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A. Fuller

University of Wollongong, annef@uow.edu.au

Gene Awyzio

University of Wollongong, gene@uow.edu.au

Penelope McFarlane

University of Wollongong, penney@uow.edu.au

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Keywords

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Using WebCT to Support Team Teaching

Anne Fuller, Gene Awyzio, Penney McFarlane

University of Wollongong

annef@uow.edu.au, gene@uow.edu.au, penney@uow.edu.au

Abstract

Advanced learning technologies facilitate team teaching at the college/university level. Team teaching has been shown to benefit both students and faculty. This paper explores the benefits of using a course management package in an interdisciplinary team environment. Among those benefits are: better communication, student monitoring and support, flexibility in subject delivery, and fostering a collaborative environment. The success in the early developmental stage of integrating one such learning technology (WebCT) into our course has seen the package move from a simple tool to an essential member of a teaching team.

1. Introduction

Historically, it is recognised that team teaching is beneficial for all involved parties. Although there is a plethora of research describing team teaching in elementary schools, there has been little research done in this area at the higher education level since the 1960s. For example, a 1966 study at Boston University found "team teaching strengthened and individualized relationships between teachers and students and enabled students to progress more rapidly" [1]. Despite this, team teaching continues to be regarded favourably at the tertiary level, and Davis [2] lists almost 100 examples of courses being team taught in North American colleges and universities.

Twigg, Wagner, Baker and Gloster quoted in [3] argue that higher education must move to the electronic arena rather than the face to face methodology of yore. Reasons for this movement involve multiple campuses, increased student numbers, reduced contact hours for the academic and various offshore delivery schemes. Massy and Zemsky quoted in [3] claims "that higher education cannot become more productive or hold costs down unless colleges and universities embrace technology tools for teaching and learning."

Students need to develop technological skills in order to effectively use electronic delivery systems. Bergen [4] states the development of such skills within an isolated, individualized teaching model is ineffective. Yet team teaching remains the exception in higher education[5].

Web Course Tools (WebCT) is a class management package developed at the University of British Columbia that facilitates the creation of sophisticated World Wide Web-based educational environments by non-technical users. It can be used to create entire on-line courses, or to simply publish materials that supplement existing courses. It provides tools to enhance interaction between students and faculty, and includes security, administration, facilities for backing up, etc. In addition, a broad range of course material and well-designed content from major textbook publishers is available as ready-made WebCT courses. Information regarding WebCT may be found at <http://www.webct.com>.

This paper discusses our experiences using WebCT to manage an introductory IT course of three hundred and eighty-five students which was team taught in Spring Session 2000. Initially we planned to use WebCT to simply streamline administration, and provide students with an online community that could demonstrate the benefits of IT in education. Ultimately we conclude that WebCT and any course management package providing similar features can facilitate team teaching at the college/university level.

1. Background

Introduction to Information Technology B (CSCI102) is a mandatory first year subject for computer science and information technology students and is also available as an elective for various other disciplines. It examines a range of information and communications technologies and associated issues as well as the application and convergence of these technologies together with introducing students to a group culture.

Due to the varied nature of the content, the number of students enrolled (385) and the necessity for delivery to an external campus, the decision was made to team teach. Three staff members volunteered to be involved in this project, a software engineer, a telecommunications engineer and an IT generalist with an English background.

3. Team Teaching

Our team chose the interactive model of team teaching. Garner [6] defines this model as one in which team members understand the contributions of each

member, share knowledge and experience to establish and pursue common goals. Interactive teaming is also known as trans-disciplinary [2], [6] which was suited to the needs of the subject and reflected the multi disciplinary nature of the team.

Larson and La Fasto, quoted in [2], [6] identified eight characteristics of an effective team: a clear elevating goal, results-driven structure, competent members, unified commitment, collaborative climate, standards of excellence, external support and recognition and principled leadership. Davis [2] and Garner [6] go on to examine the implications of these characteristics in the context of a teaching team.

A team exhibiting these characteristics will be better able to overcome the limitations and challenges associated with team teaching. La Fauci and Richter [1] discuss 9 factors that may combine to reduce the effectiveness of the teaching team. These are: lack of understanding and commitment, rigidity of structure, demands of a multiplicity of faculty roles, problems of scheduling. Difficulty in maintaining a balance between unity and diversity, resistance to change, necessity for pre-planning, lack of available research, difficulty of acquiring and retaining teaching faculty.

The team decided that WebCT had the potential to alleviate several administrative tasks as well as addressing the difficulty of the external campus delivery and support required. Subsequently, we also found that WebCT was able to contribute substantially to our ultimate success as a team.

4. Structure of a UOW WebCT site

All WebCT subject sites at the University of Wollongong include the following elements.

Lecture Support: The area where the lecture content is placed.

Links: This is a categorised source of useful Internet and library database links as determined by the academic. A further evolution in this area is the direct link to online databases, which is facilitated by the university's library.

Forum: Here students can post questions and comments or refer others to useful web sites or other sources of information. Communication with and between academics can take place here.

Calendar: Students can access this to double-check assessment and exam dates.

Surveys: contains a database of survey questions can be compiled by the academic and opened to the students for subject feedback. A statistical return of survey results is generated by the package in use, providing useful feedback for future course construction.

5. Team Teaching with WebCT

WebCT supports individual differences from the student and the staff perspective. On completing the course, we evaluated our success as a team by reflecting on our use of WebCT to both support Larson and Le Fasto's characteristics [2], [6], and to help overcome La Fauci and Richter's challenges[1].

As Davis [2] points out, most interdisciplinary team courses are an attempt at innovation and thus are naturally elevating. Course aims and objectives were determined by the subject, thus making the goals clear to the team. The course outline was co-written so each member was clear as to her function within the course structure.

Structure was determined by the course objectives. Each team member selected those objectives most suited to their particular skills. Once this was established, the ease of WebCT use allowed for individual loading of associated course materials. In addition, we found WebCT provided the ideal support for one very important aspect of a results-driven structure i.e. the desirability for each member to know "how the team is functioning at any given time" [2] .

Competent members fortunately, were found to be an easy area for this subject. Due to the voluntary nature of their involvement with CSCI102, each team member felt comfortable collaborating, yet between them possessed the diverse technical skills and knowledge required to present the subject syllabus.

The opportunity to explore the capabilities of WebCT as a course delivery package was considered timely by each team member. All members of the team are involved in the universities offshore teaching program and recognized that more support of these programs was required. Unfortunately it is not possible for faculty to be offshore fulltime. It was felt that CSCI102 provided an ideal environment in which to examine the use of a web based course tool, such as WebCT, to support the offshore program. The large number of students and the geographical disparity of the campuses involved provided a climate that was indicative of the offshore campus whilst allowing personal contact with remote tutors on a regular basis. Thus we were unified in our commitment to the subject's success.

Having determined their relative responsibility for various sections of the subject, team communication was facilitated by emails and weekly formal and informal meetings. The private forum area of WebCT contributed to the collaborative climate, allowing personal communication between the group members during the course's duration, and was used to float ideas prior to their being considered more formally in meetings.

The team agreed that their success in teaching would be measured in terms of student grades and student IT literacy. Using WebCT as their principal contact for

course information made it possible to determine an individual student's facility with the medium, as the package allows tracking of individual pathways through the system. Summaries of student activity were communicated and discussed via the private forum, ensuring each member remained clear as to what standards we were expecting. The overall average grade for this subject was slightly higher than in previous years, also a reflection of achieving our standard.

External support and recognition was realized through the support of the Head of School who encouraged and monitored the success of this implementation. Other faculty members would often ask for updates from the team members as the term progressed. As a result of CSCI102, three other staff members are mounting their subject's onto the WebCT platform. The Head of School determined at the end of the academic year to employ a part time WebCT support person to assist in the construction of sites for interested staff members following a schedule of needs as determined.

In our faculty it is customary that a single course coordinator be listed as the main contact for a subject. We departed from that norm by listing all three of us as co-coordinators. One of the team members took on the role of team leader with the responsibility of ensuring that the WebCT site was operational from the start to finish of session. The private and public fora were initiated and moderated by the team leader. Interactive learning and peer support is facilitated by this medium.

Working as an effective team clearly helps overcome La Fauci and Richter's[1] list of team teaching limitations. WebCT's private forum alleviated scheduling problems, provided a medium for collaborative brainstorming, and raised awareness of any changes to course structure. The clear division of responsibilities relating to member expertise eased any potential role conflict. As discussed previously (Section 5), our decision to participate in a team teaching environment minimized the problems in maintaining a balance between unity and diversity as well as resistance to change. The difficulty of acquiring and retaining teaching faculty is irrelevant to our situation. It should be noted that there remains a lack of available research at the tertiary level.

6. Benefits for the Students

Using a package such as WebCT provides students with a central point to collect subject resources and complete and submit assessment tasks. This establishment of an online community contributes to the collegiate atmosphere of the subject, despite its size or geographic disparity. Integrated tools for tracking student activity, allows the team to monitor student visits to pages and determine what students find useful and what they avoid.

This builds a database from which to construct the following sessions' course.

Assessment tasks can be posted onto the site and be marked automatically, marked semi-automatically, or marked with full instructor intervention. In our case, we posted detailed assessment information and included links to on-line tests related to the textbook at the publisher's site. Results of the on-line tests were emailed to our tutors, while the other tasks were marked manually. Assessment results were subsequently posted to WebCT.

In addition, using one system, WebCT, for all their work, allows students to focus on learning the material rather than the system, or systems, at an earlier stage. This is particularly important for students where this is their first exposure to IT and for international students where English is not their first language.

7. Benefits for the Team

The team found that the WebCT site made contact with the students easier. Subject updates, alerts and notices could be sent easily. The forum alleviated the number of emails usually directed to the instructors, and often questions asked were answered accurately by other students.

Online marking facilitated the collation and publishing of results in a timely manner. There is further scope to ease the workload for both the academic and tutor with fully automated marking and posting of results which can then be transferred from WebCT to other administrative packages at the end of sessions.

By posting the subject via WebCT, the tutors were able, through their individual logins, to see the direction and scope of the subject, as well as future tutorials. This enabled them to lead their groups more effectively. Special administrative notices could be directed to them easily via the private forum facility.

The ability to post work from a variety of venues was found to be most beneficial in the running of this subject. The team found that they did not have to 'live in each other's pockets' in order to keep abreast of course developments. The individual nature of posting content, meant that no one academic was waiting for another to complete a body of work. Team members could work from home effectively and post their work from there, and one team member stayed in contact although teaching offshore for a period of time.

Intellectual property was not a concern as the WebCT site is password protected and only registered UOW students enrolled in the subject itself could gain access. This is proving to be a more pressing need as more people gain access to the Internet.

8. Expanding the Role of WebCT Within the Team

The success of the inaugural use of WebCT has identified a number of other areas where WebCT can assist a teaching team at the tertiary level. The areas identified include the utilization of WebCT as an examination and mark-collating tool, student monitoring, and student support.

This semester a modular approach to student learning has been introduced. Tutorials and examinations as well as subject resources are delivered via WebCT. To provide students with a greater appreciation of the adaptability and effectiveness of IT in education, students are required to complete and submit a weekly tutorial exercise from the publisher's WebCT site, and complete and submit an online exam at the completion of each module.

Previously, an individual's tutorial marks were emailed from the publisher's site to one of many tutors who then recorded the marks for later integration into the overall class result list. Whilst exams were machine marked, results were still entered manually. Under the new system, students encountering difficulty will be more easily identified. Additional tutorials can be placed on the site to provide further support. Using WebCT for online submission and marking of tutorials and exams greatly reduces administrative overheads in a class of this size and facilitates the integration of course materials to remote campuses.

WebCT's ability to support an effectively functioning team has been shown in section 5. Its use fosters good communication between team members and facilitates the sharing of ideas makes it indispensable for a teaching team in the IT area.

Although we have not used other course management packages, comparative studies suggest similar facilities to WebCT can be found. For example, Blackboard and eCollege offer similar features [7], thus these packages would also benefit team teaching. Further information regarding Blackboard and eCollege can be found at <http://www.blackboard.com> at <http://www.ecollege.com> respectively.

9. Conclusion

Previously team teaching has often been an exercise in political correctness, time management, paper chase, phone tag and sheer frustration. Our experience using a course management package shows that these problems can be alleviated if not eliminated altogether.

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