Chapter 8
Investigating Higher Education and Secondary School Web-Based Learning Environments Using the WEBLEI

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ABSTRACT

Classroom learning environments are rapidly changing as new digital technologies become more education-friendly. What are students’ perceptions of their technology-rich learning environments? This question is critical as it may have an impact on the effectiveness of the new technologies in classrooms. There are numerous reliable and valid learning environment instruments which have been used to ascertain students’ perceptions of their learning environments. This chapter focuses on one of these instruments, the Web-based Learning Environment Instrument (WEBLEI) (Chang & Fisher, 2003). Since its initial development, this instrument has been used to study a range of learning environments and this chapter presents the findings of two example case-studies that involve such environments.

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INTRODUCTION

In 2008, the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA, 2008), released the “Melbourne Declaration on Educational Goals for Young Australians”. Information and communication technology (ICT) was identified as a learning area and the Declaration makes the following points pertaining to ICT:

Rapid and continuing advances in information and communication technologies (ICT) are changing the ways people share, use, develop and process information and technology. In this digital age, young people need to be highly skilled in the use of ICT. While schools already employ these technologies in learning, there is a need to increase their effectiveness significantly over the next decade (p. 5).

Successful learners are...creative and productive users of technology, especially ICT, as a foundation for success in all learning areas (p. 8).

The Declaration also points to the need to build solid foundations for the future. For this to occur, learners need to be immersed in learning environments that actively promote a yearning for learning. The Declaration views ICT as critical in this foundation building process:

As a foundation for further learning and adult life the curriculum will include practical knowledge and skills development in areas such as ICT and design and technology, which are central to Australia’s skilled economy and provide crucial pathways to post-school success (p. 13).

The expectations highlighted in the Melbourne Declaration mirror the underlying rationale of education policies in many countries including international agencies such as the UN and OECD (Daanen & Facer, 2007). Given the importance of digital technologies in education, it is imperative that as educators we develop our understanding of technology-rich learning environments.

Learning environments have been studied since the 1930s using a range of learning environment instruments. This chapter focuses on one of these instruments, the Web-based Learning Environment Instrument (WEBLEI) (Chang & Fisher, 2003). It is an instrument (questionnaire) that was developed to study students’ perceptions of web-based learning environments. Since its initial development, this instrument has been used to study a range of learning environments and this chapter presents the findings of two example case-studies that involve such environments.

BACKGROUND

The Study of Learning Environments

A learner is constantly interacting with his or her learning environment. In 1930, Lewin proposed the Lewinian formula, $B = f(P,E)$. This formula hypothesizes that human behavior ($B$) is a function of the personal characteristics of an individual ($P$) and his or her environment ($E$) (Fraser, 1998). Since an individual is always interacting with his or her environment, observed behavior is a result of the combined effect of the interaction between variables $P$ and $E$. This hypothesis has since generated considerable interest and formed the basis of further research in various situations where human behavior is demonstrated.

In an educational setting, a learner is constantly interacting with an array of variables, such as teachers, peers, physical settings, subject materials and a cluster of factor(s) unique to different learner(s). The success of research initiatives in this field has relied heavily on the development of economical, reliable and valid learning environment instruments (questionnaire), which quantify some of these variables from a student’s perspective. Two psychologists (Herbert Walberg and
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