

Chapter 4.9

Synchronous Hybrid E-Learning: Teaching Complex Information Systems Classes Online

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ABSTRACT

An empirical analysis in the form of a pilot study was conducted to compare a complex information technology course taught in a synchronous hybrid e-learning environment with one taught in a traditional classroom. The aim of the pilot study was to explore whether virtual learning environments (VLEs) are ready for teaching complex courses. Three courses taught during the summer semester of 2006 were used for the study; the results indicate the promise of synchronous hybrid e-learning for complex courses. Self-efficacy and satisfaction were also examined, and no differences were found between students

in the two learning environments. Directions for future research were proposed to further evaluate synchronous hybrid e-learning environments.

INTRODUCTION

Advances in technology have increased the popularity of virtual learning environments (VLEs) in both the educational arena and corporate world (Alavi, Marakas, & Yoo, 2002; Dagada & Jakovljevic, 2004). VLEs are defined as “computer-based environments that are relatively open systems which allow interactions and encounters with other participants and providing access to

a wide range of resources” (Piccoli, Ahmad, & Ives, 2001, p. 402; Wilson, 1996). Advances in information technology (IT) continually expand the capabilities of VLEs (Seng & Al-Hawamdeh, 2001).

VLEs can be characterized by six dimensions that distinguish them from traditional classrooms and computer aided instruction: time, place, space, technology, interaction, and control (Piccoli et al., 2001). The instruction delivery when defining the six dimensions by Piccoli et al. (2001) is asynchronous delivery. The definition for two of the dimensions, time and control, in a synchronous (real-time) virtual learning environment (SVLE) is different from that of an asynchronous virtual learning environment (AVLE). Research still remains to uncover the effectiveness of the environments and also to determine whether the differences in these environments alter the learning experience of the student (Alavi & Leidner, 2001; Alavi et al., 2002; Hodges, 2005; Seng & Al-Hawamdeh, 2001).

Prior research indicates that students are less satisfied when using VLEs for unfamiliar (complex) topics like databases and more satisfied using VLEs for more familiar (non-complex) topics like word processing (Piccoli et al., 2001). With the advances made in VLEs, this study aims to answer the research question: Are virtual learning environments ready for teaching complex subjects? This research presents the findings of a pilot study conducted to compare a VLE using a synchronous hybrid e-learning environment with a traditional class setting for a complex course. A synchronous hybrid e-learning environment is one where portions of the interaction among the participants take place virtually in real-time and the balance of the class is conducted face-to-face. The format for the course is a mixture of online and in-class instruction. Hybrid learning is also referred to as blended learning. The next section presents an overview of the research on hybrid e-learning followed by a discussion of

the pilot study, the results, and suggestions for future research.

BACKGROUND

Hybrid E-Learning

Technology mediated learning (TML) has been the focus of researchers for some time, and it has been noted that research still lags behind practice. Overall, there is a need to gain a deeper understanding into the effectiveness of the use of technologies for online learning (Alavi & Leidner, 2001; Alavi et al., 2002). To address this issue, researchers recently studying TML have turned their focus toward understanding the effectiveness of different pedagogical approaches in different content areas; as a result, there have been a number of studies examining hybrid approaches. A hybrid approach to learning with TML involves providing content in a variety of formats with a mixture of online and in-class instruction.

Current research provides a mixed response on the subject of advantages and disadvantages of using a hybrid approach to teaching. Webb, Gill, and Poe (2005) examined the differences between pure versus hybrid approaches to teaching using the case method and found that students' online discussions may enhance learning in case methods when taught using a hybrid approach. In a comparison of traditional and technology-assisted instruction methods in eight sections of a business communications class, where live versus hybrid formats were compared, an improvement in writing skills was found in students who participated in the hybrid course, particularly for those whom English is a second language (Sauers & Walker, 2004). McCray (2000) found that courses that combine online learning with the traditional classroom can help students to become more engaged in rich classroom interactions by appealing to different learning styles through variety in content delivery.

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