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Chapter XXI

A Comparative Study of Diffusion of Web-Based Education (WBE) in Singapore and Australia

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ABSTRACT

Examined and compared in this chapter is the diffusion of WBE in Singapore and Australia. These two countries were chosen in this study because of the close educational collaborations and developments between them. A number of Australian universities have offshore bases in Singapore. It would be more cost-effective and profitable to use WBE instead of using the usual corresponding method, or flying professors into the country a few times a year for intensive residential studies. In this chapter, WBE at some selected institutions is reported in detail, because these institutions represent the more advanced developments of WBE in the respective country. Meta-analysis, using a modified Taylor's model (Taylor, 2001), reveals that though Singapore and Australia are different in their approach and policies to education and technology, they share similar trends and achievements in the development of WBE. Tertiary institutions in both countries have generally achieved all the characteristics of Generations 4 and 5 of the development model of Distance Education, as described by Taylor. However, this is not to say that face-to-face teaching has been phased out. This study also indicates that WBE supports the development of distance

education and e-universities in Australia. On the other hand, it is hard to say when Singapore will develop its first e-university.

INTRODUCTION

The Internet has transformed the way to deliver education in the 21st century. Web-based education has been developed on the basis of the capability and potential of the Internet. The idea of Web-based education was first developed about 15 years ago from a simple form of online learning, using mainly email as a form of communication, and consisting of mainly text, with no multimedia. Soon after, a variety of new software and services were developed to support WBE. In the late 1990s, the development of new technologies for this purpose accelerated. They gradually transformed the way by which distance education was delivered. Today, it is common for private and public educational institutions to offer Web-based courses. However, only a few virtual universities exist today, with all of their courses and activities Web-based.

Books discussing the different aspects of WBE have also mushroomed. Khan (Ed.) (1997), Tan, Corbett, & Wong (Ed.) (1998), Aggarwal (Ed.) (2000), and Moore & Cozine (Ed.) (2000) provide a good understanding of the major aspects in WBE, such as Web-based instructions, Web-based communications, WBE technology, and WBE education diffusion. Taylor (2001) described distance learning now as having reached the fifth generation, involving Web capabilities. In his report entitled "Fifth Generation Distance Education," he described the fifth generation of distance learning as the intelligent flexible learning model. Here, he provides a comprehensive basis for considering Web-based education as a distinctive form of distance education that possesses a variety of characteristics of delivery technologies. According to Taylor, the key elements of WBE are as follows:

1. Offering interactive multimedia online
2. Offering Internet-based access to WWW resources
3. Providing computer-mediated communication using automated response systems
4. Having campus portal access to institutional processes and resources

What is distinctive about these elements is that they are delineated according to the following differing characteristics of delivery technologies. Each element offers flexibility in terms of time, place, and the pace at which people can learn using the materials. The materials that are developed for WBE are highly refined and involve advanced interactive delivery. Through this approach, it is possible to reduce the institutional variable costs to a low figure (Taylor, Kemp, & Burgess, 1993), thus making the WBE cost effective. Therefore, when compared to other forms of education delivered by distance, WBE is likely to be less expensive; provide students with better quality learning experiences; be more effective in pedagogic terms; and allow for more efficient administrative services. Such a form of learning allows institutions to become "fast, flexible and fluid" (Taylor, 2001, p. 8). It provides the opportunity for students from any global location to engage in a highly personalized educational experience at a relatively modest cost.

Taylor categorized the five stages of the development of distance education as shown in Table 1 as follows: the Correspondence model that is based on print technology; the Multimedia model that is based on print, audio, and video technologies; the Telelearning model that is based on the applications of telecommunications technologies to promote

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