Chapter 35
An Entertaining Game–Like Learning Environment in a Virtual World for Education

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ABSTRACT

This chapter explores the possibilities, benefits, and difficulties of developing game-like virtual environments for education. The goal of this paper is to review the background of game-like environment and impact of game-like environment on learning, discuss the differences on teacher-free and teacher-leading virtual learning environment, and provide examples of game-like environment in the virtual world for education. Finally, this chapter also provides suggestions to readers who would like to create game-like virtual environments for education.

INTRODUCTION

This article explores the possibilities, benefits, and difficulties of developing entertaining game-like virtual environments for education (Han, 2015). The developers are five instructors taking the same class—Visual learning in 3D animated virtual worlds—at the University of British Columbia. The developers are instructors of different subject areas: elementary school level education, leadership education, design education, media education, and museum education. Because of the diversity of these developers, the designs of their virtual learning environments were very different. These developers used their own virtual learning environment design, construction, and teaching demonstration experience to explore the use of game-like environments for education in virtual worlds.

BACKGROUND: LITERATURE REVIEW ON GAME-LIKE ENVIRONMENT

According to Burbules (2006), rethinking the virtual as an educational concept poses a sharp contrast to much current practice by highlighting the centrality of choice, decision, and exploration as important dimensions of learning. Therefore, rather than seeing learning spaces as "delivery systems," it is important to view them as potential sites of collaboration and communities of learners (Rockinson-Szapkiw, 2014; Lounis, Pramatari, & Theotokis, 2014). These perspectives on virtual learning spaces lead us to think about the potentials of education and to ponder how the rising new technologies are being thought about and used in education.

According to Dickey (2005), "educational MOOs (Multiple User Domains Object Oriented) promote an interactive style of learning, collaboration opportunities, and meaningful engagement across time and space" (p. 440). The 3D virtual world is full of educational possibilities (Abbattista, Calefato, De Lucia, Francese, Lanubile, Passero, 2009; Burbules, 2006; Chen, Slau, & Nah, 2008; Dickey, 2005a, 2005b; Han, 2013; Han, 2011); languages, international business, science, math, and art are taught in virtual worlds. Everything students do in the virtual world can be a learning experience. Students in the virtual world are learning through their visual sense; they are seeing and learning from the objects made by other virtual world residents. Moreover, students can travel to different locations and interact with people from other cultures. This kind of learning by doing or learning by seeing fosters self-directed learning (Dewey, 1934; Garris, Ahlers, & Driskell, 2002).

Impact of Game-Like Environment on Learning

We live in a highly technological society that relies on technology from waking up in the morning to succeeding at work to entertaining ourselves in our leisure time. To be a successful member of such a society, students must *be trained* in the use of technology throughout the educational system (Siang & Rao, 2003).

Through playing, we can socialize and observe the world around us, helping us learn to interact with others and understand the world (Han, 2015). Playing provides stronger motivation and experience for learning. From a psychological perspective, a certain amount of excitement is conducive for learning as it potentially pushes what we see and learn into long-term memory (Linehan, Kirman, & Roche, 2014).

Students learn more effectively in an entertaining environment if that environment acquires gaming aspects and educational value simultaneously (Jarvin, 2015; Blumberg, Altschuler, Almonte, & Mileaf,

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