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How do students perceive the enhancement of their own learning? A comparison of two Education Faculties' experiences in building an online learning community for Bachelor of Music Education & Bachelor of Education students.

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ABSTRACT:
Enhancing learning and teaching in blended learning environments is a strategic goal of The University of Sydney as eLearning continues to grow. Blackboard (WebCT) was integrated into the undergraduate Bachelor of Education program curricula through e-readings, discussion boards, lectures and online assessment tasks. The study was undertaken among 63 Bachelor of Education in Human Movement and Health Education students in 2006 and 61 Bachelor of Music (Music Education) students in 2007. The purpose was to encourage active and collaborative learning with the focus on building a blended learning environment. A pre and post quantitative questionnaire measuring students' perceived online learning skills, confidence, experience, anxiety, enjoyment and enhancement of learning was conducted before and after the teaching activities across the two faculties (Faculty of Education and Social Work [EDSW] and Sydney Conservatorium of Music [SCM]) providing teacher education during 2006 & 2007.

The Research Questions for this study were:
1. What is students' past experience with WebCT?
2. How do students' perceive their skills, confidence, experience, anxiety and enjoyment in regard to using computers, Internet and WebCT?
3. How do students perceive the enhancement of their own learning using WebCT?
4. How do these variables change among students before and after a course using some WebCT delivery?

The results of the study showed that blended learning environments provided enhanced learning experiences for both cohorts of students. Identified variables affecting the learning process and how students in EDSW and SCM perceive their learning will be useful in planning future eLearning for these students.

Keywords: research, eLearning, teacher education, blended learning environments

INTRODUCTION

Teacher education programs are faced with financial constraints while struggling with large enrolments and yet teacher educators are expected to practice cutting edge pedagogy so that the beginning teacher is prepared for the 21st century classroom. The initial rationale for increasing the eLearning profile in the undergraduate Bachelor of Education degree (Human Movement and Health Education (HMHE) and the Bachelor of Music (Music Education) degree at The University of Sydney, was to enhance students' tertiary education learning experiences whilst engaging in technology. Students in tertiary education today require a blend of assessment tasks, tutorial discussion and lectures in a technology and collaboratively rich environment because "this mix of technology, pedagogy and design results in better learning" (Long, 2005:60). Blackboard (WebCT/CE6) was integrated into the undergraduate Bachelor of Education program curricula through e-readings, discussion boards, lectures and online assessment tasks to create a blended learning environment for the students.

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As ICT is a mandatory component of pre-service teacher education programs (Whitton, Sinclair, Barker, Nanlohy & Nosworthy, 2004), and is acknowledged as a critical component of pre-service teachers' professional training (NSW IOT, 2006), it is one that presents unique challenges and stresses (Ferfolja, 2008; Murray-Harvey, 1999) and therefore, demands better support for pre-service teachers enhancement of learning. Research supports that eLearning enables the pre-service teacher to alleviate anxiety and feelings of isolation from university lecturers and peers as the technology enables learning and communication to occur asynchronously, enabling the pre-service teachers to interact and collaborate with peers and academics anywhere and at anytime (Garrison & Anderson, 2003 as cited in Rowley & Tindall-Ford, 2008). "Recent data showing that pedagogy using 'interactive engagement' methods results in higher learning gains than does the traditional lecture format and is usually accompanied by lower failure rates" (Long, 2005:60).

It is well-documented that pre-service teachers have concerns with, amongst other issues, behaviour management, lesson planning and curriculum design (Groundwater-Smith, Ewing and Le Cornu, 2007; Whitton et al., 2004) increasing the popularity of blended learning environments in addressing some challenges in the preparation and support of pre service teachers (Ferfolja, 2008; Holstrom, Ruiz & Weller, 2007; Schuck 2003a). Tertiary teacher training programs are utilising internet based technologies (such as WebCT/Blackboard/Moodle etc) to build blended learning communities and to enhance pre-service teachers' learning experiences.

EDSW and SCM are not the first faculties at USyd to incorporate the blended learning environment and research evidence shows that this format has the potential to allow students to benefit from the responses and reflections of their peers as well as from the instructor's responses (Akanbi, 2000, p.3). As a part of the development of a blended learning environment it was important to recognize the commitment that both faculties have to the ongoing improvement of graduate attributes through the students' interaction with and use of technology through eLearning (Rowley & Tindall-Ford, 2008). The blended learning environment was a mechanism to further develop university lecturers' understanding of the concerns of education students and to evaluate WebCT as a medium of instruction and contact. To develop competence in students as eLearners it was vital to create opportunities for e-learning to be integrated further into existing UoS and it was thought that WebCT sites would be useful in addressing the development of graduate attributes through the pre-service teachers' interaction with and use of technology. The graduate attributes identified by USyd and supported through this study were a commitment to independent learning; critical thinking and analysis skills and appreciation of computer based activities as a part of the learning environment.

eLearning

How is eLearning related to quality education? Quality education incorporates the intellectual and environmental significance of the individual's learning. Using the model of eLearning, the WebCT sites were developed initially to allow easy access to teaching and learning materials representing the access students would have encountered if attending lectures on campus. Quality education, therefore, should be defined here as that which best needs the needs of the students. Much of the literature on e-learning focuses on the general competence level of students to embrace the technology in an attempt to enhance learning (Bowles, 2004). What is not clear is how the students perceive this medium as an aid to their independent and blended learning. So what is eLearning and how should it be incorporated into the curriculum of existing UOS? ELearning has the potential to simplify complex communication, to increase the pace of transferring information with a transformation process that has the potential to maximize the effectiveness of the learning intervention (Bowles, 2004). The prospect, therefore, of developing a blended learning environment for teacher education students was perceived as manageable as the students were technology ready and literate (Rowley & Tindall-Ford, 2008). The challenge was to manipulate this technology literacy into an integral part of their study so that learning was enhanced in a meaningful manner. Research by Paul Ramsden (2003) stated the need for university teachers to develop a connection between student learning and quality teaching**.** As a part of the development of a blended learning environment, it was important to recognize the commitment that the USyd has also to the ongoing

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development of graduate attributes through the students' interaction with and use of technology through eLearning.

AIMS

2004/2005/2006 Student Course Evaluations were examined and focus groups were undertaken by both authors from both Faculties to assess students' attitudes towards introducing online forms of course delivery and blended learning using WebCT. A restructure of course delivery using WebCT was undertaken and delivered in Semester 1, 2006 (EDSW) and Semester1 and 2, 2007 (SCM). Features include the introduction of some online lectures, some face-to-face lectures; all face to face tutorials; some online quizzes and assignments; online discussion boards and an assignment requiring student postings on an online discussion board.

The comparisons between pre and post questionnaire are presented as changes in students' perceptions towards using blended learning. As students were asked about anxiety and stress in using eLearning these changes are also noted in the post questionnaire. The intention was to measure students' adaptability and acceptance of the introduction of WebCT into the UOS and whether the support was enhancing their learning environment and impacting its significance.

Research Questions

The Research Questions for this study were:
1. What is students past experience with WebCT?
2. How do students' perceive their skills, confidence, experience, anxiety and enjoyment in regard to using computers, Internet and WebCT?
3. How do students perceive the enhancement of their own learning using WebCT?
4. How do these variables change in a group of 63 education students before and after a course using some WebCT delivery?

METHOD

A questionnaire was used to examine the following before and after the course in semester 1, 2006 (Bachelor of Education) and in semester 1 and 2, 2007 (Bachelor of Music-Music Education).

- General Computer Skills (including Microsoft Word Skills; PowerPoint Skills)
- Internet Skills
- WebCT Skills (particularly Discussion Board Skills, online quiz skills
- Confidence using computers
- Confidence using Internet, WebCT, WebCT discussion boards
- Prior Experience with WebCT
- Prior Enjoyment of WebCT
- Enhancement of Learning with WebCT after the course
- Anxiety about using WebCT, (e.g. doing coursework using WebCT, submitting assignments online or doing exams online) and about sharing opinions on WebCT discussion boards

Participants

Firstly, a pre-questionnaire investigating students' experiences, use and ability level of computers, the internet, confidence and experience in blended learning environments (WebCT) and their perceived enjoyment for eLearning was administered to Bachelor of Education (n=63) and to music education students (n=61). The questionnaire was developed from the work of Pajo & Wallace, 2001 who explored the barriers to computer-based online learning. Secondly, a post-questionnaire examined the students self-rating of experiences, use and ability level of computers, the internet, and blended learning environments (WebCT). Students' perceived enhancement of learning with WebCT was administered at the conclusion of the courses.

Instrument

The questionnaire utilized a Likert scoring system that asked students to rate their computer,

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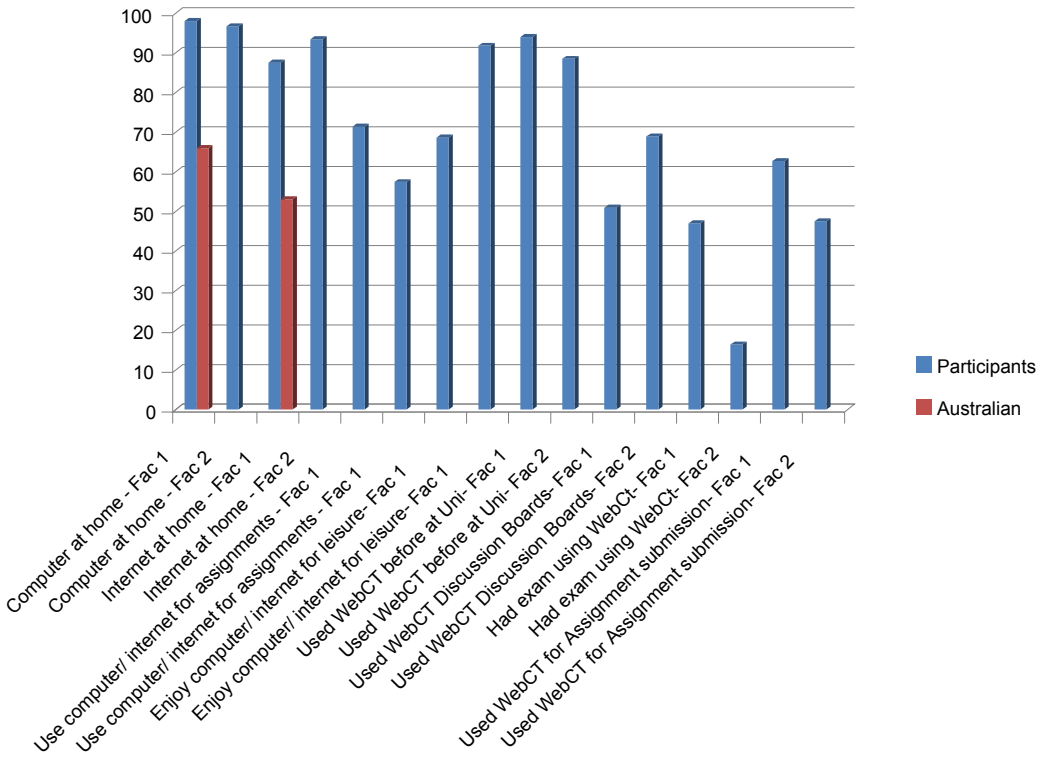
internet and WebCT skills and experiences using a scale from 1 to 5 from (very poor (1) to excellent(5)). Students then rated their confidence and feelings of using WebCT. Finally, needs, expectations and usefulness and the most/least helpful to their learning when using WebCT and what they perceive WebCT sites can do to enhance their learning was asked in open-ended comment section of the questionnaire.

RESULTS

A quantitative pre and post questionnaire was used to examine students' previous experiences using WebCT, their perceived enhancement of learning as well as change in their perceptions. Open-ended questions asked students to identify needs before and during the blended learning course delivery and perceptions and changes in their needs, expectations, and usefulness towards using WebCT and enhancement of learning after using WebCT.

The findings revealed moderate to very good levels of experience, use and confidence of using computers and the Internet. The pre-questionnaire showed little or limited experience with WebCT discussion boards, exams and assignments (see Figure 1). In the following four figures Faculty 1 (Fac 1) is the Faculty of Education and Social Work (EDSW) and Faculty 2 (Fac 2) is the Sydney Conservatorium of Music.

Figure 1. Students' Previous Experience with Computers, WebCT and the Internet



As shown in Figure 1, there was a strong baseline skills base in computers, the internet and WebCT. There is not, however, the same level of experience learning through WebCT (i.e. discussions, quizzes and exams). The two faculties experienced similar increases in student confidence after using WebCT.

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Figure 2. Change in students' anxiety about using WebCT

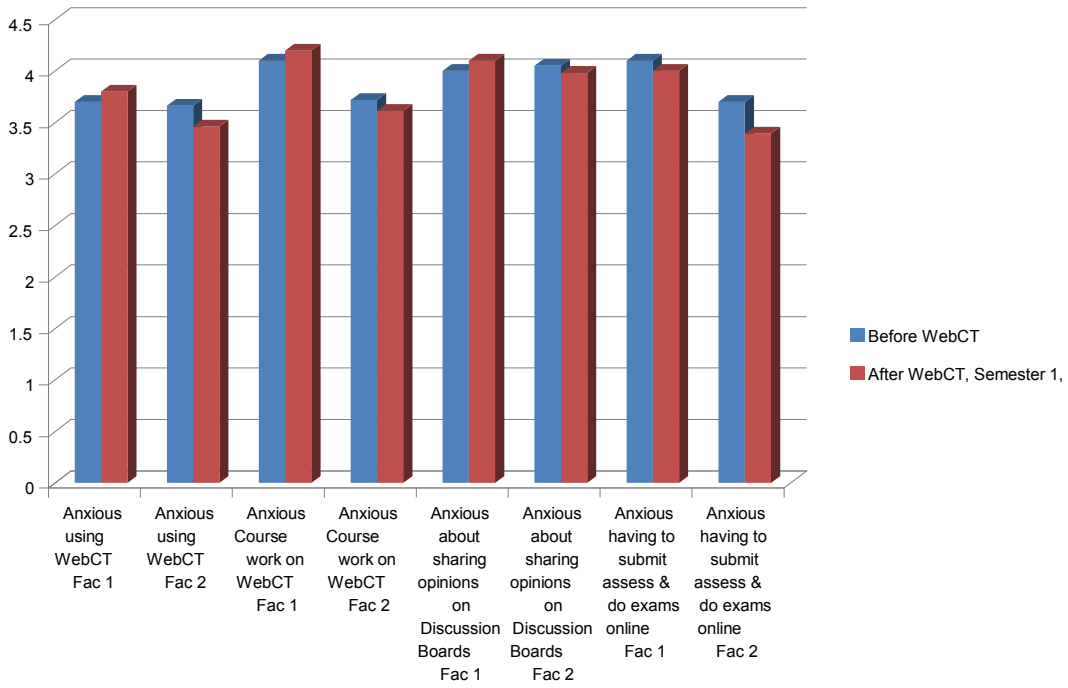

Figure 2 shows students' anxiety in using WebCT mostly decreased after experiencing the blended learning.

Figure 3. Changes in Student Skill Development after WebCT

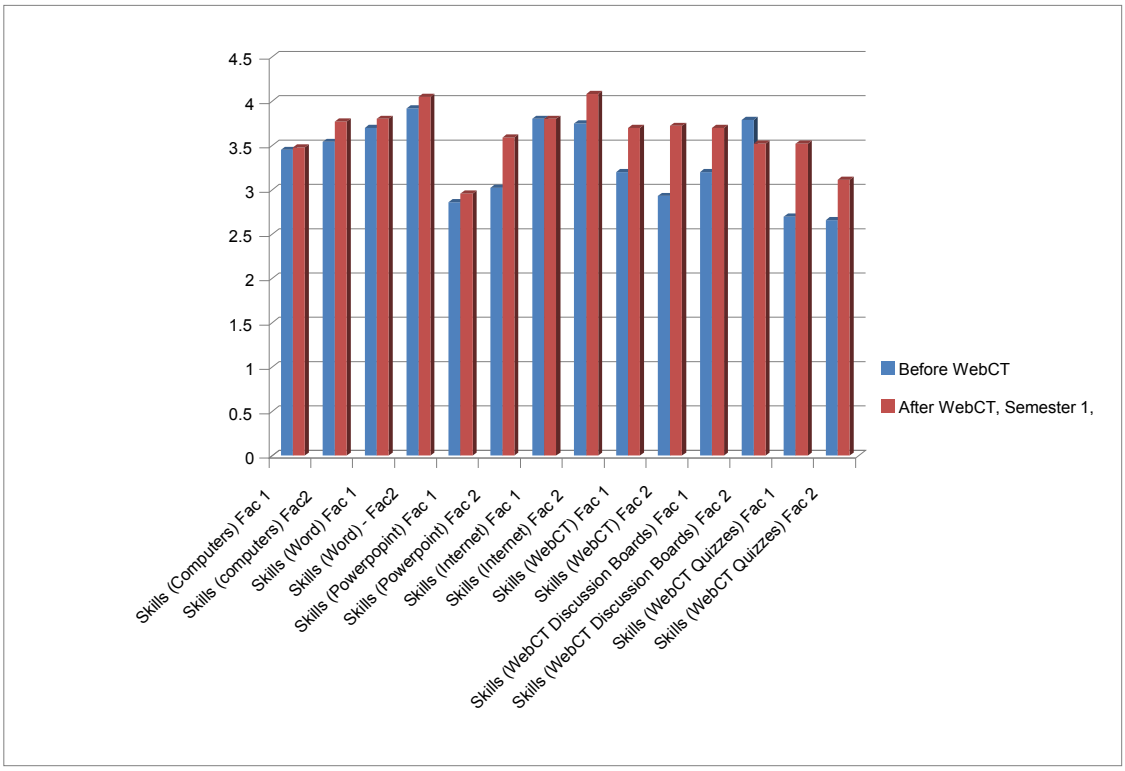

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Figure 3 shows that students' technology skills increased after using WebCT.

Figure 4. Change in Students' Experience, Enjoyment and Enhancement of learning with WebCT

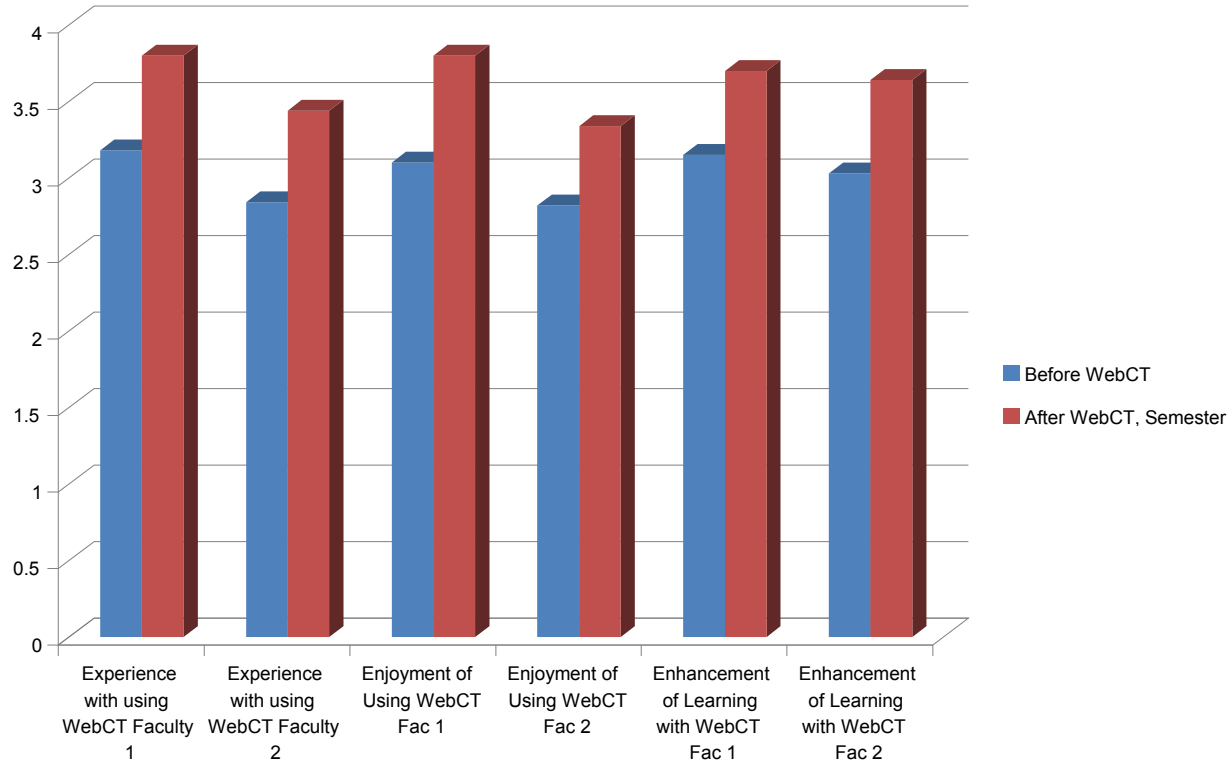

Figure 4 shows that students' enjoyment and enhancement of learning increased as a result of the blended learning environment.

Results Summary

The results show students perceive an enhanced learning experience through the blended learning environment. They particularly noted the usefulness of the discussion board, which enhanced their learning through an opportunity to discuss issues with each other and university teaching staff. The predictors of enhanced learning after the blended learning experience were: general computer and internet skills before the WebCT experience; low anxiety with WebCT after using it; confidence using WebCT online discussions, quizzes and assessment tasks; and enjoyment of the WebCT component.

DISCUSSION

The results show that both faculties were able to achieve enhanced learning from the enjoyment of the blended learning environment. Students reported low anxiety post engaging in the blended learning where they reported high anxiety in the pre questionnaire. The aim of introducing WebCT was to enhance students' learning experiences whilst engaging in technology, promoting active learning for students and introducing students to technology through blended learning environments.

The discussion boards supplied an important insight to academics on the concerns and issues faced by pre-service teachers. The discussion boards were essential to student learning, to demonstrating

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an understanding of the theory whilst developing the graduate attributes. Academics needed to monitor and regulate the asynchronisitc discussion forums and continually update information e.g. posting websites, lesson plans, and support materials and research suggests that supervisors' presence on line is critical for the success of asynchronisitc discussion forums (Sing & Stollof, 2007 as cited in Rowley& Tindall-Ford, 2008).

The study provided much needed feedback from students about their technical competence, fears and anxiety about technology, and WebCT. The future aim is to work towards enhancement of student learning through a re- structure of course delivery-into a blended learning environment across a variety of courses.

It is also apparent hat the students had fun (which also enhances learning) with experiencing the WebCT site in their first education unit study at university. Having fun will increase the students' skills, confidence, experience and enjoyment and reduce anxiety in the first year.

Before taking the course engaging in eLearning the students had previously used WebCT in 1-3 courses at USYD and only half had used discussion boards, exams or assignments on WebCT. It is no surprise that the students reported high anxiety with previous WebCT courses
After taking the course engaging in eLearning the students' skills, confidence, experience, enjoyment increased significantly. It is also noted that enhancement of learning was positively associated with skills, confidence, experience and enjoyment. Further to this the students' enhancement of learning was negatively associated with past anxiety about WebCT

RECOMMENDATIONS
The results of the study show that enhancement of learning was mainly due to enjoyment and reduced anxiety or the development of familiarity and competence with using the online functions.

With this result, we recommend promoting the fun that can be experienced utlising the eLearning model of instruction with some introductory training in WebCT in Week 1 to increase skills, confidence, experience and enjoyment and to reduce anxiety.

We also recommend ways of requiring students to use WebCT discussion boards, quizzes and assignments to increase enjoyment, enhance learning and reduce anxiety.

Finally, we suggest these measures be implemented early in the course and/or early in students first year of university study.

CONCLUSION
The sites were developed with neither little nor no evaluation of the students' technology background and competence or knowledge of what they wanted to see and do on a WebCT site. One aim of this study was so that an enhancement of communication with all interested parties - students, university academics and their peer group. The introduction of blended learning for these students also has the benefit of introducing them to a different concept of learning and community and "it is essential that educators re-evaluate the role of virtual and physical space as a way to improve student (as we as faculty and staff) learning and engagement in community" (Bickford & Wright, 2006:4.2)

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Appendix 1 Open ended questions answered by EDSW student participants.

Question 7: Do you think that the WebCT component of this subject enhanced your learning? Why/ why not?

Yes – 50 responses (EDSW)	
	'it was good to have a concrete resource to come back to'
	'with the lectures online, as I took notes so I had to go through them'
	'gives 24 hr access to information'
	'gave chance to interact with other students to gauge what they are struggling with'
	'kind of - online links and extra notes'
	'learn at own pace and sleep in'
	'clear what was needed for each week'
	'allowed me to complete responses in my own time'
	'having the lecture notes online meant I had good lecture notes for the exams'
	'I think it is much easier to store, access and present information'
	'able to ask questions anonymously and get a response'
	'it helped to make sure we were thinking about the subject and doing work outside of uni
	'very valuable as all resources needed are readily accessible at all times. It's more organised'
	'people could provide feedback on certain topics and give their point of view enhancing peoples learning'
	'access 24/7'
	'greater discussion and broader views to be expressed'
	'links provided through WebCt have been really helpful'
	'because it s always there'
	'especially with the discussion boards and having all the lecture info accessible'
	'extra information'
	'discussion boards give a wide range of opinions'
	'as you got to see other peoples ideas and suggestion'
	'more content is given, which is good because we can use this info when teaching'
	'easily accessible'
	'enabled better communication between students'
	'its just a different way of communicating with others and learning at the same time'
	'made the subject very well organised'
	'helped to reinforce health learning and to continually analyse health issues
	'discussion and providing necessary information
	'more convenient to use'WebCT allows you to take things at your own pace, discuss the issues and submit assignments easily – excellent'
	'quizzes are good at consolidating finding, out what you don't know'
	'like to have a read about lectures before coming to class
	'discussion board and discussion assessments made me have a deeper understanding of subject and how to apply the things we have learnt'
	'quiz were valuable. Discussion provided relatively instantaneous feedback from peers rather than waiting to contact time next week'
	'the material is available to go back on'
	'resources and links. Also other peoples opinions'

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	‘reinforced what I learnt in class’
	‘made the subject available’
	‘provided means for discussion’
	‘discussion A+, learnt a lot’
	‘allowed for discussions to be argued/ presented and allowed other students to agree/ disagree
	‘it is valuable to have your resources in one area. It is easy to access and refer back to’
	‘easy access to heaps of resources and a good spot to socialise’
	‘great to interact and hear others opinions’
	‘gave resources for independent study’
	‘ability to access documents, links and information enhanced learning’
	‘great discussions to get ideas and opinions’
	‘the discussion boards help to develop ideas’
Not filled in – 5 responses (17, 38, 23, 32, 103)	
No – 1 response	
16	‘it is difficult to expect a student to study of their own accord if there is no assessable component’

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Appendix 2 – Open ended questions answered by SCM student participants.
Question 7: Do you think that the WebCt component of this subject enhanced your learning? Why/ why not?

Yes – 41 responses	
	'having lecture and tutorial notes available on line
	'having readings, resources (like lesson plans) and lectures online'
	'course outlines and due dates reminders'
	'access to all the help"
	'easy to be organize and information about exams'
	'resources easily obtained'
	'assignment tips from the lecturer'
	'the discussion boards'
	'being able to get lecture notes and tutorial handouts on line and assessment information'
	'access to notes and links to resources'
	'chatting on discussion boards'
	'having the lectures there means I can refer to them before and after the lecture – gave me an opportunity for further thinking'
	'course content online and links to online material'
	'incase you are unable to attend the lectures are available'
	'announcements about assignments , exams and grades'
	'access from home'
	'participating in discussion boards
	'reading people's opinions and freely communicating
	'it provides me with opportunities that I didn't get in class'
	'direct links to helpful websites according to the topic being studied'
	'the submission of assignments is easy and always gives you a record'
	'lecture notes'
	'gives me confidence to talk in tutorials because I have ideas from others'
	'having discussion boards to learn about other people's opinions'
	'clear and structured outcomes for the course'
	'discussion boards – lively, current and accessible'
	'getting Reponses from the lecturers on the discussion board when you ask a question'
	'discussion boards were fantastic. Also the resources online'
	'discussion and links to online resources'
	'knowing what others are going through'
	'advice from the lecturers '
	'having assignments online and discussion issues with others'
	'resources available and models of lesson plans that I can adapt and use for my own teaching'
	'having access to sound and video files'
	'provision of lecture notes'
	'being able to read advice given by lecturers when we were asking about teaching'
	'discussion between student to student and student to lecturer'
	'discussion on classroom management was useful'
	'discussion between students on the themes we were studying'
	'discussion and learning from other people's experiences'
	'discussions with our teacher's comments'
Not filled in – 20 responses	

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