Chapter 5

Using Technology in Learning and Teaching:
Making the Right Choices Involves Understanding the Problems to be Solved

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EXECUTIVE SUMMARY

This chapter describes approaches to using technology in teaching that have facilitated engaging and challenging learning settings across a range of discipline areas. The framework of the discussion offers readers the opportunity to consider and plan their own use of learning technologies. Fundamental to the strategies described in this chapter is the use of technology to provide opportunities for learning and teaching that solve problems and provide solutions to identified needs. The chapter describes uses of technologies that are able to deliver high student satisfaction and deep learning. The chapter discusses approaches that can be implemented with a variety of technologies and encourages readers to plan and implement the ideas within their own settings.

INTRODUCTION

Technology is often implemented in learning settings in ways that replicate and mimic conventional teaching practices (Beetham & Sharpe, 2007). This chapter argues the need to take advantage of the opportunities and affordances rather than simply using expensive tools in limited ways (Jonassen, 2000). In my teaching career, I have sought to use technology in ways that enhance conventional practices because if institutions and students spend money on learning technologies, it is important to ensure that there is a real value-add.

It is common today for users of technology to discuss their projects in terms of the technologies they are using. Descriptions of learning settings abound with discussion of teachers using mobile technologies, whiteboards, iPads and the like (e.g. Bonk, 2009) but it is not the technology that influences learning—it is the way in which the technology is used that makes the difference (Clark, 1983; Laurillard, 2001). This chapter explores the opportunities and advantages of technology that have driven my teaching activities with a view to offering readers a sense of how they might adapt such approaches to their own teaching.

BACKGROUND

This chapter describes approaches to learning and teaching with technology I have undertaken in university settings across a period of 25 years from the mid-eighties to the present. During this period, my colleagues and I pioneered and trialed a wide number of technology-enabled applications and gained recognition for the quality of these learning and teaching activities at institutional and national levels. The aim of the chapter is to showcase some of these strategies.

When I first started using technology in my university teaching in 1984, there was no Internet, and there were no laptops. The applications were based on desktop computers (and terminals) organized in laboratories. Early applications of the technology in my teaching, therefore, involved using computers as a complement to existing activities. The students were introduced to the laboratory computers and encouraged to use them with the specialized tutorial programs we developed to support particular parts of our courses and programs. At this time, we were also exploring the use of productivity tools like word processors as writing aids and spreadsheets and databases as tools for inquiry and analysis. Many of the applications of the technology at this time provided interesting enhancements and additions to our learning programs (e.g. Oliver, 1989; Oliver & Kerr, 1993). An important component of the use of computers was to ensure all students were developing levels of IT literacy, an area of keen interest at the time (Oliver, 1993).

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