and that computer aided instruction (CAI) made the lectures more enjoyable. A majority of students exposed to these techniques declared that they would opt in the future to take modules in which CAI/CAL methods were employed.

However, the module evaluation also revealed a significant minority of students who had difficulty in coming to terms with CAI. Some of these difficulties clearly resulted from unfamiliarity with computers and the software used. But the finding that a large number expected to be provided with a complete set of the lecture notes by the lecturer may also have something to do with this. Some of the students are resistant to any move away from the traditional approach. This resistance needs to be overcome before CAL and CAI can be fully integrated into the curriculum.

The authors are not yet in a position to comment on the impact of these techniques on student performance. The next stage in their evaluation process will be to compare results in modules where CAI/CAL techniques are used and those where a more traditional approach is taken.

Does CAL facilitate 'deep' or 'surface' learning? The authors' belief is that these packages enable the student to go as deep as they wish into the subject area because all the relevant study material is provided in a convenient and acces-

sible package. Whether the student in fact engages in deep learning is much more debatable. The software so far developed, in particular the limitations of self-assessment programs, is not sophisticated enough to test the depth of learning of any particular student. The development of artificially intelligent systems, which are capable of adapting to the learning styles of individual students, may well change this.

After reviewing their own study and the empirical studies deriving from other disciplines, the authors conclude that: (1) electronic delivery is the most effective when used as a complement to rather than a replacement for conventional methods of teaching; (2) it may not be appropriate to rely too heavily on electronic delivery in the first year of study because law students need to learn how to study law; (3) computers cannot recreate the teacher-student learning experience of campus based students and electronic media programs should be therefore seen as tools for learning in common with more conventional tools; (4) electronic media appear to be best suited to deliver the surface learning, i.e. the acquisition of basic knowledge, whereas the more conventional methods remain the most appropriate for the acquisition of the higher cognitive skills of analysis, understanding and application; and (5) avoid the temptation to overwhelm the user with information particularly on screen.

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