Face to Face Lectures or eContent: Student and Staff Perspective

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Abstract
Describes the experience on two modules, at Oxford Brookes University where eContent is being used to augment or replace face-to-face lectures. The issues addressed in this work are firstly whether creating in-house eContent to replace parts of lectures could benefit students, staff or faculty. Secondly how tutors can help students to navigate and select from a variety of electronic resources, those that best address their particular learning needs at a specific point in time.

1 Introduction

The lecture has long been the cornerstone for teaching and learning in higher education and, despite their known pedagogic limitations, lectures remain a cost effective way for teaching large classes. Although computer technology offers viable alternatives to face-to-face lectures for delivering instructional material, evidence would suggest that both lecturers and off-campus students are reluctant to relinquish the conventional lecture.

The combined effects of increased faculty workloads, changing expectations of learners, improved instructional technologies and universal access to the Web are some of the drivers that are encouraging faculties to consider alternative delivery mechanisms for instructional material. It will be difficult for lecturers to remain immune to these and other pressure to adopt learning technologies. However unless academics can be persuaded that time liberated by replacing didactic lectures with electronic lectures or other eContent could benefit themselves, students and the faculty, they are unlikely to embrace the move to online learning with enthusiasm.

2 Lectures and eContent

In a study at Oxford Brookes University, on-campus students of computing welcomed the possibility of having access to online electronic copies of lectures they had attended. Their reasons predictably included: revisiting difficult parts of the lecture; revision for examination; clarifying of language used (particularly for overseas students). As expected they did not want to see the conventional face to face lecture replaced by electronic lectures. The attractions of ‘in your own time at your own pace’ independent learning did not outweigh their desire for the human interaction, the chance to ask questions (listen to the questions of others) and the advantage that the framework a schedule of lectures and seminar provides. As one student remarked ‘I’d never get out bed if I didn’t have lectures to go to’.

In its simplest form the electronic lecture/presentation is merely a digitized recording of a conventional lecture usually stored in a streaming format, available over the Web. Generally the lecture slides are synchronized with a talking head; the learner can fast forward, skip and replay sections and in some cases link to further detailed explanations. More sophisticated electronic presentations involve the use of interactive, multimedia, computer assisted instructional (CAI) material designed around some specific objective or learning outcome.

Very little quality CAI material designed in a modular fashion to promote widespread reuse and integration with existing courses, currently exist (Brahler et al 1999). The cost of professionally produced CAI ranges from £5000 for acceptable quality to £30,000 for high quality (Brown J. 2002). In spite of the availability of easy to use authoring tools, producing eContent is time consuming. There is little incentive for lecturers to produce their own materials unless it can be seen they effectively solve a pressing problem.

3 Example 1 eContent to explain a difficult concept

In the first module selected in the pilot study, Software Project Management, eContent was developed to augment conventional delivery of the topic Parametric Cost Models for Software Cost Estimating a topic with which student always have difficulty. In the 1999-200 run of the module, 120 students submitted an assignment using a Parametric Cost Model. The assignment was marked and graded in the normal fashion but no comments were written on their work. Instead the tutor made available via the module’s Web site a narrated model answer. Students were then encouraged to compare their answer with this and if they could not understand where they had gone wrong (and lost marks) then they were could consult their tutors. Most did not find it necessary to do this.

The narrated on-line worked solution, produced in 8 hours over 2 days, replaced one hour of lecture time. While, on the face of it, this seems a poor return on investment, the model answer is now a well-used teaching resource. In the 2000 - 2001 run of the module, 90 % student reported finding it helpful to their learning and used it to help do the assessed assignment. They requested more such online explanation of technical topics. An interactive tutorial on the topic developed in...
Visual Basic by a student for his final year project will be available to students on the module this year.

When questioned about the home produced eContent, students were generally very positive. The fact that it was directly relevant to problems they were currently tackling and based on case studies with which they were familiar outweighed it’s lack of professional polish. Few students felt they needed professionally produced materials, 70% preferred the voice of the lecturer known to them and 30% were happy with any voice as long as it is clear. Interestingly, whilst these students are prepared to sit in a lecture theatre for 2 hours to listen to complex explanations they felt that 20-30 minutes was enough for online explanations.

4 Example 2 eContent to promote independent study

On the second module used in the study, the problem addressed was that of large student numbers coming from different technical backgrounds studying a topic that is still evolving. Multimedia Application Design is taken by 2nd, 3rd and 4th year students. There is not enough time available in the scheduled lectures to cover all topics to the required depth. Therefore the lectures are used to introduce concepts and tools, and to provide the framework for the independent learning student must undertake in order to develop the technical skills needed to develop multimedia applications.

The module’s Web site provides access to a range of electronic resources including electronic lectures, interactive tutorials, demonstrations etc. These have been obtained from the web or developed at Brookes by staff and students using PowerPoint, Microsoft Camcorder, SMIL, Flash and other authoring tools. Outside of lectures, students work at their own pace making use of appropriate resources. Those who liked this move towards independent, self-study style of learning indicated that flexibility and self-control of study were the main benefits. However they all reported that there was too much content and that effective navigation of it was difficult. This supports the views expressed by other researchers (Jones and Wright 1999) that to be useful eContent has to be properly organised and structured.

To condense and interpret large amounts of information from sources that would be too difficult or time consuming for learners to glean for themselves is the responsibility of the tutor. Some thought was given as to how to provide the structure and guidance through the electronic materials and a decision was made to use interactive concept maps (http://cmap.coginst.uwf.edu/). These were linked to the teaching materials catalogued in a database using IMS Meta-Data (http://www.imsproject.org/metadata/). Creating the concept maps was a good opportunity to analyse the learning outcomes for the module and it was a rewarding task. On the other hand cataloguing the resources was very labour intensive so only a subset of the resources were analysed and catalogued. Students thought that concept maps were a useful and effective way to organize teaching materials. However they stressed that the maps needed to be less complicated than those supplied. In addition they mentioned the value of varying levels of navigation to meet the requirements of different students (Greenwood, Phillimore, Yang 2002).

5 Conclusion

On-campus students value electronic presentations as backup to the conventional lectures. From the tutor’s perspective, time spent on home produced materials is worthwhile if they become enduring teaching resources. For the faculty, the experienced gained through developing and using eContent with on-campus learners could prove useful when developing courses for distance learners.

Both staff and students identified navigation as a problem as more on-line electronic resources became available once the course was underway. Students appreciated the use of interactive concepts maps linked to a database of eContent as a method of solving this problem but creating these interfaces was time consuming and keeping them current was a problem. However thinking about their design and structure ensures that the pedagogy is not neglected when employing technology to support teaching and learning.

References


Institute for the Interdisciplinary Study of Human & Machine Cognition at University of West Florida. http://cmap.coginst.uwf.edu/