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Tony Fetherston
Edith Cowan University

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Tony Fetherston
School of Education
Edith Cowan University
Perth, Western Australia
t.fetherston@cowan.edu.au

Universities are showing increasing interest in raising the standard of teaching that occurs in their courses. There is a growing awareness that the traditional model of lecture/workshop/tutorial/assignment may not be the best approach in promoting learning in students. Concurrently with this change, there is increasing use of the World Wide Web(WWW) to deliver courses to internal and external students.
It is timely then to examine the role of the WWW in moves towards better teaching and learning for internal and external students at university.

Learning approaches

The first challenge is to begin regarding the use of the WWW not as a delivery medium but as teaching and learning tool. Once viewed this way we can allow pedagogical constructs to be applied to the use of the WWW rather than just examining the technical issues surrounding the use of the WWW.
The usual approach in most internal courses at universities involves a lecture/tutorial format in which material is delivered at lectures and discussed at tutorials. The unspoken assumption is that delivery of the material (lecture) results in learning of the material. This approach is called transmissive and assumes a strong link between the means of education and the ends. That is, having delivered the material then students are assumed to have learnt. For external students, materials delivered by the web offer access to easily updated textual materials, some limited interactivity with programs on the WWW and access to audio and video that can be streamed in real time. This makes it technically possible for them to watch a lecture in real time without attending the university. This is also a transmissive mode of learning.
Approaches that encompass collaboration and build a sense of community would seem to be ideal for support by the use of the WWW and are becoming an important focus of research (McMahon, 1997; Dillenbourg & Schneider, 1995; Walker &Lambert, 1996).
If we start to regard the WWW as a teaching and learning tool that can support social constructivist approaches to learning, then University lecturers will need support as they undergo personal, social and professional change.

Joining the community

The WWW has probably been the main influence that has changed the way we conceive of computers. They are no longer machines which have to be conquered or commanded but have become transparent (though maybe some operating systems and browsers make them translucent!) windows into an information world. Students need a sense of this world, a sense of the audience participating and an understanding of the mostly unwritten rules that govern its behaviour in order to successfully use the new medium. The second challenge facing the use of WWW then is to equip our tertiary students with the conceptual models and practical skills to enable them to participate in this community. This is necessary because, according to a social constructivist view, participation can result in good learning. Once they can participate then we face the challenge of equipping our students with the critical thinking skills necessary so that they can confidently use information on the web for learning purposes..

Using the technical features for learning

Students can fill in forms, watch video, complete a multiple choice test, have it marked, watch live video, listen to live broadcasts, watch animations, submit written assignments, email other students, talk to other students and look at other students through the use of the WWW. These capabilities represent clever technical achievements and there is no reason to think that development in this area is likely to slow. However these achievements pose a third challenge (related to the first) of how to best implement technical capabilities so bring about meaningful learning. Which means finding good pedagogical practices that will build on the inherently engaging nature of the web and produce good learning.

Assessment

To answer this question would require a consideration of a broader range of assessment techniques currently used at universities in order to uncover differences in learning. Such consideration is likely also to occur if universities contemplate outcome-based approaches. Assessment should be reconsidered in most university courses with the advent of the use of the WWW and this presents a fourth challenge of how to best use the web for good assessment. Good assessment is valid and authentic and would mean practices like providing opportunity for assessing student's procedural skills, allowing students to critique set problem and allowing students to make up their own questions .

Learning to learn

The fifth challenge facing the use of the WWW in universities is to how best use the web to encourage good learning behaviours in students. As an example of the kind of behaviour to be encouraged, metacognition is universally regarded as an essential attribute of good learning. If students have good knowledge of the nature of their learning, of their effective learning strategies, of their learning strengths and weakness and can be given some control over their learning then better cognitive and affective outcomes will result. Further, conceptual change requires metacognition and metacognition helps recognition, evaluation and revision of personal views (Baird & Northfield, 1992). The WWW with its essentially individual approach to education has potential in this area to meet this challenge if appropriate design strategies are employed. If the design of courses allows individual exploration coupled with reflection and the comparison of views with others then metacognition can be enhanced and good learning can result.

Change

A final challenge to the use of the WWW is faced by lecturers themselves. Using the WWW means that lecturers will have to change their usual practice. Change to embrace the WWW and to meet the above challenges would probably be driven by a belief that learning in their courses is not as good as it could be and that assessment could be improved. It is likely that the use of the WWW for distance education students is likely to be restricted initially to its use as a delivery platform as good instructional design is required to meet the above challenges. It is far more likely that the challenges can be met through the use of the WWW to support the internal delivery of courses as lecturers can more easily implement a different approach. For this reason the WWW is likely to be used in good teaching and learning mostly in internal courses.

References

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