

Chapter 13

Virtual World Classrooms: Future Directions for Learning

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ABSTRACT

This chapter provides a comprehensive case study to demonstrate the longitudinal development of online pedagogy for higher education through a lens of interior design. The chapter presents constructivist theory as a guiding pedagogical framework for the creation of learning environments within Second Life (SL) virtual reality. Details of the rigorous process of incorporation of SL, as an enhancement to a traditional course with a laboratory component, is presented to validate the integrity of the scholarship of teaching and learning undertaken in the exemplar case study. The concluding components of the chapter review the iterative process of course outcome evaluation compared to course and accreditation standards to further demonstrate the educational value of virtual reality as an environment for learning.

INTRODUCTION

NMC Horizon Report notes that new technologies for learning reflect the realities of our time globally as well as within higher education (Johnson et al., 2013). The Horizon Report advisory board extensively reviewed the literature and other sources to establish technological trends that advance student learning in higher education (Johnson et al., 2013). The resultant ranked list denotes that “openness”

is a major factor for technology in education. The term “openness” lacks a clear definition that is consistent across educational realms. However, a consistent shared meaning of “openness” is that there is transparency to access of content and interactions within technological environments that advance student learning (Johnson et al., 2013). The advisory board’s findings note that the online learning environment augments traditional classroom instruction and “The workforce

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demands skills from college graduates that are more often acquired from informal learning” (Johnson et al., 2013, p. 7). Further, the role of the educator continues a rapid transition within the online environment as more technology is introduced which elevates the potential for collaborative learning and the analysis of data that strengthens formative and summative evaluation of learning (Johnson et al., 2013). The Second Life environment met all these criteria for an Interior Design program, which integrated the virtual environment of Second Life into a traditional educational framework.

This chapter describes the application of virtual reality (VR) through Second Life (SL) as a case study from a freshman foundations course in interior design, one of the first core courses in the program. In the interior design case study, process evaluation was used to determine outputs and impacts of SL as an educational environment, learning strategy, and means of formative and summative learning. A qualitative, multi-method approach was adopted using constructivist theory as a guiding framework. The specific aim of the research was to evaluate the process of creating a hybrid course in interior design, using both SL and traditional teaching strategies, to instruct 348 students over multiple semesters. Incorporating a virtual learning environment into an existing, traditional (brick and mortar) classroom experience allowed for interactive evaluation and thus development of critical thinking and marketing skills. It was hypothesized that applications in SL advance student learning; that interior design skill sets are clearly demonstrated through use of the virtual environment; and that SL virtual reality is an effective “open” adjunct in preparing students for the profession of interior design.

The foundations course described below focuses on the elements and principles of design concepts required to develop environmentally safe and aesthetically pleasing interior spaces, and is the first in an eight-semester developmental sequence of required courses leading to a bachelor’s degree in interior design. The program in

interior design is fully accredited by the Council for Interior Design Accreditation (CIDA), the National Kitchen and Bath Association (NKBA), and the National Association of Schools of Art and Design (NASAD). Standards set by CIDA and others provide a framework to evaluate the use of SL as an informal teaching strategy in preparation of a skilled workforce (CIDA Standards Committee, 2011; National Association of Schools of Art and Design, 2013; NKBA Guidelines Committee, 2013).

In the exemplar course reviewed for this case study students must demonstrate: 1) skills in rendering basic draft plans in multiple dimensions, 2) mastery in the interrelationships between form and function, and 3) precision in model building. These goals are fundamental to all beginning interior design courses. What sets the case study apart is not content but the virtual environment in which the products (drawings, models, and peer-review) are developed and presented. The SL environment then serves as an area where the access to content and to peer interactive learning becomes transparent. SL distinctly empowers students to engage in ongoing, formative evaluation, freeing them of time/space constraints associated with traditional classroom attendance. Findings from the case study indicate that student attainment of course goals and objectives is strengthened by the use of SL, as a form of VR. Learning through use of VR is validated in the literature as following the tenets of constructivist theory. Collaborative learning within VR can be measured in formative and summative metrics which validate that industry standards for a prepared workforce are being met using the technology.

CONSTRUCTIVIST THEORY AND LEARNING IN VIRTUAL REALITY

Constructivist theory supports the concept of active experiential learning, allowing the learner to connect existing knowledge to create new knowledge, and has outcomes to improve reasoning and

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