Chapter 60

Factors Shaping Academics' Use of Technology in Teaching:
A Proposed Model

Geraldine Torrisi-Steele
Griffith University, Australia

ABSTRACT

Whilst academics have generally adopted the use of new technologies in their teaching, literature indicates that only a minority is exploiting technology to provide pedagogically rich learning experiences. This is a significant issue for universities, many of which are making considerable strategic investment into technology-infused teaching, as one way of responding to the pressures of globalization and meeting the needs technology-savvy student cohorts. Providing appropriate support to assist academics to implement effective, technology-infused teaching strategies is thus critical. It is argued that development of appropriate academic support should be informed by an understanding of why academics use technology as they do in their teaching. Towards this end, a model of factors influencing how academics use technology in their teaching is proposed in the chapter. The model arises from a synthesis of relevant literature and the identification of pertinent conceptual frameworks.

INTRODUCTION

New and emerging technologies have rapidly become a major feature of higher education teaching contexts. However, although institutions are making considerable investment to promote and support the use of technology in teaching, literature indicates that effective technology infused teaching practices are being adopted only by a minority of academics (Graham & Robison, 2007). Hence, a major challenge for higher education is supporting university teaching staff so that, post-adoption of technology, their use of technology will extend beyond purposes of efficiency and access, to the provision of pedagogically rich learning experiences.

In effort to lay some foundation for much needed further research aimed at addressing the issue of how to support academics in their use of technology-infused teaching, the chapter develops a model of factors that potentially influence how academics use technology in their teaching.

The model is developed by, first exploring and synthesizing existing literature, and then identifying noteworthy factors arising from literature and pertinent conceptual frameworks(technology acceptance (Davis, 1986), evolution of teaching practice (Sandholtz, Ringstaff, & Dwyer, 1997), teaching style (Grasha, 1996) and constructivist philosophy (Jonassen, 1994), and technological, pedagogical and content knowledge (Mishra & Koehler, 2006), and self-efficacy (Bandura, 1986).

It is envisaged the chapter will be of interest to university administrators developing support mechanisms and strategies to promote institution-wide adoption of effective technology infused teaching practices, to those engaged in the provision of professional development for academic teaching; and to researchers in the field of technology and pedagogy in higher education. The chapter provides a launching point for much needed further research into identifying factors shaping the manner in which academics' use technology for teaching.

BACKGROUND

Today's universities are compelled to change as they face what is possibly the most significant challenge in their history. The source of the challenge, as Siemans and Matheos (2010) so neatly sum up, is that at the same time as universities grapple with emerging technologies and the challenges of delivering education in a form palatable to a technologically savvy student body, the forces of globalization, expansion, and economic uncertainty are bearing down on institutions.

The potential of technology infused teaching approaches to help universities cope with current pressures is widely acknowledged in the literature. Many universities are investing considerable effort and money, to support institution-wide use of efficient, flexible, and quality technology-infused teaching strategies (Bonk, Kim, & Zeng, 2006; Graham & Robison, 2007; Garrison & Kanuka,

2004; Graham, 2006; Vasileiou, 2009). Technology use in teaching contexts clearly offers the advantages of flexibility and efficiency, which help universities, cope with increased student numbers and varied student needs. Furthermore, the use of technology may be a 'draw-card' for today's technology savvy students. Many students coming to university are immersed in new technologies and live in a highly connected social network and there is an expectation that the technologies with which they interact on a daily basis will also be present in their learning environment. Courses meeting these expectations will be more attractive to students (Ross & Gage, 2006). Technology also offers flexibility of access (through remote collaboration) for the increasing numbers of students juggling study, work and family (Uğur, Akkoyunlu, & Kurbanoğlu, 2011).

Although efficiency and flexibility are important considerations, alone they will not enable a university to remain competitive in the global market. As Graham and Robison (2007) point out, the promise of technology rich learning to help universities change in response to pressures will only be realized by the widespread adoption of effective technology-infused teaching practices.

Proponents of using technology for teaching, argue that technology can be used not only to create effective learning experiences, but that it offers some pedagogical advantage over more traditional methods for a number of reasons - it can facilitate the building of communities of inquiry, it offers the opportunity to provide experience that might not otherwise be possible, it more strongly focuses attention to the teaching and learning and so promotes the design of user-centered learning experiences, and it can encourage engagement and develop self-directed learning skills in students (Garrison & Kanuka, 2004; Sancho et al. 2006; George-Walker & Keeffe, 2010).

It is important to highlight at this point, that at the crux of views of pedagogical potential of blended learning is the academic's ability to create effective, pedagogically rich, experience through

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