Chapter VII

Teaching or Technology: Who's Driving the Bandwagon?

Geoffrey C. Mitchell
Victoria University of Wellington, New Zealand

Beverley G. Hope
Victoria University of Wellington, New Zealand
and City University of Hong Kong, China

Fuelled by the increasing connectivity afforded by the Internet and the flexibility offered by Web technologies, the use of technology in education has become increasingly common. However, despite claims that the Web will revolutionise education, many attempts at Web-based education simply reinforce current 'poor' teaching practices or present more of the same disguised in updated packaging. We argue that this occurs because of differing pedagogical assumptions and a limited understanding of how flexible learning differs from traditional approaches. In particular, we argue that flexible learning demands an increased focus on constructivism and the sociological aspects of teaching and learning. This chapter presents two frameworks that situate our approach to flexible learning with respect to more traditional offerings and discusses the implications for educational technology design.

INTRODUCTION

Advances in information and communication technologies (ICT) in the last 20 years have had a significant social and economic impact (Adams & Warf, 1997). The diffusion of ICT includes not only the ubiquitousness of computers, but also increases in computing power, multi-media capability, and interconnectedness. The education sector has not been immune to the impact of these developments. While moves from purely synchronous to asynchronous delivery modes preceded the ascendance of ICT, ICT has been a major enabling factor in more recent shifts from broadcast (1-m) to interactive (m-m) interaction modes and from linear (textbook) to network (hypertext) information presentation.

The new technologies have both 'pull' and 'push' impacts on trends in flexible education. That is, they provide a solution to demands for more flexible forms of education and, because of their capabilities, also serve to increase demand. Informed, motivated students in the new competitive educational environment are demanding modes of learning that suit their individual needs.

Life-long education and global course offerings have led to increasingly diverse student populations at the higher education level. This diversity is apparent in demographic characteristics such as age, culture, prior education, work and life experience, and learning style. Meeting the needs of this diverse population requires greater flexibility in course delivery. This is difficult to achieve in a traditional, large-class, same-time/same-place teaching environment. Increased availability of computers and greater connectivity can overcome these difficulties. Regrettably, many Web-based educational implementations reinforce rather than replace inflexible teaching practices.

In this chapter, we argue that to maximise the benefits of educational technology, greater attention must given to the motives and planning behind the adoption of educational technology. We first discuss some of the underlying pedagogical assumptions of instructional choices from three perspectives: techno-logical determinism, psychological determinism, and sociological determinism. This forms the background to the development of a framework comparing 'emergent' teaching and learning practices with more traditional practices. Emergent, flexible forms of education are discussed in terms of their implications for educational technology design. We conclude by presenting some simple guidelines for the design of educational technology to support both teaching and learning practices.

BACKGROUND

Underlying the debate about the role of ICT in education are some basic pedagogical assumptions (Berman, 1992; Cowley, Scragg, & Baldwin, 1993; Harsim, 1990; Kozma & Johnston, 1991; Miller & Miller, 1999) and some theories

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