PRRES Conference. Adelaide. 21st to 24th January, 2001.
E-Learning, the future for Property Students using multi-modal methods for
Distance disadvantaged (correspondence) and face to face students.

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Paper Title: E-learning, the future for property students using multi-modal methods for distance-disadvantaged (correspondence) and face to face students.

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Abstract: Recently there has been a perceived swing to computer or on-line learning. (Now referred to as 'e-learning'). This paper will investigate the changing methods of delivering subjects to property students.
The University of Western Sydney, Bachelor of Commerce (Property Economics) is the only undergraduate degree offered by correspondence in Australia and as such has taken the bold step of offering subjects both by the traditional printed note format as well as the new on-line (e-learning) process using the WebCT platform. To achieve this the WISE (Web Interactive Student Environment) has produced a web site that enables all correspondence students to access quality interactive material.

To support this environment and produce quality material the important role of the centre for higher education (CHED) and the flexible learning unit (FLU) will be reviewed.

The final aspect of this paper will discuss the cost benefit (if any) of using on-line tutorials rather than creating and maintaining more face to face tutorial presentations. This may appear to give the lecturer more time for research, but preliminary studies may indicate the reverse.

1.0   Introduction.

Education is changing and the cultural shift is towards using online systems. Online learning, often referred to as e-learning, is being seen by many, (especially Governments and upper management) as the panacea to the ever rising cost.

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On the surface this seems quite logical, as we are often told by the media and many of our politicians, that nearly everyone has a computer and has internet access. But as this shift occurs the issues and problems that arise are of a new nature. The problems and concerns that arise include the wide spread and adoption and use of a new technology and a new teaching medium not fully understood.

External forces influence these concerns and these forces cannot be controlled by the universities or the academics. One of the main driving forces is the push for universities to do more with less. (Ryan 1998). The Government is forcing the tertiary education sector in Australia is forcing most institutions to function to same, if not greater degree, with reduced resources. The amount of public funding is decreasing and competitiveness between institutions for student numbers has increased. Many institutions (especially at upper management level) have seen online education as a cost effective way to reach large numbers of students. This has helped push forward the move to online education. (Flew 1998, Thomas 1998, West 1998).

What most people overlook is the impact on resources that 'going on line' has. Academics are under pressure to change their staff/student ratios, again seen by management as a 'quick fix' to funding problems, but the consequences of providing high quality outputs with smaller inputs is counter-productive.

Institutions have reacted to this pressure to go online in two ways.
Firstly there is the coordinated interventionist manifest of policies and regulations designed to limit academic activity and channel it into predetermined paths to prevent duplication, waste or costly experimentation. (Fox 1999).
The other method is the 'ad-hoc', hands off approach in which the institution provides the basics for the academic staff to work in the new environment but relies on their enthusiasm (and lots of unpaid overtime) to develop pockets of innovation to maximum effect. (Bacisch & Ash 1999, Taylor 1996).

The online development of the Bachelor of Commerce (Property Economics) at the University of Western Sydney is being undertaken with guidance of the Flexible Learning Unit (FLU), using the Web Interactive Study Environment (WISE). The aim of WISE is to develop online learning packages using a method that is compromise of the two previously mentioned. That is WISE is a compromise between the two extremes. The aim of WISE is to create an environment for academic staff to develop online teaching processes and materials that will enrich the learning experience of their students. Underlying this aim is the view that the focus for academic staff should not be how to build a web based tool for teaching online, but how best can they use web-based tools for teaching online and thereby develop their own pedagogical innovations. The systems must also be transparent to students, so that the new environment doesn't distract from their learning. (Rankine et al 2000).

Whether or not cost saving to the academic institutions actually occurs is open to debate. What does become apparent is that the time needed by the academic for the preparation of the material and the running of the subject is nearly doubled.

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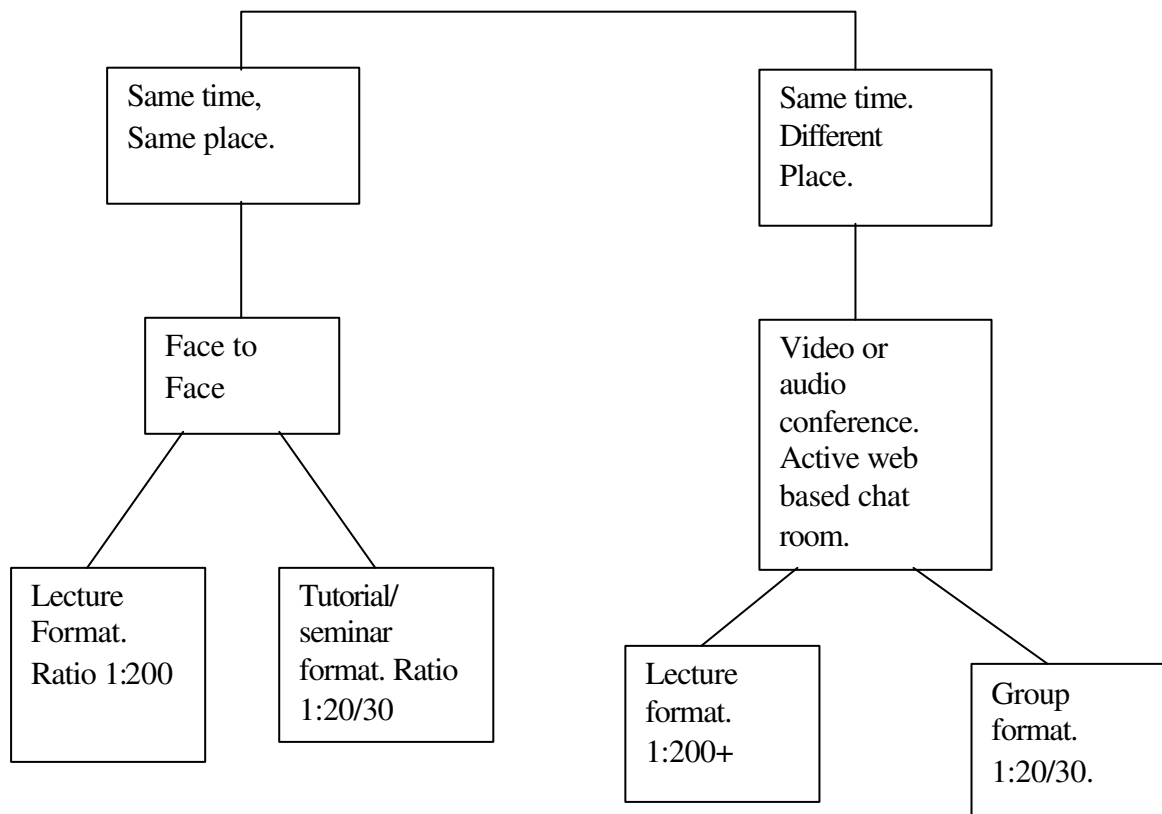
2.0   Presentation Formats

The following diagram represents the two accepted interaction models, being synchronous and asynchronous. Most lecturers and presenters are familiar with the same tine/same place model and this is still viewed by many as the most effective method of communicating material. This does mean however that specific lecture theatres and rooms are required at specific times. These resources are finite and as many institutions will testify to, are not fully used in a whole calendar year.
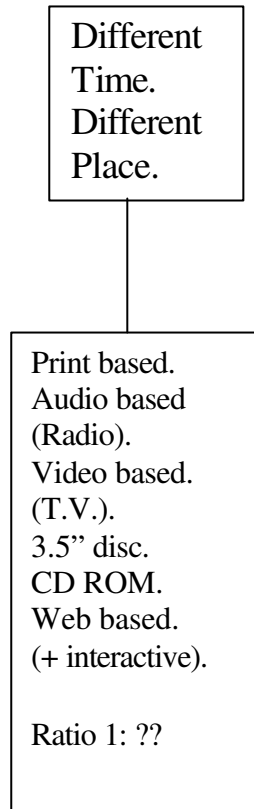
The same time/different place model has been used to some extent but still requires defined parameters for timing and locations for the recipients of the lecture. (Conference). It is possible to have an active web based chat room, but the lecturer together with the students would have to be on line at the same time to derive the full benefit. Students can access the chat room and chat amongst themselves, but the lecturer has to monitor the progress in case they get on the wrong path.

The standard asynchronous method uses the printed note concept, either in the form of textbooks, formally prepared printed notes and study guides. This model has evolved to include audio and videotapes, use of television and radio broadcasts, computer discs, CD-ROM and finally online computer learning.

SYNCHRONOUS

```
                    ┌──────────────────────────────┐
          ┌─────────────────────┐        ┌─────────────────────┐
          │ Same time,          │        │ Same time.          │
          │ Same place.         │        │ Different           │
          │                     │        │ Place.              │
          └──────────┬──────────┘        └──────────┬──────────┘
                     │                              │
          ┌──────────┴──────────┐        ┌──────────┴──────────┐
          │ Face to             │        │ Video or            │
          │ Face                │        │ audio               │
          │                     │        │ conference.         │
          └────┬───────────┬────┘        │ Active web          │
               │           │             │ based chat          │
               │           │             │ room.               │
                                         └────┬───────────┬────┘
     ┌──────────────┐  ┌──────────────┐       │           │
     │ Lecture      │  │ Tutorial/    │  ┌──────────────┐ ┌──────────────┐
     │ Format.      │  │ seminar      │  │ Lecture      │ │ Group        │
     │ Ratio 1:200  │  │ format. Ratio│  │ format.      │ │ format.      │
     │              │  │ 1:20/30      │  │ 1:200+       │ │ 1:20/30.     │
     └──────────────┘  └──────────────┘  └──────────────┘ └──────────────┘
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ASYNCHRONOUS

Different
Time.
Different
Place.

Print based.
Audio based
(Radio).
Video based.
(T.V.).
3.5" disc.
CD ROM.
Web based.
(+ interactive).

Ratio 1: ??

3.0 WISE Models and Quality Assurance.

The main difference between the interventionist and *ad hoc* approaches is that of quality assurance.

The WISE models attempt to avoid the pitfalls of both approaches by drawing on models from the realms of publishing and software development.

Using the skills of the academic, who knows the subject mater and how different face to face presentations work, specialist educational designers to assist in developing content, and technical assistance to assist in the realisation of teaching creativity (examples, desktop video conferencing, streaming video clips) a quality innovative product can be produced.

In the area of software development, critical to the information technology industry, a product is developed with input from specialists and becomes a working prototype. Before the product is released, it must go through a rigorous testing process to detect errors, trial usability and robustness of features. This is the quality assurance process incorporated into the WISE model.

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WISE set up four distinct precincts (ports) dedicated to WebCT software.

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At the University of Western Sydney in the Bachelor of Commerce (Property Economics), external version, with subjects being offered by written (hard copy) notes, a method of transitional packages is being developed.

These transitional packages (referred to TYPE B), make full use of existing course content/legacy material.
This material has been prepared by the lecturer and then adapted for hard copy presentation by the Flexible Learning Unit. (FLU). FLU editors have set up a standard format for presentation of material, using icons and refining the amount of actual printed matter being sent to students. Naturally this material is all held on disc and together with power point presentations and anything else academic staff have been using to teach with, is fairly easily adapted to the WebCt format.

This type of package is unlikely to fully replace face to face lectures, but is likely to replace many small tutorial groups. This is a support to traditional teaching.
It allows the student to access work when convenient, work at their own pace and contact the lecturer by email with any problems.

The fully developed package (TYPE A), is a stand alone presentation. These are packages which have been created from ground up, by academic staff working alongside WISE staff over several months (Usually 4-5 months), to construct online learning packages which incorporate innovative teaching and learning strategies.

Both packages include links to to resources such as libraries, user guides for studying on line, WebCT user guides, study skills information Frequently Asked Questions (FAQ's), and links to industry and professional bodies.

Quality assurance is related to testing to 'de-bug' the package. Many academics do not possess the skills to carry this out and the use of support staff is crucial. Many academics fear that the material will disappear into a black box and come out bearing no resemblance to the original product they had written of envisaged.

Academic staff are encouraged to view the development of the material as akin to publishing and to have care in the steps of development, testing and teaching processes. This means that more time is required by the academic staff in the planning and development stages of the on-line subject.

This is becoming (in many cases has become) a problem area for academic staff, for management seem to think that if a subject is delivered face to face, no extra time or effort is needed to develop it for on-line presentation. Preliminary investigations have shown that for a subject to be prepared for on-line delivery, the equivalent amount of time is required as face to face delivery. That is if the subject is a one semester subject then one full semester is required to prepare and go on-line.

The role of the academic does not stop with just the initial development of the material, but is an on going process. The material needs constant up-dating and adjustment. Research has shown that no on-line subject is perfect, just as face to face lectures are not perfect. Constant testing of such items as,

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- Internal links, usually to glossary and definitions etc.
- External links, usually to library etc. (beware of copyright breaches).
- Navigation paths, text can be easily read, paths are logical and clear.
- Content pages, images and tables visible, structure logical.
- Downloads, times for multi-media and dense images are acceptable.
- Student resources, workshop information, help-desk details etc are user friendly.

4.0   Support Mechanisms.

Both students and the academic need support mechanisms in place to enable the smooth operation of on-line learning packages.

The WISE unit at UWS have set up the following systems, which all take time (& money), to operate.

Weekly workgroups: two hour hands-on sessions where academic staff can have educational assistance, technical support or they can use the time to develop their on-line subject in a collaborative environment. These meeting provide a regular opportunity for solving problems. Note, there are always problems.

Help-desk support: central point of contact by email, phone and fax.

Training for first year or new students: At the start of the teaching period a series of introductory sessions are given, usually by the lecturer, (who is hopefully by now very familiar with his on-line subject and how it operates), on such things a slogging in, using WebCT and where to get help.

Training for Academic staff: Academic staff can access the material prepared by them, as a student. Naturally they have access as a designer or writer of the material. The WebCt platform allows the academic to easily change certain aspects of the material. (This is usually done on a trial basis in the right precinct before finally being carried out in the live precinct).

5.0   Cost Benefits.

It appears that one of the main aims of the tertiary education management system is, to get academics to do more with less. Many upper management see e-learning as the answer. But is it? The University of Illinois study states, Uni. Of Illinois 1999.

"Because high quality on-line teaching is time and labor intensive, it is not likely to be the income source envisioned by some administrators. Teaching the same number of students on-line at the same level of quality as in the classroom required more time and money".

From personal experience and preliminary research the opposite seems to be the answer. There are three main factors that come into play:

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1. Time.
2. Equipment.
3. Staff.

Time: As already stated, to prepare a subject to go on-line really requires one full semester of concentrated effort by the academic. If the academic is delivering the subject face to face, then only one subject could be taught and developed that semester.
Example: 2 hours of lectures to 100 students, plus 5 x 2 hours of tutorials (say 5 groups of approx. 20 students) = 7 hours per week..
Allocation of time to prepare on-line material is **at least,** double that of face to face delivery, allow 14 hours per week. This work is more than equivalent to face to face teaching. Again, personal experience has shown this to be the minimum.
These figures do allow for the on-going work needed to keep the subject running on-line.
An academic will find that the actual work involved in keeping the subject on-line and students happy equates to more than one and one half the time needed for face to face students. That is a six hour face to face lecturer load would be equal to a 9 hour on-line load. Management will deny this, (as you expect), but the academic is now dealing with x number of students on an individual basis, usually by email, and the time involved increases dramatically.

Equipment: Although upper management sees this as a once only cost, this is a fallacy. Equipment needs to updated at least every three years. Even purchasing a large enough system is a problem. The old advice of, think of number, then double it applies to setting up the servers for an on-line subject.

Staff: As well as academic staff, support and technical staff are also required. It is admitted that they can be used for a number of courses/subjects, but to accurately reflect the costs of an on-line a substantial allowance has to be made for their initial input and ongoing support.

6.0   Conclusions.

As with many computing concepts people think that having e-learning will save time, money and paper. Many also feel that with e-learning you can have an infinite number of students undertake the course making it an income generator.

This preliminary study shows that e-learning may in-fact escalate costs. The time involved for the academic to prepare the subject to go on-line and then maintain it is greater than that of face to face delivery. Time is money and that extra time required definitely reduces the availability for face to face lectures in the overall workload.

The amount of data, in the form of status reports that drawn from having a subject on-line also increases. Student log-on times can be evaluated, amount of access to chat rooms, emails received etc.

E-learning will slowly evolve, Whether it evolves the way management think is another question.

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