Chapter 5.5
Enhanced Interaction in Mixed Social Environments

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ABSTRACT

We introduce the term 'mixed social environments' as a strategic learning construct to augment student interaction when utilizing virtual world environments such as Second Life in the classroom. While an increasing number of institutions are investigating the use of virtual world environments for enhanced learning, at present there are at least three major areas that are underdeveloped: interdisciplinary research, documentation of best practices, and exploration of the use of mixed social environments. In the spring of 2007, a new interdisciplinary research seminar addressing these aspects was offered at a large American university. We present an overview of the resultant learning artifacts, outcomes, and research questions in hopes of helping to inform best practices, expand interdisciplinary research, and assist in the design of future mixed social environments for enhanced learning.

INTRODUCTION AND CONTEXT

For the purposes of this chapter, games and other interactive graphical scenarios that consist of multiple environments (compared with a single-focus virtual reality simulation such as flight training in a virtual cockpit or emergency room training inside a simulated hospital) are referred to as virtual world environments (VWEs) due to the large "world-like" scale of the virtual reality they create. Games are broadly defined in the literature and may cover a wide range of educational purposes. User-driven VWEs (pronounced "vyoo-eez") can often be considered games and have great potential for teaching and learning (Foreman, 2003). As a VWE, Second Life (SL) affords a sense of social interaction, visual indication of level of participation, and 3D models for instruction or simulation—all factors that can be utilized for enhanced learning environments. This potential flows across various academic disciplines. In spring 2007, a new course utilizing SL entitled Interdisciplinary Research Seminar was offered as a collaborative effort between a profes-

sor of biomedical engineering and a professor of digital media at the University of Florida's Digital Worlds Institute.

This chapter frames a context for the course from the gaming, virtual reality, and simulation literature; provides an overview of the learning artifacts produced and research developed in the course; and suggests potential future directions for researchers and practitioners who are interested in exploring mixed social environments (MSEs) as a means of merging traditional and virtual classroom spaces. We define a MSE (pronounced "mis-ee") as a physical space wherein multiple scales of screen display and simultaneous points of view of a shared VWE can be seen, heard, experienced, and collaborated upon by persons physically present in the space, in addition to remote participants. Both personal and group displays are integrated into the space in such a way as to allow simultaneous social interaction among those in the physical space of the room and multi-perspective displays of the participants' virtual interaction in the VWE.

GAMES IN EDUCATION

A succession of theorists and philosophers have found 'games' and 'play' difficult concepts to define (Huizinga, 1980; Salen & Zimmerman, 2004; Wittgenstein, 1972). Equally challenging is the understanding of the processes that assist game-play. Games in general can be defined in surprisingly numerous ways, often changing the way games are used and perceived (Wittgenstein, 1958). Some popular definitions define games as a series of choices or as rule-based play.

To refer to different types of games, current terminology utilizes terms such as: computer games, video games, serious games, game-based learning, massively multiplayer online role-play games (MMORPGs), massively multiplayer online games (MMOGs), persistent games, massively multiplayer online first-person shooter (MMOFPS), educational games, game-based learning, instructional games, sim games, gamesims, electronic simulations, virtual reality systems, training simulations, or simulators. Gaming environments now utilize diverse resources, including streaming video and audio, multiple-user interactivity, simulations of real-world circumstances, and immersive non-linear exploratory environments (Aldrich, 2004, 2006).

Since we are primarily interested in the uses of electronic games in education, we will use a definition that focuses on learning: "applications that can use the characteristics of video and computer games to create engaging and immersive learning experiences for delivering specified learning goals, outcomes and experiences" (de Freitas, 2006, p. 15). These uses tend to cluster around the activities highlighted in Table 1.

Table 1. Uses of games for learning (de Freitas, 2006)

Selected Uses of Games	References
To motivate and engage learners, e.g., underserved learner groups (e.g., with low literacy/language levels)	Amory et al., 1999; de Freitas et al., 2006; Garris et al., 2002; Gee, 2003; Mitchell & Savill-Smith, 2005
For skill or part-task rehearsal and practice, e.g., literacy and numeracy skills	de Freitas et al., 2006; Delanghe, 2001
To provide therapy for pain relief and cognitive difficulties	Pelletier, 2005c
To role-play particular jobs and professions in advance of real-life practice	Aldrich, 2004, 2006; Maharg, 2006
To empower learners as authors and producers of multimedia, mixed media, and game-based content	Pelletier, 2005b; Druin, 2002; Dickey, 2005

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