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Delivering health education via the World Wide Web: an investigation of knowledge construction, attitude and behaviour change within collaborative learning environments

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**DELIVERING HEALTH EDUCATION VIA THE WORLD WIDE
WEB: AN INVESTIGATION OF KNOWLEDGE CONSTRUCTION,
ATTITUDE AND BEHAVIOUR CHANGE WITHIN
COLLABORATIVE LEARNING ENVIRONMENTS**

A thesis submitted in fulfilment of the
requirements for the award of the degree

DOCTOR OF PHILOSOPHY

from

THE UNIVERSITY OF WOLLONGONG

by

**LORI ANN LOCKYER
BA (HONS), MLIS**

**FACULTY OF EDUCATION
2000**

ACKNOWLEDGMENTS

To, my supervisor, Professor Barry Harper, for his exceptional guidance.

To Professor John Patterson for the numerous roles he has played in this experience.

To the many people who assisted with this project, particularly Matthew Perry for his programming genius, Yvonne Kerr for her health education and instrument development expertise, Associate Professor Ken Russell for his statistical advice, Sue Bennett for her qualitative analysis assistance, and Karl Mutimer for sharing his graphic design talent.

To my parents, Gloria and Albert Lockyer, for their love and support.

ABSTRACT

This study sought to investigate the efficacy of using Web-based learning environments in the delivery of health education at the undergraduate level.

This study was conducted in two phases. Phase 1 involved the reconceptualisation and development and formative evaluation of face-to-face and Web-based tutorial learning activities associated with an undergraduate health education subject. This phase of the study included a review of the theoretical and applied literature and practice related to the design of effective health education learning strategies in the undergraduate sphere. This review brought about the focus on a student-centred, collaborative strategy that could be conducted within both face-to-face and Web-based learning environments. This phase also involved the design and development of a prototype Web-based learning environment to support the learning activities for the subject. While face-to-face tutorials have been the traditional delivery format in the university setting, reflection on the procedures required to implement such collaborative learning activities within a face-to-face delivery mode was also included in this phase of the investigation. Phase 1 also included a multi-faceted formative evaluation of the learning activities and of the prototype Web-based learning environment to facilitate those activities. The results of the formative evaluation were utilised to revise the learning activities and learning environments.

Phase 2 of this investigation involved the design and implementation of two experiments that explored the strengths and weaknesses of each of the face-to-face and Web-based learning environments in facilitating collaborative health education learning activities within the health education subject.

Experiment 1 coincided with the first half of the academic session. Students enrolled in the subject were randomly assigned into two tutorial classes and further randomised into learning groups of four or five participants. Each tutorial class was randomly assigned to one of two learning environments (face-to-face or Web) for the first experiment. In the second experiment (i.e., the second half of the academic session), groups crossed over to engage in their tutorials within the alternate learning environment.

Both quantitative and qualitative data were collected during these experiments to respond to the research questions. Pre-tests and post-tests for knowledge, attitude and behaviour related to the health topics covered by the learning activities were administered to all students. To investigate the nature of the learning group interactions, the collaborative learning activities were recorded (via audio-tape and electronic Web logs). Additionally, the group output of each collaborative activity was collected to explore the quality of response from each learning group. Once participants had engaged in the learning activities, a representative of each learning group was chosen, at random, and asked to engage in an in-depth interview regarding their experience and perceptions of the face-to-face and Web learning environments. At the conclusion of both experiments, all participants were asked to complete a survey that included items related to their experience engaging in the face-to-face and Web-based learning activities and their perception of the effectiveness of the learning environments. Pre-test and post-test surveys which measured attitude toward using computers was also administered to all participants. These data were analysed and considered in light of the research questions and the literature.

The findings of the study suggest Web-based learning environments with embedded collaborative activities effectively foster health-related knowledge construction and attitude and behaviour change. Furthermore, variations in the nature of interaction among learning groups exists in different learning environments suggesting that Web-based learning environments might best facilitate health education learning activities that explore controversial or confronting issues. Learners perceive great value in aspects of face-to-face tutorials that are not easily transferred to the Web-based situation — particularly immediate interaction with the lecturer. Nevertheless, students perceive Web-based learning environments to be effective in facilitating their understanding of health education issues as much as or more than face-to-face situations.

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