Chapter 33
Adapting Three-Dimensional-Virtual World to Reach Diverse Learners in an MBA Program

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ABSTRACT

The purpose of this chapter is to adapt instructional strategies to virtual world learning environment in Second Life and reach more diverse learners with different learning styles. Part of the approach will focus on learners who are visual as compared to auditory and kinesthetic. Additionally, the approach will examine how changes in pedagogical methods can be used to reach diverse learners with different learning styles in virtual learning environments. The major topics address how styles of learning were considered in designing an instructional strategy and how differences in learning styles were rationalized via learning in a virtual world. Thus student success can be correlated to teaching pedagogy, and hence modified to reach diverse learners. Suggestions are included for adapting a cognitive process combined with multimedia design principles in a virtual world.

INTRODUCTION

Many researchers have been written about different learning styles of students and how to adapt instructional styles to reach diverse learners (Kolb, 1984; Felder & Silverman, 1988), but few have addressed the issues related to instructional styles in virtual world environments (Burgess, Slate, Rojas-LeBouef, & LaPrairie, 2010). When focusing on learners which are visual as compared to auditory and kinesthetic learners, the authors can see how changes in pedagogical methods in using technology can be used to reach each student, regardless of their learning style.

This research has also led to the identification of the three specific types of learning: kinesthetic, visual, or auditory/verbal. These differences in learning styles were found to be significant in the early work by Felder (Felder & Silverman, 1988; Felder & Brent 2005; Litzinger, Lee, Wise, & Felder, 2007). Though other researchers have expanded the field, we have chosen to begin

with this basic approach to learning. These early studies focused on understanding differences in the way in which engineering-students process information. Learning styles were described by the cognitive, affective, and psychological behaviors of how students learn; their approaches to learning looked at three ways to engage in learning: a surface approach (rote memorization), a deep approach (exploring and questioning), or a strategic approach (with tactics to earn the desired final grade); and intellectual development (with the highest level defined as that which follows the scientific method). Models such as the Felder-Silverman Model (first developed in 1988) looked at a forty-four item forced choice instrument to assess engineering-students' preferences. Their work indicated a mismatch between learners and pedagogy:

Sixty-three percent of the undergraduates were sensors, while traditional engineering instruction tends to be heavily oriented toward intuitors, emphasizing theory and mathematical modeling over experimentation and practical applications in most courses; 82 percent of the undergraduates were visual learners, while most engineering instruction is overwhelmingly verbal, emphasizing written explanations and mathematical formulations of physical phenomena over demonstrations and visual illustrations; and 64 percent of the students were active, while most engineering courses other than laboratories rely almost exclusively on lectures and readings as the principal vehicles for transmitting information. (Felder & Brent, 2005 p 61-62)

While most of Felder's work focused on undergraduate engineering students, similar outcomes were found in an online marketing course at the graduate level (Belasen & Rufer 2007). While the Felder-Solomon Index of Learning Styles was not used to determine the actual learning styles of the students in the analysis of MBA marketing students, student performance changed significantly with changes in pedagogy that incorporated

visual, audio, and kinetic learning as compared to performance based on just visual or visual and audio learning.

Application of Theory

The pedagogy under evaluation in this chapter was part of an MBA program developed for adult learners through a web instructional management system (Belasen & Rufer 2007; Belasen & Fortunato, 2000). This MBA is unique in that it controls for prior learning (either experiential or academic) of students through an assessment process. This assessment process is a series of timed exams, which align with the course structure. The courses are designed to be modular, through which students can demonstrate progressive learning. Through these exams, students coming into the program can earn credit for their prior learning, and hence only engage in the parts of a course in which they have no prior learning at the graduate level. In addition to earning credit, another benefit of this type of assessment is that students in a given section of the course will be fairly equal in their knowledge of the subject. Thus the diversity of the learners seems to be more from their learning styles and abilities than from any prior knowledge in the field.

The work presented here illustrates how understanding the diversity of learning styles can also be applied in developing pedagogy for MBA students in this web-based platform. Early work of Boyatzis and Kolb (1995) suggests that skills are an integrated transaction between the person and the environment. However learning occurs when there is an interaction between the structures of knowledge and a cognitive process. Consistent with these findings, the Felder and Silverman (1988) studies find that the cognitive process of learning is related to the learning style of the individual (Graf, Viola, Leo, & Kinshuk, 2007; Felder & Brent, 2005; Litzinger, Lee, Wise, & Felder, 2007; Ruttun, 2009). Thus if we look

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