

# USING GROUPWARE FOR INTERNATIONAL COLLABORATIVE LEARNING

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**Abstract** □ This paper reports the lessons learned from a two year collaborative learning trial between students at Auckland University of Technology (AUT) and Uppsala University. The trials took place using a combination of email and a custom developed Lotus Notes□ database. The first trial involved a case study in which students performed different roles in designing a software solution for an Auckland based nailcare distributor. The second trial built upon the knowledge base of the earlier trial, and required students to evaluate and rank the previous design proposals. A theoretical model developed from the group support systems literature guided some of the changes in the second trial. The software, the collaboration process and the evaluation methods evolved over the course of these trials. The challenges of creating global student communities within a short collaboration window in existing courses of study are discussed. Further extensions to this research are proposed and some general recommendations are made.

**Index Terms** □ Adaptive structuration theory, collaborative learning, facilitation, group support systems, virtual teams.

## INTRODUCTION

While the Internet has provided a global communications infrastructure, and widespread use of email has supported new modes of rapid and regular communication, email as a technology has several limitations. It is the authors' contention that in spirit email is essentially a private (one-to-one) communications medium, although email does have the potential to be used for selected group, and more public forms of communication. The trials reported here have attempted to explore the issues that arise in the use of *GroupWare*, a technology explicitly designed to support the work of groups. Also known as *Group Support Systems (GSS)*, [1] they have been defined as:

**"GSS: any system which supports a group interaction by becoming an integral part of that interaction"** [2]

These trials have been motivated by a desire to use Information Technology as a vehicle to teach about the technology itself, and further, to harness the "transformative power of IT" [3], to enable the pedagogy in turn to be transformed.

## DESCRIPTION OF THE TRIALS

### First Trial

The first trial has been reported in [4]. In the course of conducting a Tele-project between two different classes of students in each country, it blended problem-based learning drawn from a live business case, with role-play and international group collaboration. The common task required students to develop a design proposal and feasibility study for a computer game, to assist pharmacy assistants to acquire knowledge about a range of nail care products. The business students at AUT were studying a senior course in Human Computer Interaction (HCI) and the Uppsala University computer science students were studying an introductory course in IT. Since the class sizes differed across the two institutions, AUT students in teams of two were matched with two to three teams of four Uppsala students to make up each overall group. AUT students were intended to act the role of business analysts representing the client's interests, while the Uppsala students were to play the part of software developers.

The trial took place over a three-week period with an intervening two-week holiday break. In the course of the trial students used a collaborative database custom developed in Lotus Notes Domino□. Numerous usability issues with the system were encountered in the course of the exercise. The process of struggling with an unfamiliar product, a far from ideal user interface and a system that was made available for alpha trial at best, and evolving in the course of the trial, graphically demonstrated to the HCI students the importance of good interface design. The mixed groups and the open ended and generic nature of the application, caused considerable confusion. Once a naming standard for group entries was developed and partially adopted, some coherence evolved from this initial confusion.

Mixed levels of participation evolved, and varying degrees of electronic interaction took place between the Auckland and Swedish groups. By the end of the exercise the Swedish students had produced several design concepts, displaying considerable imagination and creativity. They had used the collaborative database features in very different ways, although several had preferred to use email alone,

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