Chapter 19

Web–Based Learning: Status Quo and Trend

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ABSTRACT

Due to the increasing adoption of computers and networks, web-based learning (e-learning) has become more feasible and acceptable within the worldwide (De Moor, 2007). The Web, as an essential means of supporting teaching and learning, has become an important application in the field of tertiary education. Most Australian universities adopt the Web and web-based technologies to support their students in both traditional coursework as well as online learning (Straub, 2008). As one indispensable mode of education, web-based learning has brought students and lecturers with a much more convenient way to teach and learn. It serves in a variety of learning activities, such as communication, information retrieval, collaboration, assessment and work management. With a strong confidence in web-based learning, it is believed by a number of researchers that this learning mode will continue to grow and capture a greater share of the tertiary education market.

INTRODUCTION

The rapid development of networks and web-based technologies has made web-based learning more feasible. The Web, as an essential means of communication and information retrieval nowadays, are being widely used in many areas in the modern society including the field of education. Computers and web-based technologies are being used across education levels, faculties and disciplines. This can also be seen from the prominent use of these technologies in Australian universities. Lecturers
Web-Based Learning

and Web-based learning support groups at universities are facing great challenges in providing satisfactory web-based learning environment for their students, as students’ needs and requirements are also increasing and getting more complex. Therefore, the concept of implementing the Web and web-based technologies in students’ learning has become a lifelong issue on an on-going basis.

This chapter aims to introduce you the theories in relation to computer assisted learning (CAL) and web-based learning. It intends to draw a complete picture of web-based learning in Australian university context by introducing the status quo and trend of web-based learning, instrumentality of the Web and web-based technologies as well as issue and challenges emerged. A figure designed based on Wilson’s (1996) three categories of learning environment will be examined to show the position of the Web and web-based technologies in teaching and learning. The purposes of Web adoption at Australian university context, such as communication, information acquiring, assessments and collaboration, will be introduced. A framework will then be designed to illustrate the web-based technologies and tools adopted in the web-based learning environments.

DEFINITIONS AND RELATIONSHIPS

When discussing about definitions in relation to computer assisted learning (CAL) and web-based learning, there are often too many terms and some of which overlap. According to Wilson (1996), there are three major categories of learning environments: Classroom-based learning, Computer microworld and Virtual learning environment. Classroom-based learning, within the three learning modes, is commonly seen as the most widely used traditional educational setup. In a classroom-based learning environment, students periodically meet face-to-face with their instructors and other fellow students, using traditional teaching materials, such as books and CDs (Parikh, 2003). This face-to-face learning interaction is still seen as the most popular mode among all learning methods. However, due to the rapid development of technology and network, this ‘onefold’ teaching style can no longer meet students’ learning demands in some situations, and this leads to the increasing popularity of computer assisted learning (CAL) in a worldwide context.

Computer assisted learning (CAL) is also defined as computer-mediated learning (CML) or e-learning (Talbot, 2003; Zhang, Zhao, Zhou, & Nunamaker, 2004). It refers to the combination of computer microworld and virtual learning environment (Wilson, 1996). The computer microworld refers to a self-contained computer based learning environment. In this context students learn at their own pace using a computerised learning system, such as computer-based training and intelligent tutoring systems (Parikh, 2003). Compare to the computer microworld, a virtual learning environment provides students with more freedom because it allows students, dispersed over a large geographic area, to learn through a communication medium (Parikh, 2003). Hence, it is also called a telecommunications-based learning environment or distance learning by some other researchers (Shanker & Hu, 2008). CAL brings enormous benefits to learners and education institutions, such as easier access to quality education, affordable education, convenience and flexibility for learners and reduced environmental impact. The computer microworld and the virtual learning environment are considered to be the two major components of CAL in this research, and are both serving to support the traditional classroom-based learning approach.

Web-based learning (WBL), which is also defined as online education or internet-based learning, is a major subcomponent of the term ‘CAL’, and appearing frequently in relevant literatures. The Web is commonly understood as the World Wide Web. WBL has numerous names such as
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