Developing an On-line Course

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The UNITEC Directorate appreciates the need to create quality on-line courses. In February 1998 the Directorate approved the development of on-line courses. During 1997 a Faculty of Business working party had formatted a method of selecting which courses could be developed during 1998. One of the courses selected was Bachelor of Business Studies 04.410 Information Systems Principles.

This discussion paper identifies how the selection of courses was made by the working party. The paper then traces the development steps in producing a course that can be accessed by students from the UNITEC site and from outside UNITEC. The paper examines how the structure of the course was altered to incorporate on-line delivery, issues of technical support for staff and students and administrative matters that had to be considered.

This paper will offer advice to lecturers who are contemplating the leap to on-line education.

Introduction

The objective of this paper is to describe the rational behind and the development of a web-based flexible learning package.

A web-based course is one of many methods of flexible delivery. The first part of this paper reviews appropriate existing literature on flexible and on-line learning. The investigation into different methods of flexible learning and the planning carried out by the Department of Accountancy Law and Finance is described in the second section of this paper. The third section describes how a prototype web-based flexible learning course is currently being developed at UNITEC. The concluding section describes how the course being developed will benefit students and offers advice to other lecturers contemplating offering their courses for on-line delivery.

Literature Review

UNITEC’s vision for “a flexible learning environment characterised by innovation in teaching and the use of education technology” has focused the attention of many UNITEC staff on “what is flexible learning?”.
Flexible learning is not necessarily distance education or a move towards completely I.T. based learning. Instead flexible learning can be expressed as an opportunity for educators to think more flexibly about the design and delivery of their course. (Scott, 1997).

A study undertaken by Latona (1997) extends Scott’s interpretation by defining flexible learning as an educational outcome which frees students and academic staff from the constraints of time, place and fixed entry and exit points.

Tiffin and Rajasingham (1995) describe a traditional classroom as “broadband, fully meshed, synchronous learning offering fully interactive communication that can be multimedia and address all sensory channels”.

If students are already being exposed to the advantages described above why are initiatives being developed through all education levels towards a more flexible mode of delivery utilising on-line resources?

Depending on whether the respondent is a student, an academic staff member or an administrator the answer to this question will differ.

For the student it could be about having the choice of using the “transport network or the telephone network”. Tiffin and Rajasingham (1995).

The demands of students due to factors such as prior knowledge or language difficulties can be overcome through the provision of quality information technology based flexible learning courses (Freeman 1997).

For the lecturer the objectives could be a desire to move from being “the sage on the stage to the guide on the side” (March, 1998).

Expanding on the role of the lecturer, the APEID report (1986) suggests that in an on-line course, students will derive most of their learning materials from education technology, therefore the lecturer becomes a learning facilitator who can offer guidance and advice to students.

For the administrator, flexible learning can help to overcome problems of space, storage, time and teacher:student ratios.

The delivery of courses using on-line mechanisms can include a range of options. Barron (1998) identified these options as e-mail correspondence instruction, web-enhanced instruction, web-managed instruction and web-delivered instruction.

E-mail correspondence instruction is the delivering of course material using e-mail. E-mail is simply substituting “snail-mail” and the course is delivered in the same manner as correspondence courses have been offered for many years.

The prime purpose of web-enhanced instruction is for the lecturer to provide students with links to Internet sites relevant to the learning outcomes.
Web-managed instruction uses tools such as WebCT and TopClass. These packages assist in providing students with course information and course materials. Students also get access to e-mail, discussion groups and chat rooms.

Web-delivered instruction, or web-based training, is a method by which the entire course is delivered using a web browser through the Internet.

The objective of this paper is to discuss how web-based instruction is being developed for New Zealand Diploma in Business 150 Computer Concepts and Bachelor of Business Studies 04.410 Information Systems Principles.

**Department of Accountancy Law and Finance Initiatives**

Within the Department of Accountancy Law and Finance at UNITEC there have been a number of flexible learning initiatives developed.

**New Zealand Diploma in Business Flexible Learning Streams**

The New Zealand Diploma in Business 150 Computer Concepts course has included a flexible delivery stream, conducted three semesters a year, since 1995. The students in the flexible learning stream follow the same national prescription and sit the same assessment items as on-campus students. Students are provided with a comprehensive study guide at the beginning of the semester and attend three two-day workshops during the semester. The New Zealand Diploma in Business 250 Applied Computing course is offered in a similar manner in the first semester of each year. One stream of the New Zealand Diploma in Business 140 Business Communication course is offered as a flexible learning stream each semester and in addition to the structure offered by the computing courses also makes extensive use of electronic mail and electronic discussion groups.

These courses are extremely popular with part-time students and students whose family or work circumstances make attending a regularly scheduled class difficult.

**FQE**

The tuition for the Institute of Chartered Accountants of New Zealand (ICANZ) Final Qualifying Exam (FQE) programme was developed using home study material together with periodic workshops held throughout New Zealand and an Internet based World Wide Web page containing questions and answers.

**Project F**

In 1997 a group of six lecturers formed the Project F (Flexible) project team to investigate alternative methods of delivering courses within the Department of Accountancy Law and Finance.

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The five areas investigated were the development and expansion of satellite locations, the mix of
large lectures with smaller tutorials, world wide web based courses on the Internet, use of CD
ROMs and strategic alliances with other providers.

From this study came the realisation that offering courses on the UNITEC Intranet or the Internet
would allow easier access to education for existing and potential students who may have
difficulty attending on-campus courses as well as providing an excellent resource for on-campus
students.

As a result of this study a proposal was submitted by the Faculty of Business to the UNITEC
Directorate requesting commitment towards the development of quality flexible learning courses.

Within the proposal a method was suggested by which courses could be selected and prioritised
for funding development. Some of the criteria recommended were that there be sufficient volume
of students to offer more than one stream, that the course offered be of degree level or of a level
leading to a degree, that the development be student focused and that the academic staff
responsible for the course be well motivated.

The Bachelor of Business Studies 04.410 Information Systems Principles and the New Zealand
Diploma in Business 150 Computer Concepts courses were bracketed as covering similar content
at an equivalent level and were suggested and subsequently approved as courses to be developed
for on-line learning.

Development of a Prototype for 04.410 and 150

Steps Followed
The development of a prototype is a combination of the skills and intensive efforts of three
people, the instructional designer, the web-programmer and the course lecturer.

Figure 1 shows the progressive stages in the development of an on-line course at UNITEC.
Following the approval by the Directorate for 150 and 04.410 to be developed, the course
outlines and prescriptions were reviewed with similarities and differences between the two
prescriptions noted. A discussion as to how the on-line material would be incorporated into the
existing course established that the on-line course would initially be used primarily by the 150
Flexible Learning stream but would also be made available to on-campus 150 and 04.410
students. This would give all students the opportunity to experience and evaluate an on-line
course whilst also offering all students a more flexible mode of learning.
The administration component of the course was developed by incorporating existing Course Outline/Green Card material with an on-line document detailing procedures, netiquette and general information for flexible learning students. In addition to this, students are provided with an on-line study guide which indicates the resource references and activities for each part of the course. The students will update this study guide as they progress through the course giving the students a record of what they have done. This information will also be made available to the lecturer in order for students’ progress to be monitored.

Within each course there are two distinct components, the practical application of business software and the theoretical aspects of using computers and information technology within a business. As the learning outcomes for each course are already in an acceptable format the next stage was to consider the manner in which the two distinct parts of each course would be delivered.

The course prescription for both courses specifies that the student should be able to “use appropriate generalised applications packages in a microcomputer operating environment to solve a variety of business problems”.

A range of existing Web-based and CD ROM based courses were evaluated with the idea of making them available to 150 and 04.410 students if possible. The main concern with the courses evaluated was that they were very instructor-led. A concept was demonstrated and students instructed as to exactly what step to take next. Another concern was the additional cost to students and it was felt that flexible learning students should not have to pay for additional resources.

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As the practical workbooks currently being used offered students more than the Web-based and CD ROM based courses that were evaluated, a decision was made to continue using the workbook. The instructional designer and the lecturer felt, however, that current and future students will be coming to UNITEC with varying levels of competency in computer application skills therefore students should be directed towards specific areas in the workbook. To this end, a series of multi-choice pre-tests were developed. For each module, or Lab in the workbook, the skills that are to be developed are described and students do the multichoice tests on-line. The student receives immediate feedback that indicates the correct and incorrect answers, tells the student the correct answer and also provides the student with a direction as to which part of the lab he/she should concentrate on.

All students, regardless of their ability level, are encouraged to attempt predetermined practical exercises with suggested solutions being provided for self-evaluation.

The theory component of the course offers greater opportunity for on-line interactivity, communication between class members and communication with the lecturing team.

A map of the course established which learning outcomes would be covered in a linear manner and which could be done in a non-linear order.

The instructional designer and the lecturer discussed each learning outcome in detail. This was necessary to establish the text references that were used, the PowerPoint slides that were shown, the class exercises that were done and what the lecturer would typically say in class. Depending on the learning outcome to be achieved a variety of different on-line methods of delivery were used.

The decision was made that the on-line course would be used in conjunction with the students' textbooks and therefore there was no point in reproducing a large amount of text for students to simply read. Students were, however, provided with a resource reference highlighting which parts of the texts they should be familiar with before doing each on-line session.

With the permission of the publisher, selective use was made of the PowerPoint slides provided with the student text book. It was often necessary to accompany the PowerPoint slides with explanatory text and examples. Extensive use was made of graphics incorporating “roll-overs” to illustrate applicable aspects of many learning outcomes.

In addition to these methods of conveying the content of the course, students were provided with a large number of interactive activities. These included investigating and reporting on web sites relevant to the topic being studied, completing on-line exercises and being provided with immediate feedback and group activities based on case studies.

**Progress To Date**

The practical component of the course was straightforward to develop. The design of this is complete and awaiting implementation by the web-programmer.

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1 A “roll-over” is explanatory text that appears when the cursor is positioned over part of an object.

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The design of the theory modules up to Week 9 (15 week semester) was completed in the 10th week of the project. The implementation of the first module has been completed by the web-programmer apart from the graphical design aspects that will be incorporated when a graphical designer is employed by UNITEC. (http://hobbes.unitecnology.ac.nz/410/)

Current New Zealand Diploma in Business Computer Concepts students have evaluated the completed first theory module. The purpose of this evaluation was to provide feedback on the way students use the module and to use the evaluation as a tool for future development. (Sherry 1998).

Implementation Plan

It is anticipated that the course will be available for implementation at the beginning of Semester 1 1999. In the first semester the on-line course will be focused primarily at the 150 Computer Concepts Flexible Learning stream but it will also be available as an additional resource to all 150 and 04.410 Information Systems Principles students.

It will be offered as a password protected site on the Internet. This means that students can access the course from home, from UNITEC drop-in centres or from UNITEC computer labs.

The 150 Computer Concepts Flexible Learning stream will be introduced to the course at an on-campus workshop in February.

For students who are unfamiliar with using the Internet an initial on-line tutorial developed at UNITEC for the English On-Line course, http://english.unitecnology.ac.nz, will be made available to students.

Students will be provided with guidelines as to how they should proceed through the course and who to contact for assistance. There will be regularly scheduled workshops throughout the semester to monitor students’ progress and to provide students with on-campus tuition.

Conclusion

Benefits to Students

Throughout the development process the lecturer and the instructional designer were constantly evaluating how what was being developed could benefit students.

Students can be given access to a wealth of learning resources through an on-line course. These include on-line discussions with other class members, on-line publications and up-to-date material from industry and commerce.

Students need to be directed as to how to find relevant information and how to critically evaluate what is available. They need to be able to determine from all the information available what is relevant, what is reliable and what is credible.

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An on-line flexible learning course offers students the equivalent of one-to-one training. Students can explore areas of interest on their own and in privacy can go over areas of the course that they don’t understand as often as necessary. They can work at their own pace at whatever time of the day (or night) they prefer.

Added to this, an on-line course is consistent. The same material is delivered to all students in exactly the same way. A web-site doesn’t have a “bad day” or tire after delivering course material for six hours!

Students will be advised immediately of any revisions to the course and lecturers can post general notices to all students.

Students from a non-English speaking background or from a culture other than Pakeha New Zealand are sometimes hesitant about speaking in class. Students for whom English is not their first language may need to interpret a question into their own language, formulate an answer and then translate that answer back into English before attempting to communicate with the lecturer or with other class members. An on-line course offers these students the opportunity to spend as long as is required to formulate an idea or answer before submitting it for evaluation.

The prototype developed for 150 and 04.410 incorporates many areas where students are required to submit ideas for discussion. This will allow and encourage all students to benefit from reading a variety of answers to questions. It will also provide Flexible Learning students with the feeling of being part of a community of on-line students.

The courses use self-testing with immediate feedback extensively. Students do not have the passive role of reading or listening to the information being delivered. They will be expected to participate. The expectation is that this will lead to a faster acquisition of knowledge.

Suggestions to Lecturers

Developing an on-line course is exciting and challenging. These suggestions are offered to lecturers who are thinking of offering a course on-line.

There are many on-line courses available on the Internet. The English On-Line course, developed by UNITEC is an excellent example.

Richard Elliot (rle@admin.unitec.ac.nz) reviews educational web sites from throughout the world. He regularly informs interested staff on the results of his “surfing the net”.

Educational listservs provide the opportunity for educators to ask questions, discuss issues and inform like-minded individuals about on-line education. (E-mail listproc@hawaii.edu).

If you are contemplating being involved in the development of an on-line course, speak with the staff in Learning Technologies at UNITEC. Find out who is already involved in the development process and get their personal opinions and knowledge of what is required.

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The development and implementation of a successful on-line course is very much a team effort. The professional skills of the instructional designer and the technical skills of the web-programmer and graphical designer are paramount. The academic will concentrate on the areas of expertise that have traditionally been assigned to a lecturer: course structure, course content, student interaction and feedback with the majority of the course preparation work being completed before the course is offered to students.

It is not necessarily what is being done that is different, it is just the way in which quality education is being delivered to students.
REFERENCES


Scott, G. (1997). Flexible Learning, Quality & the Role of Technology in Higher Education. 52nd ALTA Conference, University of Technology, Sydney.
