

# **Selective Use of WebCT: Being the Master of Technology, Not its Servant**

**Peter Crawford**

Lecturer, Muresk Campus  
Curtin University of Technology, AUSTRALIA  
*CrawP@muresk.curtin.edu.au*

**Rod Kevill**

Lecturer, Centre for Educational Advancement  
Curtin University of Technology, AUSTRALIA  
*r.kevill@curtin.edu.au*

## **Abstract**

*The delivery of higher education units of study is undergoing significant change with the increased emphasis on, and the adoption of a range of student centred learning approaches. The rapid growth of new technologies offers possibilities to learners and lecturers that were previously unavailable. WebCT can increase the consistency, reliability and quality of student learning by allowing the student to work at the pace, time and location of their own choosing. These factors optimise learning conditions and increase the flexibility of the learning experience. This paper will look at the operation of two units and evaluates the experiences and thoughts of first year students as they move from a very structured Economics unit using parts of WebCT, to a Marketing unit that was more self directed, while using different parts of WebCT.*

## **Keywords**

*Economics, WebCT*

## **Introduction**

The basic Economics unit was taught in the conventional manner with lectures and tutorials. Students were assessed in a series of six paper-based formal examinations throughout the semester. However students were also provided with access to an on-line self-test environment using the Quiz Module of WebCT. An item bank of over 700 questions was prepared, based on chapter content of the unit textbook, and made available to students week by week during the semester.

In the subsequent Marketing unit, students were allocated 50% of their unit marks to individual or group projects of their choosing. The students investigated the demand for the product or products they selected, the pricing policy of the firm and the marketing strategies of the decision-makers producing the product(s).

The aim was to enable students to take control of their learning of the basic concepts of marketing by researching a topic of relevance to their background or future career goals. A total of 27 different topics were researched by the students. WebCT was used for group presentations and for interaction between groups via bulletin boards and email. Students gave two seminars: the first to present their topic to other students and receive feedback on their topic, and a final seminar to present their results. All students and groups were expected to and were evaluated on, their interaction and assistance to other groups. Student reaction to these units demonstrates that WebCT can be used to enhance the effective delivery of units without using all the WebCT facilities for all units. The student feedback from these units demonstrates that WebCT technology can be effectively used as a means to an end and is not the end in itself.

### **The Basic Economic Unit**

The economics unit was an introduction for students doing the "Business" stream of their Agriculture, Horticulture, or Aquaculture degree course. The unit was broken into six separate modules composed of four chapters of the textbook, each of which could be completed as a "sub-unit" in two weeks. Each module was examined upon completion by an in-class hard copy 40-item multiple-choice test (60%) and two essay questions (40%).

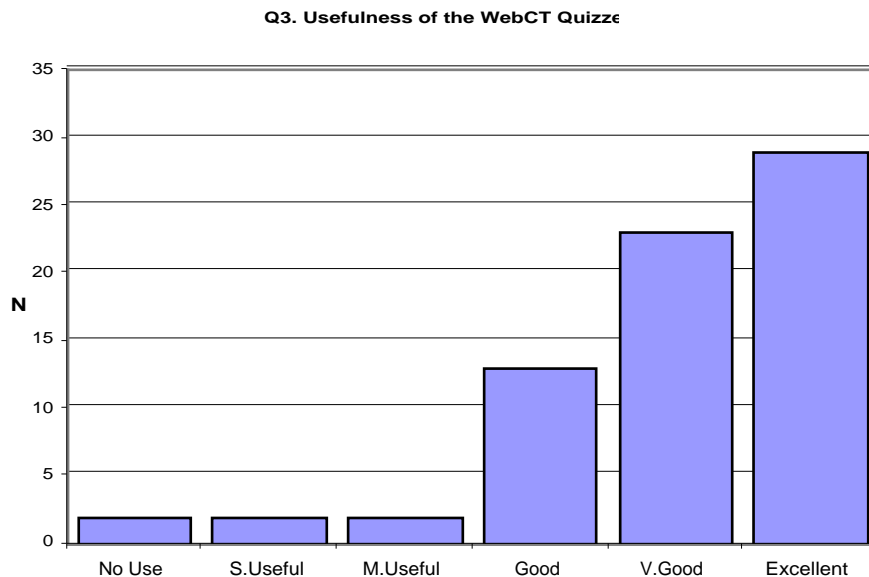
ANY student could make one repeat attempt at the multiple-choice section of each examination if they were not satisfied with their result. WebCT was used for delivering and administering the multiple-choice quizzes. For each chapter of the textbook, approximately 30 multiple choice questions (with feedback) were placed in a single-purpose WebCT on-line unit. The class list was added to the on-line unit, and students were given Internet access via on-campus computer labs or from their home. Thus the students could study each chapter of the text, then complete the 30 multiple choice questions in their own time, their own place, and at their own pace. Quiz marks and feedback were given immediately on completion of the quiz, and students could repeat the quiz up to five times.

Feedback is most effective when it is immediate and in sufficient detail so that the student is able to initiate corrective action (Waldrop, Justin and Adams 1996). It is also important that this feedback be given frequently for small steps rather than large chunks of learning (Ference and Vockell 1994). To assist their learning, students thus had a fully modularised unit, a sequence of lectures with accompanying lecture notes, the textbook, and a set of multiple choice questions with immediate feedback. This system forced students to learn as they proceeded through the unit material. The usual method of "cramming" at the end of the semester was rendered useless, since there was no end of unit examination.

This unit structure also resulted in the student taking an active role in the learning process. Hogan (1996) notes the irony of preparing a good lecture stating that "I did an enormous amount of reading and thinking about education in order to prepare my lectures, plan effective workshops and select readings and texts for my students, while the *students* did relatively little. I was the most active learner in my classes - because I had almost total responsibility for what was learned and how it was presented for consumption."

In this basic Economics unit, lectures were the start of the learning process. The student was expected to take an active role in learning, and was responsible for the successful conclusion of this process.

## **Results Of The Student Questionnaire**



*Question 3: Usefulness of the WebCT Quizzes*

Student comments for Question 3:

- This was of great benefit to us - success made easy and comments on incorrect answers are great.
- If answer was wrong it gave you feedback to help you in the future.
- A good way of testing ourselves.
- Helped focus study and give immediate feedback.
- Told you if wrong and WHY.
- Computer program was great for revising.
- Could check anytime - don't have to be in class. Easy to find answers quickly and feedback of where you went wrong was valuable.
- One of the best ways to learn through outside study.
- I really liked this because you could do it anytime and the feedback provided was really good.

**Question 4: Which system of assessment is best for this unit**

Student comments for Question 4. Answer A: "Six exams as now"

- Cannot have a final exam because there is too much to learn.
- It's great having 6 exams, relieves pressure at end of semester.
- Can concentrate on one exam at a time. Don't have to store huge amounts of information in your brain.

- You have to work the whole semester not just one week as you could with a final exam.
- The way we do it now is excellent.
- This is the best learning method that I have found to suit the hectic uni. life.

**Question 5: This unit has been very structured. Your attitude to this system is:**

Student comments for Question 5. Answer B:" It is of value to first year students to force study throughout the semester".

- Going on the wide range of people here, this forces them to study and helps kick-start some people who have been away from formal teaching.
- Allowed to learn it bit by bit and be examined on it rather than having to learn it all and then have a huge exam at the end when you have forgotten what you learned in the first week.
- I thought the system worked very well as the work didn't heap up over the semester. If it wasn't as structured, I wouldn't understand it as much.
- Keeps you from slacking in the first semester. Good background for the future.
- It was good because you studied as you go. You were forced to learn which didn't allow you to slack off till the last minute.

**Question 6: Any general comments about the unit?**

Student comments for Question 6.

- I thought the system worked very well as the work didn't heap up over the semester. If it wasn't as structured, I wouldn't understand it as much.
- The actual subject is not the most exciting so the way it was taught was good because it made it easier to understand with the notes and real life examples that the lecturer gave. I found it interesting and challenging.
- Much easier to understand than economics was at school.
- I find I have learnt heaps and now I understand what my old man is whingeing about when he starts going on about the economy!
- Good unit even though I knew nothing about economics.
- I thought this was the best unit of the semester and the easiest to learn.
- I enjoyed the unit. It has increased my understanding and interest.

## **Conclusions**

Mature age students stated that they particularly appreciated this system of self-contained modules as it imposed the discipline they needed to maintain their study. Students in general reported that they regarded the WebCT tests and feedback as a vital factor in their learning of the material in the unit. Students who stated that the WebCT tests and feedback were of little or no use to their learning, also stated that the reason for this was that they had problems with using computers. This leads to the conclusion that there must be help for at least some students in first year to learn to use and become confident with computers.

In general this unit structure allowed students to learn better, faster, more efficiently and reach a higher level of success than otherwise would have been the case. For difficult, knowledge centred, basic units such as this compulsory economics unit, learning via a structured WebCT quiz with immediate feedback can enable students to succeed when previously they would have become lost, confused, disillusioned, depressed and subsequently failed the unit.

The students also had the opportunity, and the responsibility, to take control of their learning and had immediate, accurate, impartial, personal and confidential feedback on their progress. This unit, though highly structured, effectively put the responsibility for success or failure squarely on the shoulders of the student. It also gave students the opportunity to succeed "a bit at a time" which encouraged these first year students to have confidence in their ability to succeed in subsequent units, such as the following Marketing unit which occurred in the next semester.

## **THE MARKETING UNIT**

### ***Why a self directed unit***

The pendulum in university teaching is moving away from teacher centred learning, towards more self direction and responsibility for their learning, by the student, with the objective of encouraging independent lifelong learning. As well as discipline specific knowledge, students in a marketing orientated workplace will need skills in identifying and critically analysing information, logical and independent problem solving and effective goal setting, time management, ability to complete a task, communication and interpersonal skills such as allocating responsibilities and managing

conflict. All this will be expected in the employee as well as the ability to work unsupervised, be self motivated, and proactive.

Giving more control to students will have real lifelong vocational advantages. It helps learners develop approaches and skills of much more value than they get by simply acquiring knowledge and then somehow demonstrating that such knowledge has been retained over a certain period of time" (Hiemstra 1994). If students are to be skilled in the attributes that future employers demand, they must practice them, they "must engage in such higher order-thinking tasks as analysis and evaluation" (Bomwell & Eison 1991). An important aspect of this unit was develop students abilities "to ask intelligent questions, communicate effectively, critically analyse sources of information, research issues and draw on resources" (Meyers & Jones, 1993).

### ***Organisation of the unit***

The students, who had now successfully completed the basic economics unit, were allocated 50% of their unit marks to individual or group projects of their choosing. The students investigated the demand for the product or products they selected, the pricing policy of the firm, and the marketing strategies of the decision-makers producing the product(s). The students researched a total of 27 different topics.

Within the broad constraint of "a marketing" orientation, the students had the freedom to develop the project as they wished. Students chose a wide range of topics, including Damaras (a sheep breed), Bamboo (shoots), Coastal Regeneration, Agroforestry, Wine Production, Salinity, Olives, Roses, Oysters, Lobsters and Oil Mallee.

Students were given the opportunity to select, define and develop a topic that was of interest to them and of value to their future goals. This would make the learning process more meaningful to the student, and thus encourage "a deeper and more lasting knowledge of the subject while increasing their involvement and participation in the process of learning" (Mathews and Barrington 1998). The responsibility for learning was shifted at least partially, from the teacher to the student.

### ***Unit Structure***

Normal face to face lectures dealing with the theoretical marketing concepts were held throughout the semester. Two hard copy exams (50%

of the unit marks) were held during class time. The remaining 50% of marks were allocated to the individual or group projects. The unit commenced with an explanation of how the unit would be organised and its emphasis on the student taking more control of the learning process. Considerable initial groundwork in group work, working in groups, organisation, time management, conflict resolution etc, was done to lessen the problems that would occur.

Teaching strategies included attendance at an introductory lecture to explain the format and expectations of the unit. The video 'Collaborative Learning' (Macbeth and MacCallum, 1996) was also viewed and discussed. Students attended workshops on WebCT (a web based educational environment) where they received some grounding in using WebCT and how to set up a Web Page. WebCT was used for the individual or group projects with each project allocated a web page which was subsequently developed by the individual or group.

A Bulletin Board was used by students to give other groups ideas, sources of information etc. This bulletin board allowed each individual to communicate with other people or groups. If a student or group had a problem, they could ask for help. If they had information of value to other groups, it could be posted on the bulletin board. The "public" Web Page and Bulletin Board emphasised the need for students not to do their "own thing" in isolation from others, but to find out what other students were doing and to interact in a positive way with other groups. As one student stated "Even though I did my project alone, I exchanged information and ideas with several other students". This situation effects more closely the real world where teamwork, and a contribution to several projects concurrently, is the norm.

Students gave two assessable seminar presentations. The initial presentation allowed them to explain their topic to other students and to give some initial indication of what they were going to investigate. The feedback from the first seminar was given to all groups. This information was also posted on the Web Page and was altered as necessary through the semester.

The final seminar was a presentation of the results of their investigation. This seminar of 15-30 minutes (depending on group size) allowed them the opportunity to give a "professional" presentation of their product. All students filled out an evaluation/feedback form for both seminars. The students were themselves assessed on both seminar evaluations and



feedback they gave to other groups. It was emphasised that the feedback forms would NOT be used to assess the group being evaluated by the student. It would only be part of the assessment of the student making the evaluation. This process ensured a very conscientious, serious and detailed feedback form being filled out by each student for each group project. It thus generated considerable feedback on their project for the groups when it was given to them (minus the names of the evaluators). Students allocated the assessment weightings for the project as follows:

Assessment	Agriculture students	Horticulture and Aquaculture students
Topic presentation on web page	7.5	7.5
Initial topic seminar	5.0	5.0
Interaction with other groups (Bulletin Board, Feedback/evaluation forms)	10.0	7.5
Group participation	2.5	5.0
Final topic seminar	10.0	10.0
Hard copy of project	15.0	15.0
Project - total marks	50.0	50.0

*Table 1: Group assessment structure*

### **Questionnaire Results**

Students were given a questionnaire at the commencement of the unit, and at its conclusion. Some results of the questionnaire were as follows:

#### **Positive comments**

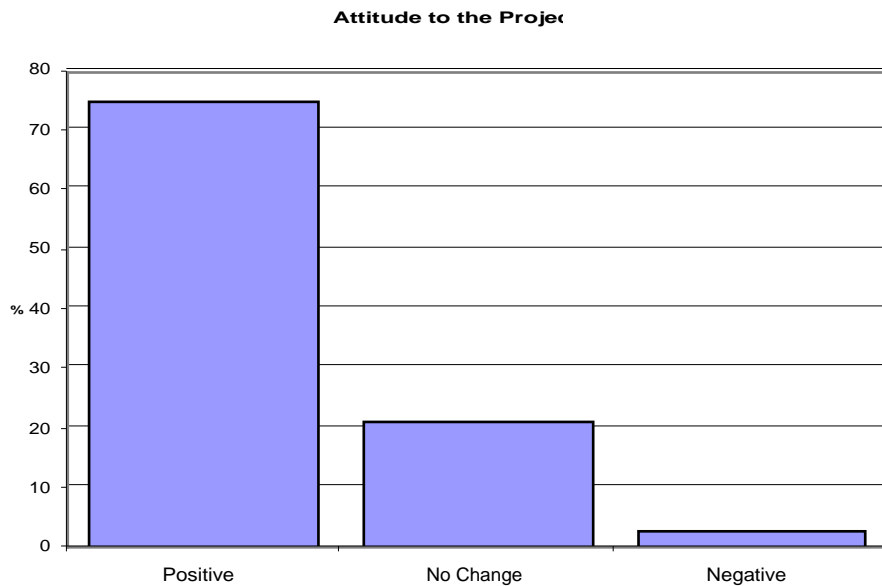
- Developed teamwork and motivation.
- Once you work it all out, it can be very intellectually stimulating.
- It is good as it makes the student responsible for their own learning.
- A group results in much higher productivity and a wide range of ideas.
- Good to talk to industry professionals.
- I am motivated to do the work and in the future this life of learning will be important to me.
- No one can force you to learn but if you can learn with enthusiasm on a subject you like, you will go well.

- Helps you to work with people and get organised with time management.
- You have to lift your game and not let the other members of the group down.
- Improves your research skills and also your presentation skills.
- My research allowed me to look in depth about the topic.
- It enabled me to research a topic or enhance written and presentation skills.
- I've enjoyed this unit and the opportunity to research and put together a report which is relevant to my goals,
- I enjoyed looking at a business relevant to the real world.
- I find it more challenging than the normal boring routine.
- This is basically how people operate in the real world.
- It teaches you to get along with others to work for a common goal. It is more like the workplace.
- I found it much more beneficial than I thought I would. I had to learn it.
- I learnt to work in a group and develop organisation and other skills.
- I enjoyed seeing different peoples' perspectives.

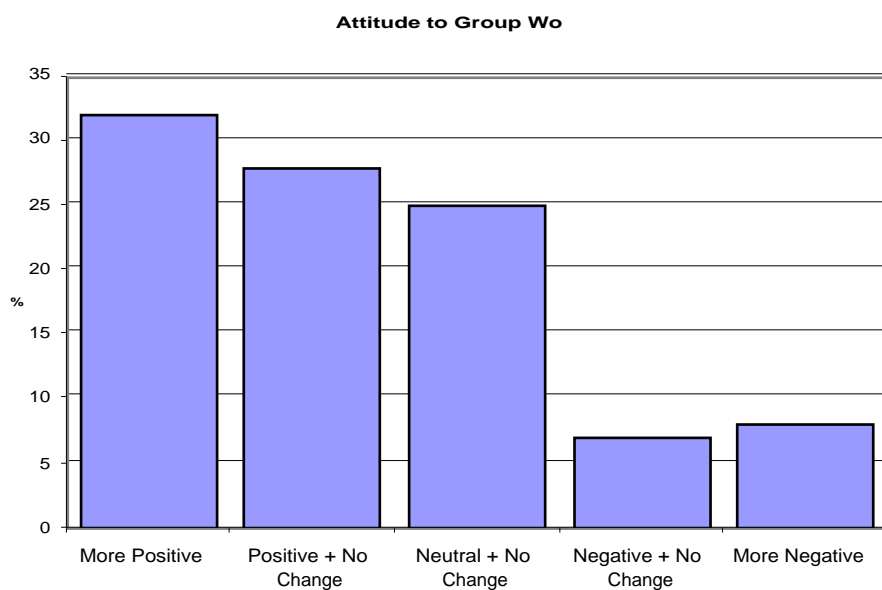
#### **Negative comments**

- There is no motivation to do it. You have to push yourself and if you don't get taught it, there is no compulsory work to do. It always leads to last minute work.
- I don't like working with other people in assignments, as group members have different ideas about how much should be put into an assignment, and some don't work. In a workplace, however, I can cope and enjoy it.
- Had a problem with a group member.
- Requires a large amount of time organising others.
- Hard to co-ordinate information and get together.
- I like to work on my own and not rely on other people.
- Workload was not shared.
- It is hard to get a group of people to function together.
- I still find it difficult to work with a group. Different attitudes and dominant males make work harder.
- It is easier to get things done on your own. There are no arguments or uneven workloads.

#### **Outcomes**



Student attitude to the structure of the unit was in general quite enthusiastic, with 75% having a positive response to the project and only 3% having a negative response.



Student attitude to group work also moved in a favourable direction, with 32% having a more positive attitude to group work, while only 8% had a more negative attitude at the end of the unit.

### **Conclusions**

As an overall statement, students had a positive attitude to the project as a learning experience, had a positive reaction to the group work involved, and succeeded in taking the responsibility for learning, into their own hands. However, students with more motivation and a more independent attitude to study and who had a particular interest that could be used as a project topic, especially if it was relevant to their past interests (eg, family farm), or their current or future ambitions, were much more willing to, and successful in, directing their own learning. A number of these students became very involved with their topic and showed an enthusiasm and commitment that would have been very hard to duplicate in a more teacher centred approach.

A small number of students could not accept the responsibility for directing their own learning and had problems with the independence resulting from this student centred approach. Students with little motivation, or a history of teacher orientated learning, with little or no experience with directing their own learning, believed that taking charge of and being responsible for their learning was not their role.

Another set of students had problems with using WebCT and computers in general. This again points to a need for some mechanism in first year for ensuring that all students have adequate computer skills. Despite a good deal of preparation and grounding in working in groups etc, a number of students had problems ranging from minor to serious (group break up). Almost all of the negative comments put forward by students related to problems of working in groups and problems with group members, including group relationships, group organisation, and the ever present "free rider" problem. Almost universally the students stated in the final questionnaire that the group was the problem, not the project.

### **General Conclusions From These Units**

WebCT was used in these units selectively. The technology was used only if it was contributing to the more effective delivery of the unit, and in producing a better student at the end of the unit. The basic economics unit

was a very structured "force feeding" situation that still resulted in a more active student who took in the responsibility for, and control of, learning.

The subsequent Marketing unit demanded a more self directed, self-motivated, independent approach to learning by the students. These students will have to go out to a workplace where they are expected to be self-directed, organised and professional. A process of moving students used to a teacher centred learning environment involving "active" teachers spoon feeding (or force feeding) passive students full of knowledge, to a self directed, motivated professional student, is not only necessary for the student, but a responsibility for both the lecturer and the individual student. The question now becomes not one of should we make the move, but of when and how.

Requiring a first year student in first semester to be totally self-directed is unreasonable and unworkable. A final year student asked to do the same, has "missed the boat". A progressive movement of responsibility for learning along a continuum from the lecturer to the student from the first year to the final year is more rational.

If a student is to progress from a teacher centred passive recipient of knowledge to a self directed professional responsible for their own learning, they have to be motivated to change. Food, fun, enjoyment, meeting other people and other ideas, having support and help, getting intellectual stimulation, being able to "do your own thing", or doing something you are deeply interested in, are all reasonable motivation to get a student moving towards taking charge of their own learning.

Students in these units who were motivated to take control of the learning process, learnt far more than the economic and marketing principles that presented to them in these units. They have taken a large step to being a confident, independent thinker, who can take a question, or a problem, and work their way through to the answer, or the solution. They have become better able to work constructively with other people, to organise themselves and their time, to reach a common goal.

People with these attributes not only will better handle the rest of their university learning, but will greatly enhance their employment prospects in the future. But of far greater importance is the realisation that they can do it, raising their self-esteem and confidence in themselves as a lifelong learner.

Isn't that what a university is really all about?

## References

- Bornwell, C. C. and Elison, J. A. (1991). *Active Learning.. Creating excitement in the classroom*. George Washington University, Washington DC.
- Ference, P.R.& Vockell, E.L. 1994. "Adult learning characteristics and effective software instruction " Educational Technology, vol 34, no.4, pp. 25-31.
- Hiemstra, R. (1994). Helping Learners to take responsibility for self-directing activities. *New Directions for Adult and Continuing Education*, 64, p81-87.
- Hogan, C. (1996). Getting students to do their reading, think about it and share their ideas and responses. In J. Abbott and L. Willcoxson (Eds). *Teaching and Learning Within and Across Disciplines. Proceedings of the 5th Annual Teaching Learning Forum: Murdoch University*.
- Macbeth, J. and MacCallum, J. (1996). *Collaborative learning.. Working together in small groups*. Murdoch University, Perth. (Videocassette).  
[http://cleo.murdoch.edu.au/tlc/videos/learning/video\\_collab\\_learn.html](http://cleo.murdoch.edu.au/tlc/videos/learning/video_collab_learn.html)
- Mathews, A. and Barrington, D. (1998). How can we encourage independent learning and interaction in the learning of science using small class situations? In Black, B. and Stanley, N. (Eds), *Teaching and Learning in Changing Times*, 189-193. Proceedings of the 7th Annual Teaching Learning Forum, The University of Western Australia, February 1998. Perth: UWA.  
<http://cleo.murdoch.edu.au/asu/pubs/tlf/tlf98/mathews-a.html>
- Meyers, C and Jones, TB (1993). *Promoting active learning: Strategies for the college classroom*. Jossey-Bass Publishers: San Francisco.
- Waldrop, P.B, Justen, J.E & Adams, T.M. 1986. "A comparison of three types of feedback in a computer-assisted instruction task" Educational Technology, vol 26, no. 11, pp. 43-5.

Copyright © 2000 Peter Crawford and Rod Kevill

The author(s) assign to ASCILITE and educational non-profit institutions a non-exclusive licence to use this document for personal use and in courses of instruction provided that the article is used in full and this copyright statement is reproduced. The author(s) also grant a non-exclusive licence to ASCILITE to publish this document in full on the World Wide Web (prime sites and mirrors) and in printed form within the ASCILITE 2000 conference proceedings. Any other usage is prohibited without the express permission of the author(s).

