Editorial

In this special conference issue of *ALT-J*, a number of recurrent themes emerge. These include the integration of information and communication technology systems to assist in the teaching of a given higher-education curriculum. A number of papers address the questions which are on all our lips, such as: How, when and where should we embark on such a teaching exercise and, perhaps more importantly, at what cost? Ryan *et al*, Zhao *et al* and Lavelle offer useful insights into the setting up of computer-based resources for the teaching of economics, design and contract law, while Mozzon-McPherson's study demonstrates how Internet resources can enhance the process of language learning. However, an interesting finding from many of the teaching experiments is that in spite of students' enthusiasm for these new teaching technologies, they do not wish to see the traditional lecture totally replaced by computer-learning sessions. Students recognize the advantages of working at their own pace, but still feel more comfortable with the tried and trusted lecture. They do not want to be distanced from their tutors, and the students from the study by Ryan *et al* suggested that their CBL sessions should in future be supervised by subject specialists.

Harding *et al* warn that the introduction of computer-based learning materials should be considered as an 'add-on cost' to course production, and that the benefits of using such materials should be seen more in terms of an 'enhancement of education rather than a replacement of older methods'. This opinion is substantiated by Allinson who suggests that the application of 'comprehensive multimedia implementations for the teaching of practical social psychology skills can be viewed as an augmentation of traditional methods and not merely an imposed substitute'.

How to promote and support the appropriate use of technology in teaching and learning was the remit of the Education Technology Service of the University of Bristol, and Longstaffe *et al* describe the activities of such a working support-service, while Harding *et al* argue for the implementation of a simple courseware-management system if co-operative cross-platform courseware development is to be sustained.

Another question which is prompted by this set of papers is: How can we evaluate our

computer-based learning systems once we have built them? The formative evaluation carried out by Tosunoglu *et al* included a number of different measures. They utilized pre- to post-test change scores to assess learning gains, and also conducted a series of interviews supported by a number of questionnaires to gain insight into the subject attitudes towards the software. Gordon and Garrud employed an array of evaluation techniques including pre- and post-tests, randomized trials, and cohort comparisons. The summative evaluation of Pollock *et al* of their first-year mathematics CAL course for the BTechEd students shows that students' examination results were on a par with the previous year which was taught by traditional methods. A combination of formative and summative evaluations are advocated to understand the benefits of computer-based learning systems.

A further theme which emanates from these papers is the role of information and communication technologies for distance learners. The study by Whitelock *et al* forms part of an ongoing research programme to investigate students working with a computer at a distance with audio only, and then video links. Their work suggests that rather than being an inferior substitute to working side by side, it seems that the audio condition has some advantages. Wilson and Whitelock's paper emphasizes the importance of minimizing information overload for both tutors and students (a computer-conferencing system is being used to teach a computer science course to distance learners), while Kirkwood *et al* examine the organizational and pedagogical changes that may ensue with the more extensive use of IT.

One issue that was only touched upon was the use of IT to promote collaborative learning. We know that IT can provide an environment that supports group work, and finding ways to investigate laboratory results into curriculum packages presents us with future challenges.

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