Chapter 4
Using the Interaction–Combinations Integration Model to Explore Real–Life Learning in User–Created Virtual Worlds

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ABSTRACT

User-created virtual worlds are emerging technologies with rapidly growing acceptance in education. Of the various reported educational uses of these virtual worlds, the focus of this chapter is on virtual worlds for constructivist learning activities, because this use has application to many real-life courses and has the potential to transform teaching and learning. To assist educators with recognizing and understanding virtual world learning activities, Antonacci & Modaress (2005, 2008) developed the Interaction-Combinations Integration model. However, this model has not been studied in actual virtual-world learning practice. Using a case study method, this chapter examines the usefulness of this model to organize and describe actual virtual world learning activities, provides additional learning activity examples, and describes what was needed to implement and conduct these learning activities.

INTRODUCTION

User-created virtual worlds, such as Second Life (Linden Lab, 2010a), ActiveWorlds (Activeworlds Inc, 2010), and There (Makena Technologies, 2010), are emerging technologies with rapidly growing acceptance in higher education (New Media Consortium, 2007). These virtual worlds are 3D simulated environments created by their users, and simultaneously played by thousands of people around the world.

Unlike traditional computer games and simulations, where people interact with a preprogrammed environment, user-created worlds allow their users to create their own world and interact with it and other users in it. This ability to create and interact with your own simulated world offers some exciting possibilities for teaching and learning.

BACKGROUND

Educators on the Second Life Educators List (Linden Lab, 2010b) have reported using Second Life in three primary ways. Some faculty are having students study the virtual world itself as part of a course on gaming, online culture, or virtual world technology. Though appropriate for these courses, this use has limited application to the majority of real-life courses.

Other faculty are using virtual worlds as a communication medium. This includes in-world lectures and presentations, online discussions or chats, student-built displays instead of traditional reports, and machinima which is real-world filmmaking from the virtual world engine. While this use of virtual worlds is still being developed and explored, other communication media exist which may be more effective and efficient, and this use is more of a translation of existing teaching practices to a virtual world environment, instead of a transformational use that changes teaching and learning practices to leverage the unique affordances of virtual world technology.

Finally, faculty are using virtual worlds for constructivist learning activities. By constructivist learning, we mean a theoretical view of learning where knowledge is constructed by the learners as they actively problem solve in an authentic context, as opposed to more traditional instruction where knowledge is seen as an object transmitted from teacher to learner (Jonassen, Peck, & Wilson, 1999).

Of those three reported uses, the focus of this chapter is using virtual worlds for constructivist learning activities. This use has application to many real-life courses instead of a limited number and has the potential to transform teaching and learning rather than simply translate existing classroom practices, such as lectures, to the virtual world.

However, considering the new and emerging nature of virtual world technology, it can be challenging to recognize these educational possibilities and enable educators to integrate virtual world learning activities into their real-world courses. To confront this challenge, Conklin (2007) identified and described more than 100 possible educational uses of Second Life. Her list included numerous ideas for Art, Business, Computer Science, Education, Law, Mathematics, Psychology, Religion, Science, and Sociology.

As an alternative to describing specific educational activities, Antonacci and Modaress (2005, 2008) developed the Interaction-Combinations Integration model to help educators connect real-life course topics to potential virtual world learning activities. In their model, virtual worlds, like the real world, consist of people and objects. Those two things can interact in three possible combinations: people-people, people-object, and object-object. Much of what is taught can be categorized into those three interaction combinations. Once an educator has identified what interaction type corresponds to a course topic, the model then suggests several virtual world activities for that interaction type.

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