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ITP5161

This paper appears in *Managing Modern Organizations Through Information Technology*, Proceedings of the 2005 Information Resources Management Association International Conference, edited by Mehdi Khosrow-Pour. 

# The Blurring of On-Campus and Off-Campus Education: A Position Paper

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## INTRODUCTION

There was a time when an on-campus student gained his or her subject knowledge from attendance at lectures and primarily used this medium to assimilate and develop an understanding of the subject. Modern information systems have changed this and made information more accessible by alternative means (Chalmers & Fuller, 1996). This phenomenon is particularly evident in the fast-paced science fields taught in the School of Computing and Information Science (SCIS) at Edith Cowan University (ECU), Western Australia. Cross disciplinary and interdisciplinary units characterise the breadth of study opportunity in SCIS, with a diverse range of subjects (units), from computer networking, wireless systems, and computer forensics to library technology, information literacy, internet computing and medical informatics. It is within this context that a paradigm shift is occurring in the educational demographic of the student population. There is now little difference between the on-campus and off-campus students enrolled in SCIS or indeed between on-campus, off-campus and off-shore educational offerings. This shift has been driven by the change in technology which affects support of student learning, promotes educational benefits, and presents new educational challenges. These factors have prompted SCIS to develop an in-house courseware delivery system and supportive learning environment called eCourse.

A significant amount of research has been undertaken into effective methods of teaching off-campus students (Cohen & Ellis, 2004). Institutions are learning that these techniques, mainly driven by advances in technology, can be used equally effectively with on-campus students. In addition, the positive aspects of student learning previously linked with off-campus students, shown to be associated with good independent learners and higher student success (Mazoue, 1999), are becoming characteristics of on-campus students too. These characteristics include the ability to function independently, to engage in reflective learning, and good self motivation to study. Therefore the question arises, has the difference between the on-campus and off-campus students education become indistinct? This paper suggests that the distinction between on-campus and off-campus students has become blurred and demonstrates this with reference to the eCourse system.

## TECHNOLOGY

Technology has been a major driver for change in educational teaching techniques. More significantly it has revolutionised access to information and provided new methods of communication. The technological changes have brought enormous benefits for distance learners. “The direction of distance education has turned to the asynchronous learning environment of the Internet where students can choose their own time and place for learning.” (Christopher, Thomas, & Tallent-Runnels, 2004). Such benefits are being presented to, and assumed by, on-campus students too. This is evidenced by the increasing number of on-campus students choosing to take advantage of more readily accessible materials rather than attending formal classes.

Telecommunications technology is changing the backdrop to education and now services a broader community of students. As the effectiveness of education is a function of communication, access to improved and alternative forms of communication enhances the educational experience particularly in the science disciplines (Barnes, 2004). Technology also provides greater opportunities for students to consolidate and discuss their learning by collaboration with their peers. There is also significant evidence that the use of technology itself can improve learning outcomes (Stahl, 2004). Further, Lau (2003) asserts that even student retention is improved by the increased use of technology in student learning. These opportunities now apply equally to on and off-campus students.

Ultimately, whilst effective student learning is the primary focus for universities, tertiary institutions are under increasing pressure to ensure financial viability of their institution too. Stahl (2004) points out that tertiary education establishment, particularly universities, increasingly realise that new technologies are their competitive advantage for attracting students in a developing global education market.

## SUPPORTING STUDENT LEARNING

Whilst technology has provided for a shifting landscape of education, it has also provided opportunities to address other tertiary education pressures such as shortened semesters; retention of intellectual property, catering for an increasingly diverse student group; and prompt feedback to support student learning.

The issue of fixed and declining timeframes to cover essential content causes difficulties for tertiary educators to ensure that students cover the required curriculum. As an example, in 2003, the Faculty of Computing Health and Science at ECU altered its semester schedule from fourteen to thirteen instruction weeks, to be consistent with other Western Australian universities (ECU, 2002). Using technology to provide electronic learning objects can compensate partially for the diminishing contact time, and concurrently cater for various learning styles (Barnes, 2004; Karakaya, Ainscough, & Chopoorian, 2001). SCIS has used its online system (eCourse) to transparently balance the reduction in instruction weeks with curriculum requirements. These learning objects are in various forms such as lecture slides, simulations, communication tools, problem-based activities, case studies and so on. Each object has a particular learning purpose and pertains to a particular learning style. Efficient use of these objects to cater for a diverse group of students, and collectively retaining the intellectual property of the institution, are both sound reasons for preserving teaching resources in this manner.

A significant factor in the student learning process, enabled by technology, is the electronic submission and return of assignments. This provides students a time and location flexibility in submission of their work and allows for more reliable delivery of feedback to the student, often immediately following the review of an assessment. Timely feedback is an essential element of student learning particularly when students have no face-to-face contact (Mazoue, 1999), and traditionally off-campus students had to wait longer to receive feedback than their on-campus counterparts. Additional administrative benefits are gained in using electronic assignment submission, particularly in units with large student numbers, such as:

- dissemination of assessments to tutors takes seconds rather than days;
- tutors have access to the student assessments online, giving independence of location and time;
- receipt and date stamping of assignments is automatic; and
- easier access to both assessments and tutor feedback for academic moderation purposes.

**Educational Benefits**

In addition to supporting student learning, benefits are evident in promoting student centred learning through peer discussion, deep learning strategies, and equality of access to resources. Educators agree that discussion and questioning between students is an important factor in promoting a deep approach to learning (Biggs, 1999; Christopher et al., 2004; Light et al., 2000; Ramsden, 2003). This has more recently been better managed in off-campus learning through bulletin boards and electronic discussion forums, which now the on-campus student has access to and is encouraged to use. Integrating on and off-campus student groups are an important goal. "It is no longer reasonable to dismiss the thinking and learning possibilities provided by online discussions" (Christopher et al., 2004). Arguably it is benefiting the on-campus student more, as traditional methods of lecturing do not always promote the deep learning qualities we seek as educators (Atherton, 2003; Rhem, 1995).

The issue of equality between the location disparate student groups is progressively more apparent in the community with the advances in technology. Universities are under pressure to meet multiple goals set by society, the institution, its staff and the students, which result in increasingly incompatible demands over time and resources. Effective management of these goals at the student level is just one area that needs addressing (Hearn & Holdsworth, 2002). SCIS is using its materials for both on and off-campus students equally, which supports both student groups uniformly and minimises disadvantage in terms of access for either group.

**Challenges**

With the introduction of technology there are challenges to address as well as benefits to reap. These challenges relate to:

- the cultural shift in teaching methods for both students and academics;
- infrastructure costs and equality of access;
- skill requirements by students, particularly undergraduates, to self-manage their learning; and
- student expectations of course material delivery.

Traditional teacher-centred methods of education are inevitably challenged when using electronic teaching (e-teaching) methods. The attitudes of the student forced to effectively self manage their learning, and the lecturer reaction to the shift from teacher to facilitator of their students' learning, are two of such challenges (Stahl, 2004). Further, the cost of electronic connection for all student groups may be problematical.

Another issue is that innovations such as e-teaching assume a level of competence on the part of the student if the use of the technology is going to be effective and not prohibitive. Levels of competence also apply where students must manage their learning effectively. The demands, on all students, of employment, study, family and personal life create challenges in organisation, prioritization and time management (Chalmers & Fuller, 1996). Richardson (1994) found that off-campus students were better managers of their time in relation to study than their on-campus counterparts. This is supported by recent research by Cohen and Ellis (2004). It is foreseeable that student motivation and instruction in self management will become increasingly important issues to address in our undergraduates of the future.

A further challenge is the expectation from on-campus students that learning resources are made available to them online (Spanier, 2003), so that the 'when' and 'where' of study is more within their control. However, the challenge educators' face is the greater time factor with which it takes to maintain and update these compared to 'traditional' teaching materials (Cohen & Ellis, 2004).

## APPLICATION OF TECHNOLOGY

Whilst there are many challenges to address from the educational and infrastructure perspectives, the potential benefits of the application of technology to tertiary education are clear. The educational characteristics discussed in this position paper are summarised in Table 1. This table shows the characteristics of on and off-campus education, and how a convergence of these characteristics is occurring by the use of technology, thus blurring the boundaries between on and off-campus education. This is then explained using eCourse as an example of how this has been achieved in SCIS.

Fundamental to the crossing of on and off-campus educational boundaries for SCIS has been the development of the eCourse system. ECourse is The Faculty of Computing, Health and Science proprietary content delivery system, which is the foundation for the development of a much larger quality initiative by SCIS (Anderson, Clayden, Ring, Combes, & Williams, 2005). Mazoue (1999) suggests that "successful online instruction depends on an adequately equipped and supported network learning infrastructure". The eCourse initiative achieves this using a whole-school approach to provide a quality framework for the development of student-centred courses. Within this framework, learning materials are constructed to assist students to reach the learning outcomes for the unit. ECourse provides an educationally rich environment that includes: unit outlines; lecture notes, assessments and marking keys; student learning outcomes; guidance for assessment task planning; annotated PowerPoint lecture slides; independent workshops; readings; self-assessment quizzes; supplementary and extension materials; sample documents; revision and exam examples; and URL links to further study material available globally.

*Table 1. Comparison of On- and Off-Campus Student Educational Characteristics*

| **Traditional Characteristics of education for students:** | | | **Benefits of technology changes for students:** | |
|---|---|---|---|---|
| ***Characteristic*** | ***Off-Campus*** | ***On-Campus*** | ***Off-Campus*** | ***On-Campus*** |
| Motivation and ability to function independently | Excellent | Often not apparent | Excellent | Encouraged / apparent |
| Self management and study skills | Good | Poor | Good | Improved |
| Time and space independent | Yes | No (fixed lectures) | Yes | Yes |
| Engage in reflective learning | Yes | Often not apparent | Yes | Yes |
| Catering for a variety of learning styles | No | Marginal | Yes | Yes |
| Contact teaching / engagement in lectures | None | High | Possible | High |
| Opportunity for collaboration and discussion with peers | Low | High, with on-campus peers | High, with on and off-campus peers | High, with on and off-campus peers |
| Contact with academic staff | Low | High and immediate | Increased opportunity | High and immediate |
| Subject materials all provided up-front | Yes | Not usually | Yes | Yes |
| Materials in print format | Yes | Yes and visual formats | Numerous formats available | Numerous formats available |
| Materials updated during semester | No | Yes | Yes | Yes |
| Access to additional materials / resources | Difficult | Good | Good | Good |
| Feedback on work and assessments | Delayed | Timely | Timely and can be immediate | Timely and can be immediate |

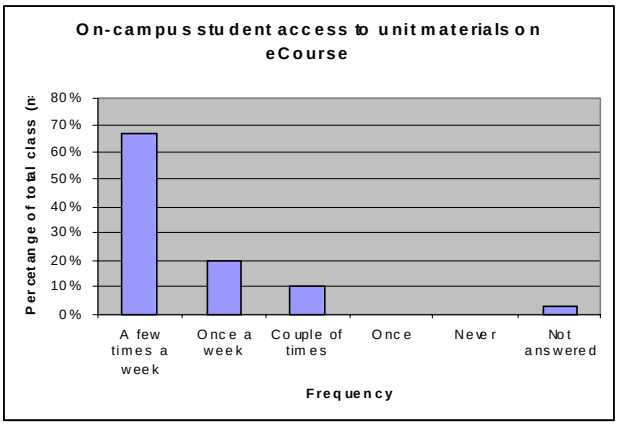
*Table 2. eCourse Access Statistics for Semester 2, 2003*

| | |
|---|---|
| Number of students in eCourse system | 2036 |
| Number of active units | 130 |
| Number of learning objects staff have made available for download | 9,061 |
| Average number of learning objects per unit | 70 |
| Number of forums | 97 |
| Number of posts on forums | 9,863 |
| Number of posts read | 260,542 |
| Number of logins (logins per day) | 175,072 (1700) |
| Number of assessments submitted online | 3,841 |

A key innovation of eCourse is the ability to offer flexibility in the learning objects selected. Any type of 'file' can be uploaded into the system as a learning object, e.g. pdf, html, links, text, programs, word documents, Excel spreadsheets, crosswords, and so on. The system provides a structural environment which allows consistency of look and feel for the student, whilst giving a guideline for staff to develop materials yet allowing considerable flexibility for individual creativity. Students on and off-campus are able to choose their method and level of interaction with these materials. The learning objects provide a diverse resource base catering for all learning styles. Table 2 gives an indication of engagement with these objects and the therefore usage of eCourse. It shows the number of units of study available and the number of students enrolled in these units. (Full time students normally take four units concurrently per semester). The data highlights the large number of learning objects available for students to use, with an average of seventy objects per unit.

For the on-campus student, access to unit materials prior to the implementation of eCourse was a key issue. Whilst it is assumed that online students access materials regularly, supplementary evidence of access to materials for on-campus students was collected in 2004 (Figure 1). The data shown is for a second year undergraduate core subject where 67% of students reported accessing eCourse materials several times per week. The graph highlights the acceptance in access of electronic materials. This is confirmed in Table 2 by the average number of logins to eCourse per day. This figure does not necessarily represent the number of different students as some students and staff may login several times per day, however, it does give an indication of the overall usage of the system.

*Figure 1. Access by Students to eCourse Materials Per Week*




The eCourse environment provides for multiple online communities of students grouped by both the unit of study and as a community of students within the faculty. The system has all the common characteristics of online communities such as specific content, membership, and the ability to communicate online. It therefore supports a culture of learners, and learning, that blurs the distinction between on-campus, off-campus and off-shore international students. Table 2 shows there are 97 discussion forums with 9,863 messages posted to these forums. The astounding readership of 260,542 of these messages indicates there is a significant level of interaction between students and staff that prior to eCourse was not apparent.

Lastly, Table 2 shows initial adoption of electronic submission of assignments in its first semester of use as 3,841. This represents a significant cultural shift for both students and staff in moving to the online learning environment. Whilst timely feedback is an obvious benefit to students, so too is the reduction in administrative workload. The current electronic submission numbers represents only half of all assignment submissions in a semester, however as manual receipt and date stamping of assignments is no longer necessary and distribution to tutors is handled by the unit coordinator electronically, the time saving for administrative staff is significant.

SCIS made the transition from formerly external (off-campus) student study mode to online study mode in 2002. Using eCourse to facilitate the shift to an integrated online environment, materials that were previously sent by mail are now available online and upon request on CD. Whilst the transition from primarily on-campus to a mixture of on and off-campus modes has been relatively transparent for our School, other less computer literate school may find this a challenge.

## CONCLUSION

As Evans and Stacey (2002) indicate, in the university environment the terms flexible delivery and flexible learning have been used synonymously with distance education. However, we would argue that flexible delivery and flexible learning in SCIS applies equally to both on-campus and off-campus students. The change to technological infrastructure is providing opportunities which blur the boundaries between on-campus and off-campus students. The technology and expectations of society, the University and our students, have driven the transition to an electronic education environment. The benefits and opportunities open to all students include increased communication and collaboration, independence of study method, and provision for supplemented learning in a student-centred learning environment. On balance whilst the issues of access and equity should not be ignored, however SCIS has sought to minimise these using eCourse. In addition, the transition to an online environment for education may require us to teach more independent learning skills to our students and may result in an altered way of working for academics.

The campus of the future may be unrecognisable to those of us in tertiary education today. With the advent of laptops and wireless networks, on-campus students are already bringing technology into the lecture theatre. Connectivity is the keyword for the future of education. "By 2009, more than 80 percent of students will use mobile/cell phone technology as a tool for learning" (Zastrocky et al., 2004). Perhaps the last word should be left to Socrates who said that "in order to achieve happiness one must dedicate oneself to knowledge, truth, contemplation and thinking" (cited in Stahl, 2004). It matters not whether students are on or off-campus, only that whatever vehicle used to assist their learning enables them to strive to achieve happiness through it!

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