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ABSTRACT

For the past three years, a bulletin board system (BBS) has provided messaging and computer conferencing facilities for the students and staff of the Graduate Diploma in Information and Communication Technology Education course at the University of Melbourne (Australia). In order to more accurately assess how these students coped with the use of a BBS, a 12-item questionnaire survey was administered to 66 students who were enrolled in the course. The aims of the survey were to determine the level of student involvement in the use of the BBS; identify students' principal concerns; and ascertain learner perceptions and satisfaction. In addition, it was intended to establish the need for appropriate resources to ensure more effective ntegration of technology, particularly in the use of electronic communications, in future course planning. The most frequent criticism of the program by the students was that not enough time was given for familiarization with the medium. Overall, there was a very positive response to the use of electronic communications or computer mediated delivery of courses, provided that a high level of support is available. (Author/AEF)

Factors Affecting Teachers and Trainers in the Use of a Bulletin Board System: A Report

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In order to more accurately assess how mature-age, part-time graduate diploma students in an information technology course coped with the use of a Bulletin Board System (BBS), a survey was conducted towards the end of 1995 of a group of sixty-six students who were enrolled in the course at the time. The aim of the survey was to ascertain the level of student involvement in the use of the BBS, identify students' principal concerns, ascertain learner perceptions and satisfaction as well as establish the need for appropriate resources to ensure more effective integration of technology particularly in the use of electronic communications in future course planning.

Research findings have shown that the use of computer conferencing can enhance and supplement teaching and learning and provide fertile ground for ongoing learning and professional growth (Harasim, 1990; Honey, 1995; O'Gersh, and Posamentier, (1993); Schrum, 1995; Spitzer and Wedding, 1995; Weir, 1992). A number of studies have suggested that the use of this technology will allow both teachers and learners to interact with each other beyond the confines of the classroom (Casey, 1994; Kazuo et al., 1995; Waggoner, 1992). Teachers need to be trained to understand the basic components of telecommunications including understanding of the use of the computer, the functions of a modem, telephone and communications software, develop skills in messaging and conferencing and to become active participants on electronic networks (O'Gersh, and Posamentier, 1993).

Many of the students enrolled in this course lead very hectic lives and time for study is often limited increasingly by other obligations. Their life circumstances often impose constraints on the ability to access services in the traditional manner. Since this graduate diploma has an information technology focus it was felt that students should be encouraged to use electronic means to communicate with lecturers and to perform other related activities. In this way students will be gaining first-hand experience of the medium.

Background

For the past three years, a bulletin board system (BBS) has provided messaging and computer conferencing facilities for the students and staff of the Graduate Diploma in Information and Communication Technology Education course. In one of the units within this course it was compulsory for students to submit their final assignment using the BBS. Students can either connect directly from home or their workplace using a modem or complete the task on-campus using the computer laboratory for access to the BBS. During the semester, assessment tasks were set where students had to upload their findings so that the information would be accessible by other students for analysis and discussion. As one of the choices of their final assessment, students could choose to write an analysis of the information presented on the BBS on a selected topic. This final analysis

when submitted would also be made accessible by way of the BBS to the rest of the students in the course.

On average, over the three years there were about 120 students who participated in the use of the BBS. Most of the students were teachers or trainers completing their graduate qualification on a part-time basis. In general they worked full-time during the day and take most of their classes in the evenings, on weekends or during school vacations.

This student cohort represented the range of diverse teaching professionals. These students were commuting to campus and had packed all their courses into one year of full-time or two years of part-time study. This in addition to their life commitments have left them little space to manoeuvre. The BBS was set up to provide a convenient and efficient means for students to interact with faculty and each other.

Since these students were enrolled in an information technology course it was felt that they should explore and explicate a fuller meaning and understanding of using the BBS as a means to enhance learning. It was expected that these students would already possess the necessary technical skills in the use of computers to be able to use the BBS without great difficulty.

Faculty was of the view that being educated in computer information technology is more than an instrumental understanding of how a computer works or is used; it is the development of a broader conceptual framework from which a person is able to understand the issues and implications of the technology. After all these students are teaching professionals and they would ultimately take their experiences back to their own students whom they have to teach when they complete the course.

With this rationale, the BBS facilities were thus set up for students. It was compulsory for students to send electronic mail to the lecturer and to transfer assignment work (upload/download files) through the use of the file transfer utility. Those students with a computer and modem connections were encouraged to connect from home, whilst those without had access to the computer laboratory on campus to perform the same tasks. There was no pressure for the students to purchase a modem as facilities were readily available on campus for those who wished to access them.

Students were given a manual on how to connect to the BBS. The electronic file of the manual was also available on the BBS for students to download and then print. The students were given an induction session on how to use the BBS and was provided with the telephone number for the Systems Operator (SYSOP) in case any problems arose. The role of the sysop (who had undertaken this role over and above his lecturing responsibilities in the course) was to help students overcome difficulties in their early attempts to use this electronic means of communication. This person was able to give students some technical help where appropriate.

Within the student population there was substantial variation in the extent to which students used the BBS. Some students, particularly those comfortable with the use of the computer, tended to be very active. Others used the BBS only in a limited way, i.e. they would submit their work online and not continue to engage in the use of the BBS for conferencing purposes or to send messages to the lecturer concerned.

Methodology

In November, 1995, a questionnaire containing twelve questions was administered to sixty-six students enrolled in the course. It consisted of a combination of multiple choice questions, Likert type questions and open-ended questions.

The specific objectives of the survey were to: (1) establish the level of student involvement in the use of a BBS as part of their course of study; (2) identify technical and structural concerns associated with this medium; and (3) ascertain learner perceptions and satisfaction in the use of such a medium and determine the types of resources required to effectively integrate this technology.

Findings

The major findings were:

1. Higher level of awareness of Bulletin Board Systems. In the three year period (1993 — 1995) a large percentage (85%) of students in this sample claimed to be aware of BBSs as compared to 15 per cent in the years prior to 1993.
2. A large percentage of students owned their own computers. Eighty-three per cent of these students owned a computer, whilst 36 per cent of them also owned a modem. Of the students

who indicated ownership of a modem, seventy per cent of them had high speed modems which were capable of transmitting at speeds of 14400 bps or higher.

3. The main reasons for buying a modem fell into three major categories: (a) to connect to the Internet; (b) to electronically transfer files; and (c) to engage in activities on the BBS.
4. Student self-perception of computing skills at the time of purchasing the modem was fairly low. Twenty-five per cent indicated that they had some skills, with only 15 per cent claiming to be competent users. In contrast when asked what their present level of computing skills were 79 per cent indicated that they either had some skills now, were competent users of computing or were very competent. This is a huge rise in the level of skills perception on the part of the students over a period of three years.
5. Response to the provision of Email facilities was positive. When asked to respond to a series of questions in regard to email facilities, the results are shown below.
   A very high percentage (88%) of the students indicated that they would like to have email facilities whilst doing this course. Fifty-one per cent were prepared to pay between ten and twenty dollars to register for email facilities while thirty-one per cent were prepared to pay twenty-five dollars for such a service. Additionally fifty-seven per cent were prepared to pay between ten to twenty-five dollars for telephone bills to connect to such a service with thirty-five per cent indicating their preparedness to pay fifty dollars or more.
6. Responses to the question "What else would you like to be able to do from home?" are shown in Table 1 below.

Items	%
Internet access	83
Access to library/databases from home	82
Interact with lecturers	77
Send/receive assignments online	76
Access to course information	67
Engage in computer conferencing from home	52
Engage in peer interaction/group work activity	48
Student records access	35

Table 1: (N = 66)

7. Responses to the question: If courses were offered in flexible delivery modes and you did not have a computer and a modem, would you be prepared to:

Items	%
Buy them	55
Lease them	36
Work at a friend's place	4
Go to a study centre with facilities	5

Table 2: (N = 66)

Whilst students indicated the above responses, some ambivalence is evident since thirty-five per cent of those who had selected options as shown above also indicated that they would like to travel to attend conventional classes.

Problems

The items requiring qualitative responses were analysed and summarised to produce qualitative themes as described and discussed below. The most frequent criticism about the program noted by students was that not enough time was given for familiarisation with the medium. Technical concerns

remain the main issue for a large number of students. When asked to reflect on their initial experience of using the BBS, students recalled:

- having spent numerous hours fiddling with the equipment trying to connect;
- lack of guidance from anyone;
- confusion and lack of knowledge on what to do;
- absence of clear course notes to facilitate BBS connection;
- having to resort to external help and support e.g. PC Users' group, friends, colleagues, computer magazines and
- experiencing great difficulty connecting to the BBS from external locations lines dropping off all the time.

Student perceptions

In regard to the question which requested students to provide further comment on whether provision of electronic facilities is useful or necessary, the main theme appears to be that students should be given a choice of selecting the modes of study which they prefer. On the whole there is a very positive response to the use of electronic communications or computer mediated delivery of courses provided that a high level of support is available to alleviate problems such as inadequacies of software and the system's ease of use. Although students generally agreed that the use of the BBS seemed to emerge as a medium — that if integrated well into the course — can contribute significantly to a better, more student-centred learning climate, their frequent comments indicated high levels of frustration in relation to the technical and structural problems encountered.

Respondents suggested various ways to overcome problems reported above. Specific solutions included: better technical support — online help; clear instructions to guide students through installation of modems and how to connect to the BBS; several hands-on workshops for familiarisation with the medium before students have to do it on their own; standardisation of equipment i.e. faculty to recommend certain brands of modems and communications software with clear instructions for installation; and ensure that downtime was minimal. Students felt that unless these problems are alleviated, the conceptual advantages the medium has to offer will not eventuate.

Conclusions and Implications

This report has encapsulated the excitement, positive perceptions of the value of electronic communications and student's willingness to pay for such services. At the same time though student comments reveal fairly high levels of frustration that have accompanied early attempts at making effective use of the BBS. Students realised the benefits of the ability to use electronic communications as it allows them to become actively engaged in a community of people sharing and creating information. These students were excited by the fact that they can draw on new kinds of resources to experience new kinds of learning opportunities, and to work flexibly with materials in shaping educational experiences fitted to their needs. Since it was compulsory within this course that students had to use the BBS, students really did not have a choice in whether to use this technology or not. However, despite the frustrating experience, most of them managed to cope and with the exception of a minority of students, and most are now ready to use email and the Internet.

Responses to questions as indicated above reveal that a taste of this new technology has led students to demand much higher levels of access and more sophisticated use of the technology. Essentially all participating students are of the opinion that the provision for telecommunication on this campus is essential and should be implemented as soon as possible. A fundamental question, however, about the use of electronic communications still needs to be asked — how much value will be realised in practice due to its availability in educational settings. Will these students transfer their skills into their own future classrooms when they complete this course? From the positive responses obtained in this survey there is a strong indication that these students who have had some experience of the BBS will now be better placed to join the electronic communities on the Internet thus forming networks of their own to share their thoughts and ideas and to see this as a continual challenge. What is clear from this survey is that for technology to be integrated properly into the course, students must use this medium in more then one subject within the course. Using the technology in isolation will not prepare these students adequately. More opportunities must be available for students to develop

their competence in this area so they can effectively model and demonstrate its use in their own professional activities.

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