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TEACHING ONLINE: WHAT PRICE STUDENT SATISFACTION?

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Abstract

Previous studies have reported a range of benefits and problems for the student involved in online distance education. This paper reports the findings from a case study covering such a course offered to undergraduate business students. It provides an overview of the literature and examines the factors, including the way it is run, that might contribute to the perceived benefits and problems. It also provides a detailed outline of the professor's workload in such a course. It seems that benefits are enhanced and problems decreased by allowing students to work at their own pace, coupled with close monitoring and review; providing an environment where the students do not feel intimidated; and by allowing them to take full advantage of flexibility and convenience. Allowing the course to give them an opportunity to develop skills (such as time management and information technology) for use later in their careers is also seen as a benefit. The paper attempts to set student satisfaction alongside the effort and involvement of the instructor.

Keywords: IS education, online education, e-learning

Introduction

The technologies associated with the Internet are opening up new ways of delivering education. In addition, the acceptance and use of these technologies are widespread, easing the transition from the traditional classroom in the eyes of university administrators, students and academics, at least at first appearances. Coupled with this, the world wide shortage of academic staff in the business schools, particularly in information intensive areas (Diamond 2002) is encouraging school management to experiment with alternative forms of delivery. University administrations can see attractions in increasing numbers of students. Under what conditions will the Internet and its associated technologies provide an acceptable answer? What problems will be encountered in the use of telecommuting academics?

Research into online education is becoming part of mainstream literature, particularly IS literature (Alavi and Leidner, 2001, Picolli, Ahmad, and Ives, 2001). The acceptance of such articles by these leading journals is indicative of the serious view of the research within the IS discipline.

This paper sets the professor's workload and the student evaluations of an online distance class against a backdrop of relevant literature. It details the experiences associated with teaching a final year undergraduate class via the web, with the students meeting face-to-face with the professor only once.

Background

Internet delivery of education is the latest technique in the long history of distance education. There is a considerable body of literature discussing potential differences in performance of students undertaking distance education courses as compared to traditional classroom courses - see for example, Neal (1998), Taylor (1999), Wetzel et al (1994) Storck and Sproull (1995) and Hara and Kling (1999). In general these studies indicate that there are no significant differences in achievement and the satisfaction of students in distance education classes, when compared to the more traditional modes of delivery, however finding

empirically based research specifically related to online distance education is difficult, no doubt partly due to the recent nature of such delivery (see also Schell 2001).

A number of studies do provide some indication of student perceptions of online distance education (Hiltz, 1997, Hornby and Anderson 1995, Hara and Kling 1999, Pear and Novak 1996, Stahlman 1996, Hsu and Backhouse 2001). In general the benefits identified by students include convenience and flexibility, greater motivation to work, learning more and greater understanding of the course material, higher quality of education, better access to and communication with the professor, more communication with other students, more active participation in discussion and some liked the unlimited access to self-assessment and immediate and extensive feedback. There has also been work done in relation to the Technology Acceptance Model – see in particular Cheung et al (2001), which indicated that perceived usefulness had the greatest effect on the behavioural intentions of students.

Against this, the following problems were identified (note the overlap, different studies reported different findings) a high level of frustration and dissatisfaction, lower levels of satisfaction, technical and logistical problems, lack of interaction with the professor, developing student friendships was more difficult, more likely to stop “attending” and fall behind, lack of feedback and confusion about what was required, overwhelming amounts of reading from email and online discussion, less interesting and less likely to ask questions.

From the academic’s point of view, not all courses are suited to online distance education; there is often a concern expressed about the time taken to prepare and maintain such courses, motivate students, cope with an expected greater demand from students in online classes, intellectual property and a general worry about potential conflict between the administration expectation that such courses be provided cheaply and that they will be of high quality (see for example, Hara and Kling 1999, Taylor 1999, Ward and Newlands, 1998, Hiltz 1997, Hadidi et al 2001).

To some extent online distance education can make the academic a telecommuter. The telecommuting literature lists many advantages and disadvantages for the telecommuter (see, for example, Turban and Wang, 1995, Mokhtarian and Salomon, 1994, Ford and McLaughlin, 1995). The advantages tend to be in the areas of travel, flexibility and convenience, transport costs, and control over one’s working environment, while the disadvantages centre around isolation and lack of social and professional contact with one’s colleagues, exploitation of the individual, and whether the home is suitable for working. In this case, a fairly extreme form of telecommuting was practiced with the class and the professor thousands of miles (and many time zones) apart. It might be expected that the professor would experience some of the disadvantages of telecommuting.

As noted above, there are a number of studies that have surveyed student opinion on the effects of Internet courses. The studies provided mixed results with little agreement on the impact of Internet courses on students. Most of the studies have used closed question, written questionnaires. There are virtually no studies that have sought in depth information from students, where students are not only asked their opinion on different aspects of online learning but why they hold those views. The case study draws on information obtained from a discussion forum used to evaluate the course. It also provides some indication of the professor’s workload associated with running the course.

The key research questions raised in the above are:

1. Assuming that the previously identified benefits and problems are perceived by the students involved in this course, what are the underlying reasons leading to these perceptions?
2. What was the professor’s perception of the course in terms of the workload necessary to run such a course successfully? and,
3. What indications were there that some of the disadvantages associated with telecommuting were present?

Research Methodology

For an undergraduate class of 38 students, each week the students contributed to a “discussion board” on a particular topic for that week. In the penultimate week of the course, the topic for discussion, posted by the professor was “I wish I had not taken this online course and had enrolled in a traditional face-to-face one” Agree or disagree? Why?” 34 students made a contribution to this topic, most of around 100 – 200 words. The students could see earlier contributions made by their colleagues and some contributions built on the earlier comments. In addition, in accordance with normal practice, the students were requested to complete course evaluation surveys which specifically measured student perceptions of learning associated with the course – these

surveys also included several open-ended questions inviting feedback on the course. Analysis of the discussion board comments was performed by reviewing all 34 comments and grouping them into major themes. These were then compared with the responses to the open-ended questions asked in the course evaluations, which were provided anonymously. Several students took the opportunity to comment “off-line” to the professor – where relevant, these comments have been included in the analysis. All students were guaranteed anonymity (and no penalties for any criticism) for any comments made in discussion or chat sessions during the course, even though the software recorded the identity of the student.

In terms of determining the professor’s involvement, the nature of the course and the tools used meant that all communications were recorded, including “chat” and discussion sessions and the professor recorded the time devoted to various aspects of the course in his diary. The course outline detailed the resources available and all deliverables. Emails were sorted into various groupings dealing with administration, weekly deliverables, monitoring and motivation and were able to be classified and counted. Spreadsheets recorded all student contributions in summary form.

The Class

The data reported here relates to online distance students undertaking a senior level Information Technology Management course for non-IS majors in a Business School at a University in the southern United States. The course is compulsory for Business School non-IS majors and some 200 take the course each semester. The online class had 38 participants, of whom only one had had any prior experience of distance education. Online distance education was not part of the regular delivery methods employed at that University, although most students were aware that this course would be run as a trial distance education class before it commenced. They were offered the opportunity to change to a traditional class if they felt uncomfortable with the online experiment – none did so, in fact others asked to join. The course was run by WebCT and the use of email.

A further relevant factor was that the class selected for online distance delivery was a class scheduled to meet at 5pm on Mondays and Wednesdays. This particular class was chosen for two reasons – it was intended to run “chat” sessions which would take place at one of the scheduled class times – 5pm in the relevant US time zone is early-mid morning the next day in Australia, where the professor resided. The time was seen as convenient to both students and professor. The second factor was that it was believed that a group of under-graduate students who enrolled in a 5pm class would be likely to be attracted to this mode of delivery due to the likelihood of work, family or other commitments.

Findings

There was substantial agreement among the students that convenience and flexibility were the primary reasons for seeing this course as desirable. This agreement derived from allowing students to take on an extra course in order to be able to graduate at the end of the semester, which they would not have been able to do if they had had to attend classes, or allowing them to continue or finish their study notwithstanding work and family commitments. Coupled with this was a feeling (these were non-IS majors) that the class forced them to gain experience in the technology. The following comment encapsulates much of what was said by many students:

I enjoy this course because I can work at my own pace. Sometimes I feel ambitious and I already know what needs to be done, so I'll do a couple of chapters at a time. I also would never have voiced my opinions the way I have in chat sessions and discussions. This gives me the chance to read about what other people have learned and let people know what I've learned. I do however, feel that I have learned more from students than the professor and sometimes miss the Professor to student atmosphere. I wished that the Professor had office hours too. But all and all I think the course was pretty balanced.

Many of the students were enthusiastic, partly because it was experimental and they were keen to be part of it for that reason:

This course has become legendary here, everyone knows about it and is aware of its existence. I'm glad I've taken it because it has taught me responsibility....

And:

Upon enrolling in this course, I was interested in the challenge of taking a course online. It is representative of the change for our new generation and how traditional settings have been evolving over the years. I was down with doing something new. Change is good.

The major problem with the class as seen by many students related to the necessary time management skills.

This course is one that can really make students learn time management and dedication to class. It has been a very good class to take, and has had many unique options. Seeing how I lack in time management it has been a bit hard for me to keep up, however I am glad that I took it. It has taught me a lot and will prove to be beneficial to me.

And:

Time management is something that I need to greatly improve on, and I do not seem to have as much of a problem allocating the proper amount of time to the classes that I have to actually go to several times a week. To make a long story short, I think the class is great, I just need to work on my time management skills.

One area that perhaps deserves particular mention is that of participation – several students commented that they were happier with using the online “chat” facility rather than speaking out in class. From the professor’s viewpoint, participation took considerable encouragement and in the first couple of discussions it was necessary to let the discussion wander widely in order to promote it. It is also worthy of note that one early discussion took place on 12 September 2001, and as might be expected the matters talked about related only to the events of the previous day. Most students had no inhibitions in putting forward their views on this occasion – perhaps this helped participation in the following weeks; nevertheless comments like the following were common.

I am usually very quiet in class and never ask questions and that is one of the major reasons that I enjoyed this class because I could "chat" or ask questions without feeling stupid.

And:

I feel that people, including myself, have opened up more and participated during the chat sessions as compared to how much students actually speak out in a classroom.

It was decided to measure the student perceptions by conducting an additional survey in conjunction with the normal student evaluations run at the end of the semester. 28 students completed these – a 74% response rate. The results of these evaluations are given in Figure 1. In general terms it seems that for most students the course was enjoyable, they would like to take another such class, they would recommend it to others and the learning outcomes were about the same as for other courses. Further analysis of the departmental evaluations indicated that around 30% of students felt that they learnt more, it was more intellectually challenging and that it was more difficult. Against this, a small percentage (around 5%) felt that they learnt less, were less challenged and that it was less difficult.

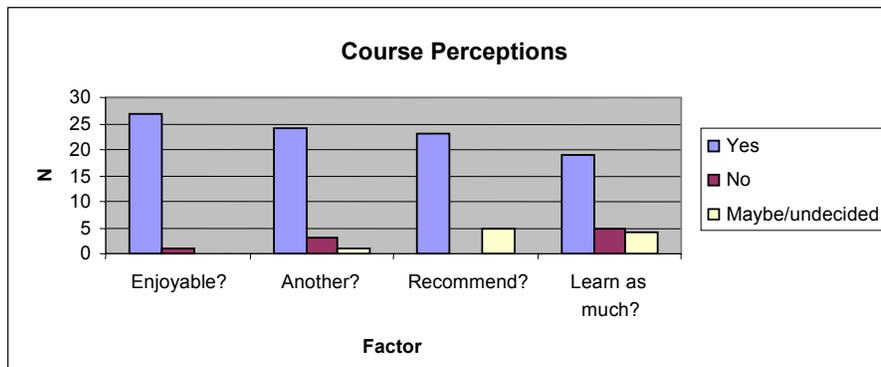


Figure 1. Course Perceptions

It is difficult to consider any such satisfaction measures without considering the role of, and tasks performed by, the professor. This was not inconsiderable (see below) but comments like the following were common:

I think that having a distance learning class via the internet is a great idea, as long as the teacher is prepared, as [he] was.

This raises the topic of the professor’s workload. This was considerable, over the course of the semester and falls into the following main areas:

Instructor related	(a) Selection and assignment of weekly readings – in most cases these were a textbook chapter
	(b) Production of a set of PowerPoint slides for the key issues in the reading – these were heavily based on the material supplied by the textbook author
	(c) Preparation of a set of study notes for each week – a page or so stressing the important issues and providing “real world” illustrations and practical examples
	(d) Development of a mini lecture – a 5-10 minute audio file, in most cases similar to the study notes
	(e) Run a weekly 1¼ hour long “chat” session, similar to a tutorial for discussion of the week’s topic
Assessment related (and learning reinforcement)	(a) Preparation of a weekly multiple choice quiz, (adapted from a test bank supplied by the textbook author) and run on WebCT – the objective of the quiz was to force the students into the textbook
	(b) Selection or development of an assignment topic for each week
	(c) Posting a “discussion topic” for each week to encourage the students to contribute their own experiences to illustrate the chapter topics
	(d) Develop “mid term” quizzes and the exam
	(e) Grading weekly assignments, commenting on discussion contributions, and marking the exam questions.
Administration	(a) Monitoring and advising student progress
	(b) Dealing with and advising on “technical” problems
	(c) Following up assignment submission
Miscellaneous	(a) A visit to the School, and taking one face-to-face class. The primary purposes of this class were to explain how the rest of the semester would unfold, to stress the required time management skills and to leave with the students a feeling that the professor was “warm and friendly” – in other words, very approachable – and they should not hesitate to do so should any such need arise.

The above tasks required over 1200 email messages and over 1000 WebCT messages. It occupied on average, about 1½ - 2 days of the professor’s time each week. This is a substantial workload for a 3-hour class, however it should be noted that in a subsequent offering of the course in this way, these times were considerably reduced – to perhaps a little over a day a week. At the conclusion of the course, the professor suggested that changes for next time would include setting up study groups so that students could turn to each other for help, more assistance to the students to ensure they can deal with the technology and stressing the time management skills even more strongly. Another potential improvement would be the use of the chat room facilities for one-on-one “consultations” – perhaps this could take place at a set time each week, or by appointment, set up by email.

The groupings of the above tasks would suggest that there might be some scope for much of the work to be performed by a person other than the principal instructor. This may have important implications for the scalability of the experiment, however it should be noted that students tend to prefer interaction with the professor, rather than an administrative aid for at least academic related issues, indicating care will need to be exercised in the allocation of the tasks.

The professor did note some of the disadvantages of telecommuting – any contact with the departmental staff was by email, any help sought or advice requested had to be by asynchronous means and he had little or no professional or social interaction with other members of staff. On occasion, it was necessary to requests favours from other staff members, such as supervising the final

examination, or dealing with students who missed it, and following up the occasional instance of a student failing to respond to email. While not onerous, these activities could eventually promote some ill-feeling towards the telecommuter.

Conclusions

This case study has indicated that

- the convenience and flexibility aspects are valued highly by students;
- while some missed the close interaction with the professor, for most this was compensated for by the “virtual” interaction in place;
- “time management skills” are a significant hurdle for many – perhaps not an unexpected finding at the undergraduate level;
- the advantages mentioned in the literature were apparent – convenience and flexibility, some students learn more, some less, and a perception that there was good access to and communication with the professor contributed to satisfaction with the course;
- disadvantages included missing out on face-to-face discussion (although for some students in particular, the “virtual” discussion was preferable to the face-to-face), the potential for frustration, technical problems, falling behind, and a great deal of reading; and
- for the professor, while the time taken, the motivation of students and the increased workload underlined the literature suggestions, there were indications that there may be significant possibilities for reducing the workload and perhaps even the distribution of some of the tasks.

It seems that students appreciated the challenge offered by the course and were proud to be part of it. They enjoyed the convenience and flexibility, but some struggled to cope with the time management associated with meeting the deliverables’ deadlines without being required to attend class. This undoubtedly contributed to the professor’s workload, but also contributed to the general feeling of satisfaction with the course. The workload associated with the course while considerable was enjoyable (partly due to some of the same reasons as the students found it so) and might also be expected to diminish for future courses and with additional courses run by the professor. The disadvantages associated with running a course as a telecommuting academic, while not unexpected, may not be a healthy long-term option.

Other general points are evident from this case study. It must be remembered that this class was selected partly due to the expectation that this form of delivery would appeal to many who would enroll at the scheduled time (5pm). Clearly a limitation of the above findings is their “generalisability” to a wider student population, although such an option may be attractive to a significant body of the undergraduate student population. One of the general findings from the student comments suggested that running a course like this is in itself a valuable learning experience for developing such skills as time management, information gathering, working alone and working to deadlines, with little supervision. Many students saw these skills as setting them up for work in their future careers. In this light it should be noted that the students’ perception that the professor was “warm and friendly” and approachable was a significant factor in the success of the undergraduate class. This suggests that a face-to-face meeting with the professor at the beginning of the course is highly desirable – it is important that students do not fall behind due to their reluctance to contact the professor and outline their problems.

One of the underlying factors in this course was its “novelty” – this presented both challenges and opportunities to overcome those challenges. In most, if not all, cases students did overcome these challenges and felt proud of their achievements. This, coupled with doing something new and different undoubtedly led to improved satisfaction – questions for the future might well be how does one sustain this feeling? Or, will professors continue to be willing to run such courses once the experimental aspects wear off? Such courses might be best suited to some of the students, some of the time – there would seem to be many pitfalls in assuming they might be suited to all students (or all professors) all of the time.

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