RIVERBEND @ WEBCT: INNOVATIVE REUSE OF EXISTING TECHNOLOGICAL RESOURCES FOR PROBLEM-BASED LEARNING IN PROFESSIONAL EDUCATION

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Abstract

This paper describes the way in which the capabilities of WebCT are being extended to enhance a Problem Based Learning (PBL) course in the professional education of behavioural scientists. It is argued that the tool meets all the criteria for PBL courses and makes appropriate use of the potentialities of web-based tools. Since it uses an existing platform already in use it was cheap to develop and relatively familiar to the students. The site portrays a town we have called Riverbend and it aims to provide a real-world feel for the PBL experience. It is to be developed further by other lecturers for use in more courses and in one course the students themselves will build model enterprises in Riverbend.

The Course and its Challenges

The Behavioural Studies Program provides students with an interdisciplinary approach to understanding and intervening in social contexts and individual behaviour. The program includes a course called *The Professional Self*, which focuses explicitly on professional practice. Universities are sometimes criticised for giving students too much theoretical (or declarative) knowledge, and not enough practical knowledge. In fact, of course, the successful practitioner needs both and in our view the best way to achieve this integration is through the use of Problem Based Learning techniques.

The Problem Based Learning (PBL) Approach

While PBL is agreed to cover less content than conventional modes (Biggs, 1999) it is acknowledged to be the pedagogy of choice where particular attention is being paid to active, deep learning (Biggs, 1999), particularly in professional training (Boud & Feletti, 1991; Cowdroy, 1994). For the social scientist the PBL approach allows students to be exposed to descriptions of life-like situations in all their ill-defined complexity, without exposing them or the studied populations to harm. While one of the basic tenets of PBL is that learning and recall is improved by learning in a situation as near to the real life one as possible (Schmidt, 1983), the teacher's ability to provide this is obviously limited by having to present situations as text. This can be alleviated to some degree by varying the presentation with videos and other such devices and in recent years attention has turned to the use of electronic media. Several examples now exist of CD-ROMs and web-based materials which use the visual potentialities of such media and their ability to deliver text, audio and video to enrich the PBL experience. Many of the electronic versions of PBL are aimed at remote students and the group experience is supposed to be provided by electronic communicative tools (Jolly, 1997). But electronic formats have other advantages and these can be obtained through the adaptation of existing tools rather than expensive and time-consuming building of new ones.

Adapting WebCT

Our original plans were for a web site which would represent a town in which students would discover and explore problems in professional practice. Graphics at various levels of navigation and addition of audio and video materials would increase the real-world feel of the site. The expense of such a construction meant we had to think laterally about our existing platform, WebCT. Happily, this has allowed us to meet most of our goals. The following graphic illustrates the home page for the course:

Figure 1: The Riverbend home page

Visitors to the BEST2042 WebCT site are not greeted by the usual row of buttons but by the kind of map you might see on a tourist brochure, with sketch drawings of major sites such as the Council Chambers. Each illustrated site leads students to the kind of resources one would expect to find there in the real world. So the Council site provides statistics about the town, descriptions of civic initiatives and access to real sites belonging to comparable cities. Thus students are led from the invented situation into real ones. The scenario that prompts students' work in Riverbend concerns problems surrounding the re-organisation of the pulp and paper mill belonging to the major local employer, Byrd Industries. They work in teams of five or six as consultants for Andrews & Sullivan to identify and suggest strategies for dealing with the situation as it develops over the semester. The "New Developments" part of the site allowed us to make use of opportunities that arose during semester, such as a relevant debate on the ABC's web pages, to add more material and increase the relevance of the site.

One very useful resource which could not be provided in any other medium, is the ability to have sound files on WebCT. Our students have to choose between three oral presentation tasks - a debate, an interview and a presentation to the board. Although they are given readings and criteria, and we talk to them about what is required, it is useful to have sound bites demonstrating what they are expected to do. So there is a recorded interview on the newspaper's pages, a debate under the Council and a presentation to the board on the Byrd pages. These were all specially written to fit into the Riverbend scenario and to meet the criteria that students will be assessed by. Further development of the site will incorporate video prompts (such as surveillance video footage for a course in crime prevention). In a third year course in our World of Work concentration students will be required to build their own model enterprises in Riverbend, taking due notice of what already exists on the site.

The Educational Rationale

As Albion (2000) points out, it is necessary to demonstrate that such tools in fact provide a PBL experience, especially if, as here, one is aiming for the full benefits of an iterative style of PBL. Albion (2000) takes the following nine points as definitive of PBL:

1.	The materials present a problem as the starting point for learning
2.	The problems presented in the materials are relevant to the future professional lives of [the students] and provide a meaningful context for [the topic of the course]
3.	Materials of this type could be used in a sustained educational approach and not simply as an atypical insertion in an otherwise conventional educational experience
4.	The materials are consistent with an approach in which learners assume significant responsibility for their own learning
5.	The materials encourage learners to become active processors of information
6.	The materials provide opportunities for learners to activate prior relevant knowledge
7.	The materials provide opportunities for learners to elaborate and organise their knowledge
8.	The materials are consistent with an approach in which knowledge is organised around problems rather than disciplines
9.	The materials are consistent with the experience of learning in small groups rather than through lectures.

Table 1: Requirements of the PBL method (from Albion 2000)

I have already described the use of problems, which evolve over time in response to student interest, to drive learning. Early responses from students indicate that they find these problems relevant and engaging and that Riverbend is a meaningful context for their work. When asked to rate the usefulness of various support mechanisms provided in this course, the students we have heard from so far rate the library above the web site, which encourages us to think that the site stimulates them to seek out further knowledge (the on-site survey has not been completed by all students at time of writing). The articulation of the problems require them to work in small groups and we have seen students follow their bent towards various disciplinary approaches and draw on past experience quite significantly. It should be noted that the site is supported by small group work in class. While students tell us they wouldn't like to have all of their courses set in Riverbend, they are quite happy to have some more set there. Colleagues are currently considering how they can utilise the site in at least one other course in criminology, and I will be using the site again for a third year course. On these criteria, then, the site can be considered to provide a PBL experience. The PBL cycle for the first six weeks of semester, in which each PBL group had to produce a tender for applied research, is described in the table below:

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Orientation to the course and the site Formation of groups of 5/6 students	analysis of the problem prompt in small groups What else needs to be known?	Lecture Small group work sharing findings, starting to plan tender, allocating tasks	Guest speaker Group work reporting on individual work and incorporating new criteria Class debate	Small group work co-ordinating individual's work on tender and theoretical overviews	Submit tenders New prompt supplies extra information raises ethical, political questions

Table 2: The first PBL cycle

Tutors are assigned 15 or so students each, which means they are responsible for supervising the work of three PBL small groups at a time. In the class session in the second week students are presented with the first problem prompt. In small groups, they analyse the problem and decide

what else they need to know in order to understand it better. In the normal PBL way they then each investigate whatever aspect of the problem they have decided on and report their findings in the next week. This reporting happens in the context of the larger tutorial group so although each group of five or six has to produce a coherent tender, they have the benefit of other groups' reflections and input. This process continues over several weeks. The WebCT site provides the fictional framework for the prompts, access to further information, both fictional and real, and communication tools such as email and chat rooms which students can use to co-ordinate their efforts in out-of-class time. Their first assessment task is to produce a tender for applied research to solve the prompt problem, and this helps provide further structure for their learning. In each succeeding week they are given extra information, both on the site and in class lectures and debates, which encourages them to modify their understanding of the problem and approaches to it. Subsequent problem prompts are built on the original one, but raise new issues such as ethics. Other assessment tasks are built around oral presentation skills, reflective journals and critical incident analysis. Over the course of the semester, students use their reflections to modify the site by creating personal web pages advertising their skills and by posting summaries of the developing problem, its solution and what they, as researchers, have learned from undertaking it.

The relative economy of using an existing resource such as WebCT to provide a tool such as this means that we can look forward to continuous development of the site over the coming years, to meet changing course structures and student needs. Riverbend is one regional town with a rosy future.

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