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Evaluation of the Effectiveness of a Tertiary Course Delivered via the World Wide Web

The Case of the 86.761 Course – “Learning with Computers”

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1999

A thesis presented in partial fulfilment of the requirements for the degree of Master in Education at Massey University.
Evaluation of the Effectiveness of a Tertiary Course delivery via the World Wide Web

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ABSTRACT

Delivering courses via the World Wide Web is a relatively new phenomenon. Evidence on how it can promote learning is still under investigation. The main objective of this thesis is to evaluate the effectiveness of a tertiary course, 86.761 "Learning with Computers", delivered via the web, and contribute to the formation of a body of knowledge on this subject.

The research is organised into three phases. Phase one involves the design of the web-based course and an interview with the Paper Co-ordinator which documents his perceptions of teaching via the web, the objectives, pedagogical strategies and web tools used to deliver the course content, and the design of the user interface. Phase two of the research describes the implementation of the web-based course. In the third phase, a questionnaire is used to gather data on the students' perceptions of the various aspects of the web-based course. It also involves another interview with the Paper Co-ordinator, which describes his perceptions of teaching via the web, after the implementation of the web-based course.

Analysis of data shows that there had been a positive evolution in the Paper Co-ordinator's perceptions of teaching via the web. Regarding the students' perceptions of learning via the web, results suggest that it was a positive and valuable experience, meaning a step in the right direction, yet with plenty of room for improvement. As for the objectives of the web-based course, some were clearly better achieved than others. The pedagogical strategies used to deliver the course content were accomplished with different levels of effectiveness. The results also reveal that the web tools used in the web-based course achieved various degrees of success. Finally, with respect to the user interface, findings show that the web-based course was simple,
easy to use and friendly. The aspects of consistency, access and navigation were considered acceptable, yet with plenty of room for improvement. However, the aspects of online help, advice and customisation were considered inadequate. In summary, this thesis was moderately successful in achieving its main objective. More research is needed on how to effectively use the web for teaching and learning.
Acknowledgements

This research was committed to evaluating the effectiveness of a tertiary course delivered via the World Wide Web. This evaluation would not have been possible without the co-operation and participation of the post-graduate students involved. The research was dependant upon their participation and I wish to express my appreciation for their time and for the rich information provided. In particular, I would like to thank the Paper Co-ordinator for his time and the invaluable information provided through the various interviews.

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Glossary

ARPRANet  A packet switched network developed in the 1960s.

Asynchronous Communication  A term that indicates that communication can take place without both parties being logged on at the same time.

Browser  A software used to read hypertext information and navigate through various web sites (e.g., Netscape Communicator, MS Internet Explorer).

Chat mode  Form of communication in which messages are exchanged in real time rather than stored for later reading.

Discussion Forum  Online discussion group in which users contribute comments to be read by all other users.

Electronic mail (Email)  Electronic transmission of messages sent across a network to an individual or a group.

File Transfer Protocol (FTP)  Standards allowing the transfer of files to and from a host computer.

Gopher  An early form of computerised information distribution system. Gopher is a menu-based system protocol, which allows a computer to maintain a database of information, which can be searched by other computers through the Gopher protocol.
“Lurker”  
A person who mainly reads or listens to a mailing list document or Usenet newsgroup, without actively participating.

Modem  
Computer peripheral device allowing information to be exchanged over a telephone line between computers.

Multimedia  
Communication format integrating several media (text, audio, visual and animations), most commonly implemented with a computer.

Network  
A communication system linking two or more computers.

Platform  
Refer to a specific computer or operating system (e.g. a Macintosh is a platform). Platform independent means that a piece of software should work on a computer no matter what its operating system or make.

Synchronous Communications  
Data communication in which transmissions are sent at a fixed time rate (e.g. two or more individuals communicating online at the same time to one another).

Telnet  
A basic function provided by the TCP/IP protocol on the Internet is Telnet. This allows an individual to interact with another computer is she or he were directly connected to the remote computer.

Transmission Control Protocol/Internet Protocol (TCP/IP)  
Standards that allow different computers to transfer data over the Internet.

Upload  
Transfer electronic data from a local to a remote computer.

User Interface  
Methods by which the user interacts with the contents of a computer application.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>WebCT (World Wide Web Course Tools)</td>
<td>An authoring software package used to design and deliver content via the web.</td>
</tr>
<tr>
<td>Wide Area Information Service (WAIS)</td>
<td>A form of database available on the Internet.</td>
</tr>
<tr>
<td>World Wide Web (WWW or web)</td>
<td>Information available in hypermedia through the Internet.</td>
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