

Colloquium

New technology in learning: a decade's experience in a business school

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Introduction and background

In 1992, the staff at City University Business School introduced a range of innovative applications of information technology into its campus-based courses, principally the full-time Master of Business Administration (MBA) programme. At the time, these were prompted by the increase in interest in 'end-user computing'—in effect the emergence of personal computers as a business tool—and also by the new opportunity to use electronic mail over the U.K. academic network. The idea was raised that this technology—particularly tools that were emerging in academia, but hardly used at all in business—could add value in a holistic sense to the students' experience, notably by fostering effective group work. Therefore the desired benefits of using information technology went beyond the apparent purpose of fostering an understanding of its potential in business, to seeing it as a tool that could facilitate learning.

These innovations achieved a measure of success, in that they added some tangible value to the learning process: This concept of adding value was identified from the start. Initially this tangible added value included opportunities for international collaboration between students using email, and the use of simulations within which students could practise management approaches. Later, value was added through creation of a climate within the business school where the use of information and communication technology was seen as a crucial part of a degree course, culminating with the offer of a specialised MBA in e-business, which coincided with the dot.com boom during the 1999–2000 academic year.

Nevertheless this success was not unqualified. The innovative approaches remained the preserve of a small group of faculty, and were limited to a few components within both undergraduate and postgraduate degree programmes. They were not universally appreciated by students, notably because some students reported a sense that information systems should be taught as a self-contained topic, or purely as a technical or practical skill. Despite the continuing climate of innovation, the business school was not particularly quick to introduce a virtual learning environment (VLE) to support its

programmes delivered through face-to-face introduction; in the terms used by Rogers (1995) it would be classed as an early majority user of a VLE, not an early adopter nor an innovator.

It is instructive, then, to review these innovations with hindsight, to consider what lessons can be drawn for educators and also whether new insights can be drawn through revisiting the earlier work.

Pedagogic approaches and developments

Venkatraman (1991) identified 'awareness of the power of IT' and 'willingness to make quantum changes' as organisational enablers necessary to achieve revolutionary change as a result of new information systems. These factors were clearly present in City University Business School and Venkatraman's analysis of evolutionary and revolutionary applications remains pertinent today. In the business context Venkatraman's revolutionary applications relied on significant changes to business processes. In the pedagogic environment under review, changes to process were achieved by using information technology as an adjunct to existing channels for instruction. In particular the email-enabled case study taken by MBA students was used to build up a story in stages, with which students could engage over a whole term (Rich, 1997).

By embedding information technology in the syllabus, by building a research interest in the application of this technology, and by encouraging the use of the Internet, these learning approaches prefigured two important developments that came to fruition during the second half of the 1990s—the emergence of e-business, and the emergence of Scholarship of Teaching and Learning as a route to linking teaching and research through applying research and scholarship to the learning process (Elton, 2001; Jenkins, Breen, Lindsay & Brew, 2003).

In the early 1990s, email was still seen as an eccentric and unreliable channel for communication, and some resistance was encountered among students who saw it as being inappropriate for business applications. There were considerable variations in the level of initial computer literacy among students, and for some any further learning outcomes were obscured by the need to learn basic computer skills.

A case study, Trent Engineering, was used as a focus for MBA study into information systems for several years, first using email as a basis and then using a revised web-based version. The principal motivation for adapting to the web-based version was the need to use technology that was of current interest and that would attract the students to take an interest in the tasks that they had been set (Rich, 1999).

Subsequently the MBAs participated in a *dynamic knowledge network* (Holtham, D'Cruz & Tiwari, 1998), which was used to encourage professional knowledge creation and management among the student cohort, exploiting *active learning* and *knowledge building* that had already been established as potential benefits of using information technology in learning, notably by Harasim (1990).

Conclusions

The innovations at City University were characterised by an approach identified by Klimis (Wallis & Choi, 1996) as 'do-it-yourself', using decentralised content which allows the educator a high degree of interaction with the material. Ciborra (1996) used the term 'bricolage' to describe a common informal and nonrational approach to information-systems development, that has direct parallels with the use of information systems in instructional design.

A small group of faculty working with limited technical resources can produce a material that is innovative, pedagogically sound, and that uses information and communications technology (ICT) to its greatest advantage. From the very beginning it was identified that there was considerable scope for using ICT to support learning in a setting where the primary means of instruction is through face-to-face lectures.

These learning exercises used technology which was innovative and which had limited business applications at first, but which evolved to being a practical business tool as the 1990s progressed. This is indicative of a more general point, that there may be benefits in persevering with innovative approaches even in the face of initial resistance from students.

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