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Keywords
WebCT, online learning, accounting, flexible learning

Disciplines
Business | Social and Behavioral Sciences

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This paper discusses the integration of a flexible online learning environment into an undergraduate management accounting subject using WebCT and presents the results of research based on student evaluations of this integration. Student responses indicate four general trends. First, that there was overall satisfaction with the quality of the subject and the way in which substantial resources were offered online. Secondly, that the use of WebCT enhanced the learning experience and promoted independence, essential criteria for evolving life long learning skills. Thirdly, that WebCT made access to learning materials more readily suitable to the practical constraints of the learners' individual situations. Fourthly, that many students valued highly their relationship with the teaching team, whether in person in tutorials or lectures, or more distantly, in email or discussion board interactions.

Introduction
Over recent years there has been an increasing trend for universities to embrace the concept of flexible learning by supplementing traditional lecture-based instruction with online learning experiences (McKlin, Harmon, Evans and Jones, 2002; Willett, 2002; Lopez Martin, 2003; Drennan, Kennedy. and Pisarski, 2005). Although the higher education literature reports this implementation of online learning in various disciplines, very few studies involve the discipline of accounting. In addition, the majority of the studies only describe the structure and the delivery of the online components. Relatively few studies, and none in accounting, provide feedback on student responses to flexible online learning. This paper seeks to address both these imbalances by (1) reporting on the integration of online learning into a undergraduate accounting subject, and (2) presenting the results of research into student evaluations of this integration.

The introduction of flexible learning has the potential to enhance students’ learning experiences in a number of ways. It allows students to access a larger range of interactive methodologies and encourages teachers to pay more attention to the instructional design of subjects (Berge and Collins, 1996; Salmon, 2000). Further, it facilitates interaction between students, and between students and teachers (Daugherty and Funke, 1998; Oliver, 1999).

Other studies have found that online delivery promotes self-directed and autonomous learning (Akerlind and Trevitt, 1999; Daugherty and Funke, 1998) and provides opportunities for students to develop generic skills such as self management, task management and information management (Oliver and McLoughlin, 2001). In addition, the online components allow students to self-pace their learning and interact with subject materials at the time and place that is convenient to them (Leasure, Davis and Thievonl., 2000; Perreault, Waldman, 2001).

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1 Disciplines have included library education (Willett, 2002; Patalong, 2003), management (Drennan et al, 2005), biology (Lee and MacMillan, 2004), psychology (Hoskins and van Hooff, 2005), computer science (Courtney and Patalong, 2002; Kendall, 2005), education (Reisetter and Boris, 2004), engineering (Lopez Martin, 2003) and nursing (Buckley, 2003; Suen, 2005).

2 The author has found only two (Dunbar, 2004; Gagne and Shepherd, 2001).
Alexander and Zhao, 2002), thus giving them more control over the timing of their learning and communication with their instructors (Burch, 2001).

Nevertheless, some research has reported that although collaborative learning tools such as email and discussion forums enable students and teachers to be connected to each other for frequent and meaningful interaction, some students may feel the loss of personal interaction with instructors and peers (Billings, 2000). It is thus important to obtain “a clear picture of the nature of students’ experiences online in order to maximize learning potential and mitigate limitations inherent in the delivery medium” (Reisetter and Boris, 2004, p. 281).

WebCT is a widely used online delivery medium for supplementing traditional teaching methods and facilitating flexible learning and communication. To this end, WebCT provides students with valuable learning experiences by offering a virtual classroom, wherever and whenever that it suits the students. In addition, WebCT enhances communication by encouraging online participation and overcoming students' fear of dealing with the unfamiliar. Nevertheless, WebCT places different demands on its users than those experienced in traditional learning environments. While technical requirements involve both hardware and software, there is also the need for users to become familiar with new ways of interacting, in particular the ability to communicate asynchronously, without interactive clues of face-to-face contact. Learners must actively change their "internal maps" of understanding (Jonassen, Davidson, Collins, Campbell, & Haag, 1995). This lack of expressive behavioural cues is regarded by some users as a disadvantage but by others as an advantage. The former may view WebCT as inadequate because it enhances a "sense of depersonalisation" (Hiltz, 1986, p. 100), while the latter consider that it promotes freedom from the distraction of status and social games and thus allows them to "project their personalities in written texts" (Feenberg, 1987, p. 74).

The increased student access to educational materials through WebCT promotes its use in a flexible learning environment. As such, although a subject may be offered on campus, the use of WebCT will enhance the learning mix and even substitute for some aspects of traditional delivery methods.

This paper reports the introduction of WebCT in an undergraduate accounting subject at the University of Wollongong (UOW) in Australia by first identifying the need for flexible delivery at UOW and then describing the subject learning environment. This is followed by a discussion of student responses to their online learning experiences in the subject. The paper concludes with a brief consideration of the staffing implications of flexible learning.

The need for flexible delivery at UOW

In 2000 the University of Wollongong opened three new “satellite” campuses on the South Coast of New South Wales (Shoalhaven, Batemans Bay and Bega), with the strategy that they would be centres of flexible learning. In 2004 and 2005 it opened further campuses at Moss Vale and Loftus. The subjects offered at these campuses are identical to the same subject offered on the main campus at Wollongong during the same semester. While there is some personal contact with students at the satellite campuses (by telephone, email and onsite tutors), much of the learning environment is provided online.

A second year undergraduate subject in management accounting (MA2) is offered at all campuses. It was developed in such a way as to enable it to be appropriate for the students studying on the satellite campuses as well as those studying on the main campus at
Wollongong. To this end, flexible online learning was integrated with traditional delivery methods.

During 1999, UOW purchased a site license for WebCT software to be used as the delivery medium for flexible learning, and MA2 has been delivered using this mode since that time.\(^3\) One of the major advantages of using WebCT is that in addition to a providing a teaching and learning platform, it also provides a class management package which “enables each student’s use of this environment to be monitored and recorded, in terms of access and participation” (Hoskins and van Hooff, 2005, p. 181). Thus, this provided the teaching team regular feedback on students’ use of the site.

**The MA2 Learning Environment**

The learning environment for MA2 consisted of both live and online components, as shown in Table 1. In the design of the subject it was recognised that

> [t]he use of technology is secondary to well-designed learning goals and objectives. What distinguishes online instruction from entertainment or recreation, is the purposefulness of the designers and developers in provoking responses to the learning materials, context and environment (Berge, 1997, p. 1).

Consequently, the major features of the subject included key concepts, lectures, tutorials, online workshops, self tests, quizzes and e-cussions.

<table>
<thead>
<tr>
<th>Component</th>
<th>Live</th>
<th>Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>2 hours per week</td>
<td>• downloadable lecture slides</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• key concepts with glossary</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• objectives</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• text references</td>
</tr>
<tr>
<td>Tutorial</td>
<td>1 hour per week</td>
<td>• solutions to questions provided online at end of week</td>
</tr>
<tr>
<td>Workshop</td>
<td></td>
<td>• “talk-through” online problem with worked solution</td>
</tr>
<tr>
<td>Self-Tests</td>
<td></td>
<td>• online weekly with answers explained</td>
</tr>
<tr>
<td>Quizzes (assessable)</td>
<td></td>
<td>• online every 2 weeks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 2 attempts, open-book</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• marked online</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• solutions provided online</td>
</tr>
<tr>
<td>Essay</td>
<td>Hard copy submitted and marked with comments</td>
<td>• downloadable coversheet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• online reference information</td>
</tr>
<tr>
<td>E-cussions</td>
<td></td>
<td>• weekly student responses to discussion questions placed on bulletin board</td>
</tr>
<tr>
<td>Final exam</td>
<td>One 3 hour exam</td>
<td>• downloadable past papers</td>
</tr>
<tr>
<td>Email and Bulletin Board</td>
<td></td>
<td>• checked by coordinator at least daily</td>
</tr>
</tbody>
</table>

\(^3\) In 1998 and 1999 the MA2 coordinator had constructed web pages for other subjects taught on campus. These pages provided a notice board, email link, subject information, lecture notes and links to other related websites. The sites were created using Microsoft Word and then placed online using WS_FTP software.
Key Concepts
The subject material was presented as twelve modules. For each module, the “content module” tool of WebCT was used to create an overview of the key concepts, with a table of contents so students could work through the module easily. Glossary links were included so that students could readily reference unfamiliar concepts. Learning objectives were also shown for each module. In addition, students were provided with direct access from the key concepts page to “discussions” so that they could raise any issues with which they had problems either with the teaching team or with their fellow students. A excerpt from one of the key concepts modules is shown in Figure 1.

Figure 1: Key Concepts for Module 3

4. Job Order Cost Accumulation

4.1. Job cost sheet
A job cost sheet is used to accumulate the actual direct materials, actual direct labour, and applied manufacturing overhead costs for each job. The recording of costs on this sheet and in the general ledger is triggered by various source documents.

4.2. Materials requisition form
Source documents include material requisition forms to authorize the transfer of direct materials from the warehouse to production. In many firms, the materials requisitions are based on a bill of materials that lists all of the materials (e.g., parts) needed.

4.3. Time ticket
Source documents also include time tickets to record the amount of direct labour worked on a specific job.

4.4. Manufacturing overhead
Manufacturing overhead is entered on the job cost sheet in the form of applied (i.e., estimated) overhead. Source documents, such as invoices for factory insurance and salaries for factory depreciation, trigger the recording of overhead in the general ledger as a debit to the Manufacturing Overhead account.

Lectures and Tutorials
Students were expected to attend face-to-face classes for 3 hours each week, consisting of two one hour lectures (which were delivered at Wollongong and video-conferenced to the satellite campuses) plus a one hour tutorial class. (Tutorials were conducted at all centres). Support material for both lectures and tutorials were available online. Students were expected to download the appropriate PowerPoint slides prior to the lectures. The slides did not contain all the answers for lecture examples, so that students could be asked questions and be encouraged to be active in their learning in class. Tutorial solutions were provided on the website at the end of each week to encourage staged or incremental learning.

Workshops
A particularly novel innovation was the provision of a "talk-through" step-by-step online workshop for each module. Prior to the adoption of WebCT, workshops were conducted...
face-to-face each week. The concept behind the workshop was to provide a bridge between the lecture and the tutorial. To this end, workshops were held in the same week as the lecture, but later in week, while tutorials were held the following week. The aim of the workshop was to facilitate understanding of lecture material by having students work through a question in a supervised class, prior to attempting similar problems on their own (before attending tutorials). Whereas the central concept was excellent, there was an inherent difficulty in that students fell into three distinct groups. One group of self-motivated students attempted the workshop question before attending, and then had to wait until the end of the workshop to check their solution. A second group attended, copied down the solutions as they were provided, and went away having done no work of their own. The third group, which was by far the minority, kept pace with the workshop and did the work step by step at the direction of the workshop leader. With between 60 and 80 students in a workshop with a single facilitator, most students were dissatisfied with this learning experience.

The MA2 coordinator decided to address this shortcoming by using the content module within WebCT to deliver online workshops. Each problem was divided into small steps to replicate how it would be covered in a live workshop and then a page was created for each step. Each page contained 3 parts: the first provided with the answer to the question on the previous page, the second discussed the issues in the current step, and the third gave the students a task to undertake before moving to the next step. Students progressed between pages by selecting the next step in the list of contents. An example of the first three steps in an online workshop is shown in Figure 2.

Self-Tests and Quizzes
Self-tests were included for each module, showing not only the correct answer but also giving feedback on the students’ selections, thus providing a further learning opportunity. In addition, students were expected to complete an online quiz every two weeks covering two modules. Although these quizzes contributed towards the students' assessment, they were designed as an active part of the learning experience. During the quiz week, quizzes were available online from 9am Monday to 10 pm Friday; the quizzes were open book; students were allowed two attempts with their higher score being recorded, and the solutions were released online at the end of the week.

E-cussions
Another innovation was the introduction of e-cussions to familiarise students with online discussions. The coordinator began a new e-ussion each Monday with a question or a statement and students were expected to contribute in two ways. They were required to initiate a response to stimulate further discussion at least four times during the semester plus they were expected to contribute to an existing discussion in four other weeks.

Evaluating the WebCT Experience
The MA2 coordinator discovered that online teachers and facilitators must not only acquire new skills, but also move towards experiencing metacognition - "what the learners think and feel about the subject under consideration" (Rogers, 1993, p. 216). To this end an extensive feedback survey was designed concerning delivery and structure of MA2. The survey was posted on the home page with the request to "please complete this voluntary feedback survey". Questions consisted of both multiple choice and free response. Of the 189 students enrolled in the subject, 124 completed the survey.
Figure 2: Excerpt from Workshop for Module 5

Step 1

The Workshop question for Module 5 is Case 5.46 which starts on page 199 of your text and goes onto page 200.

This is quite a long question, but it provides a valuable comparison of traditional and activity based costing systems.

When you first read the question, you probably won't take it in at a lot, but you should get an overview. Start by reading the requirements and then read through the case.

OK, now is the time to read.

Step 2

Requirement 1 asks whether Product G is the company’s least profitable product.

Do NOT simply write “yes” or “no”. You must explain your reasoning.

The simplest way is to calculate the gross margin or gross profit for each product.

Do this now.

Step 3

Here are the actual gross margins for each product:

<table>
<thead>
<tr>
<th>Product</th>
<th>Product T</th>
<th>Product W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product G</td>
<td>$211.00</td>
<td>$234.25</td>
</tr>
<tr>
<td>Product T</td>
<td>191.00</td>
<td>169.50</td>
</tr>
<tr>
<td>Actual gross margin</td>
<td>$22.00</td>
<td>$44.75</td>
</tr>
</tbody>
</table>

This means that using the firm’s traditional, volume based product costing system, Product G IS the firm’s least profitable product.

However, the validity of this conclusion depends on the accuracy of the product cost reported by the firm’s product costing system.

Requirement 2 asks whether product W is a profitable product for the company.

What do you think?
Student responses can be grouped to indicate four general principles. First, that there was overall satisfaction with the quality of the subject and the way in which substantial resources were offered online. Secondly, that the use of WebCT enhanced the learning experience and promoted independence, essential criteria for evolving life long learning skills. Thirdly, that WebCT made access to learning materials more readily suitable to the practical constraints of the learners' individual situations. Fourthly, that many students valued highly their relationship with the MA2 teaching team, whether in person in tutorials or lectures, or more distantly, as email or bulletin board correspondents.

1. **Overall satisfaction**

As shown in Table 2, student responses indicated very high overall satisfaction with the quality of the subject and the way in which it was delivered.

<table>
<thead>
<tr>
<th>Student Responses</th>
<th>Strongly Agree %</th>
<th>Agree %</th>
<th>Disagree %</th>
<th>Strongly Disagree %</th>
</tr>
</thead>
<tbody>
<tr>
<td>I was satisfied with the quality of the MA2 learning environment</td>
<td>35.4</td>
<td>70.1</td>
<td>12.6</td>
<td>1.2</td>
</tr>
<tr>
<td>The overall workload for MA2 was reasonable.</td>
<td>20.7</td>
<td>31.2</td>
<td>15.5</td>
<td>2.6</td>
</tr>
<tr>
<td>The way in which MA2 was delivered was effective.</td>
<td>34.2</td>
<td>57.0</td>
<td>5.3</td>
<td>3.5</td>
</tr>
<tr>
<td>The different aspects of MA2 worked well together to help me learn.</td>
<td>25.2</td>
<td>67.0</td>
<td>7.0</td>
<td>0.8</td>
</tr>
<tr>
<td>The Web site enhanced my learning in MA2.</td>
<td>23.3</td>
<td>52.5</td>
<td>22.2</td>
<td>2.0</td>
</tr>
</tbody>
</table>

When asked to describe the strengths of the subject presentation, responses ranged from simple statements such as

*I enjoyed it*

to more descriptive comments such as

*Overall the outlay of this subject is quite advanced in terms of a new technology for learning. The presentation was easy to use*

and

*I found the MA2 website very useful for all aspects of this subject. Particularly I liked the lecture notes, key-terms, workshops and tutorial answers provided online, this was very useful to me. The online quiz was a good assessment, as it guided you to your knowledge about each module, throughout the course instead of not knowing until the end.*

Students' satisfaction was also obvious when they were asked how the subject could be improved. Some students offered constructive comments, while many were so pleased with it that they were unable to answer the question, instead responding

*I think it is perfect*

or

*It is one of the best presented subjects that I have studied so far. Can't think of anything off the top of my head that would improve it.*

Some students used the opportunity to recommend that other subjects could be improved by adopting a learning environment similar to that in MA2:
This was the first time I had used online resource for flexi learning. As a part time student I found that this approach made it a lot easier to learn course. I just wish some of my other subjects would follow suit.

2. Independent learning
Student responses confirmed the potential WebCT offers for more flexible learning, greater personal opportunity and increased autonomy. The results are summarised in Table 3.

Table 3: Students perceptions of autonomy

<table>
<thead>
<tr>
<th>Student Responses</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The MA2 structure helped me to develop the ability to work independently.</td>
<td>28.1</td>
<td>59.6</td>
<td>11.4</td>
<td>0.9</td>
</tr>
<tr>
<td>Material available from the Web site allowed me to control the pace of learning</td>
<td>33.3</td>
<td>37.7</td>
<td>9.0</td>
<td>0.0</td>
</tr>
<tr>
<td>The computer-based materials used in this subject allowed me to check what I had learned.</td>
<td>33.0</td>
<td>63.2</td>
<td>3.8</td>
<td>0.0</td>
</tr>
<tr>
<td>Teaching resources and aids were skilfully used to assist my learning</td>
<td>43.7</td>
<td>49.1</td>
<td>6.3</td>
<td>0.9</td>
</tr>
<tr>
<td>I found the self testing option provided in this WebCT based subject useful to my learning</td>
<td>36.5</td>
<td>52.9</td>
<td>8.7</td>
<td>1.9</td>
</tr>
</tbody>
</table>

While students were not specifically asked to comment on how the delivery of MA2 helped them to develop as independent learners, many chose to focus on this area when asked about the strengths of the subject. Some examples of these comments are:

I think that the main strength of this subject is the focus on individual responsibility. I liked the fact that the quizzes were on our own time.

The self reliant aspect, using the web as it lets you work at your own pace.

Being able to access everything on the web allowed me to control the pace of my learning by not having to wait for weekly lecture notes and workshops like in the other ACCY subjects.

Compared to other subjects, I think this is a subject which can help the students to develop the ability to work independently. And also, the students can face to face to another student in the Bulletin Board, this communicate with other student, that is the good idea and help the student solve the problem though communication.

The clear manner in which it is presented makes learning much easier. Allows you to work at your own pace, and is flexible.

Once again, some students commented on the need to extend this development of the independent learning experience into other subjects. One such comment was

I think other subject lecturers can consider use of WebCT as for the student it offers more support. Because of use of WebCT learning is more convenient for the student and that can help the students to develop the ability to work independently. And, more encourage communication with the teacher and another student. I think that WebCT is a good and useful method. So, I think other
subject coordinators need to consider using WebCT to help students to understand their subject.

3. Ease of access
Another principle that is closely linked with independent learning is the accessibility of information, communication and feedback. Students appreciated being able to access material at a time which suited them. They were also very positive about the ease with which WebCT could be used to solve problems and keep them up-to-date about their progress in the subject. One student declared that

_The most useful tools on line was basically all that was offered on line. It allowed many people from Sydney more time to work at home and at their own pace instead of coming in and wasting hours on the train for just an extra computer lab or workshop. Often if you missed a lecture or you really didn't get all the information down from the tutorial it was easy to access it from home instead of fighting with the copy machine in reserve and searching everywhere for the folders that seem to be always missing. The notes and compilation of key points was useful in the fact that they provided a concise summary of the textbook that was clear and easy to understand hence saving time on note making._

Other students commented that this accessibility was the greatest strength of the subject: _All the information was there whenever you needed it and it was clear and concise. Many people face the challenge of balancing work and university hence learning at their own pace and attaining material when desired (even if it meant at midnight) was possible. The frequent quizzes also provided the insurance of continual effective revision throughout the duration on the course._

_The accessibility of the web site and information for the subject. In many subjects, it is hard to communicate with lectures/tutors/students so having a universal web site where everyone can access the information, it was very helpful to everyone's education, in my eyes. Thanks again!!_

_All the items on the website were useful, even for small questions. You were able ask questions without waiting in lines, and there was a quick response time. The lecture notes were clear and easy to understand._

_The strength is I can easily get access to the Internet so that I can study this subject more effectively._

4. Reliance on teaching team
The teaching team consisted of the lecturer, who was also the subject coordinator, and six tutors. Students' comments highlighted the central role played by these teachers, whether in person, or through WebCT. These responses were consistent with Mason's (1998) survey of the issues and practices of globalising education, where she found that

_[t]here is absolutely no evidence that learners are able or willing to do without teachers, no matter how well designed the materials, now extensive the resources or how "just in time" the learning ... The fundamental role of the teacher or tutor has not changed but the mode of operation has (Mason, 1998, p. 158)._ 

Students recognised this central role of the teaching team through positive comments about the lecturer and tutors. These comments tended to fall into two distinct types: those about skills and those about attitude, with the overriding feature in all comments being the ability
with which communication occurred through whatever medium. Examples of comments about teachers' skills were:

- *That all the teaching staff is very helpful in assisting us to learn the material, especially when the subject is quite difficult at times.*
- *I had a great tutor whom I am very thankful for. I think it is imperative to have a good tutor.*
- *[The lecturer] was highly organised. Excellent lectures and illustrative overheads.*
- *The lecturer was great!! Material was presented clearly and in a reasonable amount.*

Students were also concerned about their teachers' attitudes toward them. They were favourably impressed by teachers who were easily accessible and concerned about assisting students to learn, as shown by comments such as these:

- *The lecturer is great, she is easy to deal with, she can be contacted with ease and responds quickly to any problems that you might be having.*
- *[My tutor] is a great tutor and both she and [the lecturer] genuinely cared about how my learning of the material was going.*
- *Tutor was most impressive with a genuine desire to help students learn and pass the subject.*
- *Such an organised lecturer with the right attitude in assisting students to learn and pass the subject.*
- *The way that the lecturer taught us is very easy to understand and the website is very comprehensive, but the most important is the lecturer is very nice and kind.*
- *The way [the lecturer] came across in lectures and her understanding of student's problems, was appreciated.*
- *My tutor is friendly and willing to assist me to understand the questions.*

The specific online communication devices received favourable responses with one student writing:

- *The most useful tool is the bulletin board which allow us to communicate with the lecturers more effectively also, the e-cussion is also very interesting.*

The value of the student/teacher relationship was also indicated by negative comments. A few students indicated that they perceived that a teacher had failed to fulfil the role adequately, with one such comment being:

- *My individual tutorial was useless, and a complete waste of time, as the tutor was hard to understand, and difficult to approach.*

A small number of students were not totally happy with the integration of WebCT into the delivery of MA2 (see Table 2) and wanted more direct communication with staff. However, the written responses indicated that this was usually for one of two reasons: either the students found it difficult to organise themselves or they had not yet learned to communicate comfortably online. Examples of comments from these students were:
I prefer face to face teaching. having everything online like the workshops you tend to leave them behind and do later.(perhaps too late if ever.)

I didn't enjoy doing the workshop questions. It sounds great that a student could do the work in their own time but I found that the internet took away the discussion aspect of learning in a person-to-person workshop where you could discuss ideas and thoughts are bounced off from comments made by students. I did not read all the replies in the internet workshops and I'm sure most students would not have either. Sometimes students need to be pushed into learning.

Conversely, there were other students who wanted even less face-to-face interaction, although many of these admitted the need for the "guide on the side" to help them through the material. Comments from these students included:

- I found the tutorials weren't overly useful because I knew that I could work through the answers to the questions on my own.
- Found that to use my time most efficiently, I did not need to attend lectures, but rather use that extra time to go through the work myself at a faster pace.
- I think the knowledge of [the lecturer] was more than enough and her knowledge was communicated well via the web site.
- Because I didn't spend much time at Uni or through classes because of work commitments and different cities (Melbourne), I found that the internet web site was very helpful because I didn't fall behind in topics whilst I was away on business. I really appreciate that. This is probably the best subject that I have learnt under and I enjoyed learning this subject with you.

**Staffing Issues**
The integration of WebCT into MA2 raised a number of practical issues which need to be addressed as flexible teaching and learning systems develop further. Perhaps the most important of these relate to workload and training.

1. **Workload**
The issue of workload is of concern to both students and staff. As mentioned previously, the use of WebCT encourages students to take more responsibility for their own learning. It allowed MA2 to be presented in a flexible mode, yet with a structured approach to the pace of study. While fortnightly online quizzes may at first have appeared to be onerous, students overwhelmingly found them helpful, making comments such as

- The online quizzes assisted me to do a step by step studying through the session, without having to leave my studies until the final examination week.

and

- The online quizzes were extremely beneficial to me. Even though I was taking a test, I felt that I was learning as I worked through them. Also, getting good results increased my confidence that I understood what was happening in the subject and was on the right track.

Despite increased benefits for students, WebCT places increased pressure on staff. The asynchronous nature of the communication, which allowed individual students to readily receive assistance, also meant that students' expectations for contact with staff increased. In addition, the adaptation of pedagogy to this mode of teaching requires time, training and
recognition by the institution. However, with the current funding environment for the higher education sector in Australia, there is little flexibility to provide the resources that are necessary for this. Like fellow academics at Deakin University, “our experience is that high student contact hours, increasing administrative responsibilities and research demands leave insufficient time to reengineer and to develop extensive access to resources” (Graham, Scarborough, & Goodwin, 1999, p. 42).

2. Training
The teaching staff involved in MA2 differed widely in their knowledge of WebCT, and in their experience the computerised provision and development of material. Whereas some were highly motivated to learn by themselves and grapple with this new medium of delivery, others were not persuaded that there was sufficient value from using WebCT in their teaching. This resistance to change may have included their personal loss of centrality in the teaching process with the student becoming the focal point rather than the teacher (Dunbar, 2004). This occurs because online learning promotes active student-centred learning and therefore “the role of the teacher changes from one of authority or sage to facilitator or guide” (Burd and Buchanan, 2004, p. 411).

The most practical way of training the teaching team was to encourage them to learn by doing. Indeed, favourable or unfavourable attitudes toward using any new technology is greatly influenced by informal comments of colleagues who have already experienced it (Branchecau and Wetherbe, 1989). Hands-on experience helps to reduce uncertainty about the medium and to increase an understanding of its benefits and possibilities for enhancing learning. However, given the broad range of skills needed to use WebCT in an effective manner in teaching,

   it is difficult for staff with already heavy teaching and research workloads to allocate sufficient time to acquire or enhance these higher level skills, but the neglect of this will lead to inappropriate and unstimulating uses of [computer aided learning] (Graham, Scarborough, and Goodwin, 1999, p. 43).

Thus, the commitment to the implementation of WebCT involves staff training, which in turn needs to recognised as an institutional commitment, despite its wider resource implications.

Conclusions
The MA2 experience has shown that when flexible online learning “begins to be used seriously, the nature of the teaching and learning environment is inevitably changed” (Lewis and Romiszowski, 1996, p. 14). While online learning as experienced through WebCT is not considered a substitute for the face-to-face experience, it helps to make provision for students who cannot attend in person through illness, misadventure or work commitments, as well as those located on distant campuses. It motivates and encourages students to become involved in writing for a real audience of their peers instead of merely composing assignments for their teachers (Berge and Collins, 1996). It also provides a challenge to institutions to provide appropriate staff training and apposite workloads.

The online learning process helps students to attain desired learning objectives in a flexible, self-paced environment. The challenge is to take advantage of the extent to which WebCT can enhance learning and prepare students with the skills to become life long learners. To optimise this potential, there is the need for teachers to be prepared to accept this challenge, and if necessary, change how they teach.
References


