Chapter 3
Relating Pedagogical and Learning Space Designs in Second Life

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ABSTRACT
Second Life is a three-dimensional virtual world which is being employed by educational institutions and training organizations to support teaching and learning. However, there is little guidance as to how 3D learning spaces should be designed to correspond to the learning activity and the learning context of the student, such as students’ skills and the nature of the program (e.g. distance education, blended learning). This chapter describes an empirical study involving Second Life educators, designers, and students, and derives guiding principles for the design of learning spaces in 3D virtual worlds. It is hoped that the guidance and examples described in this chapter will support educators and designers in designing 3D learning spaces and activities that foster students’ socialization, informal learning, collaboration, and creativity. Although, the empirical study focused on Second Life, it is hoped that the results will be applicable for 3D virtual worlds in general.

INTRODUCTION
Three-dimensional virtual worlds, also called synthetic worlds, are multimedia, simulated environments, often managed over the Web, which users can ‘inhabit’ and interact via their graphical self-representations known as ‘avatars’. In a 3D virtual world, the users, represented as avatars, experience others as being present in the same environment even though they may be geographically distributed. Users converse in real time through...
gestures, audio, text-based chat, and instant messaging communication (e.g. Meadows, 2008).

Three-dimensional virtual worlds support synchronous communication and collaboration more effectively than 2D web-based environments: by extending the user’s ability to employ traditional communication cues of face-to-face interactions, such as gestures and voice; and having a sense of presence and a sense of place in a way that 2D (web-based) environments do not (Bronack et al., 2008b). There are several 3D virtual world platforms, such as Active Worlds, OLIVE, Protosphere, Second Life and Web Alive (Wilson, 2009). In this chapter, the focus is on Second Life (http://www.secondlife.com) and its role in education. Unlike massively multiplayer online role-playing games, such as World of Warcraft that have a scripted plot or storyline, Second Life is not a ‘game’ per se. The content and narrative in Second Life is constructed and owned by the residents (users) of Second Life, and Linden Labs, the company that created Second Life, provides the infrastructure, hardware and software to support Second Life.

Three-dimensional virtual worlds such as Second Life offer new opportunities for educators to teach in immersive and creative spaces. However, educators face a number of challenges regarding the design of activities and design of 3D learning spaces. In terms of theoretical underpinnings, moving from established transmissive theories of learning such as behaviorism and cognitivism to more participatory ones such as social constructivism can be challenging. Also, the design of 3D learning spaces and, particularly, the realism and non-realism of learning spaces and the influence of learning spaces on student learning and engagement raise interesting issues for educators and learning space designers.

In the DELVE project (Design of Learning Spaces in 3D Virtual Environments, (JISC, 2008)), one aim was to investigate the relationship between the designs of learning activities and the designs of learning spaces in Second Life. An empirical study involving Second Life educators, designers, and students was conducted to investigate their experiences with, and perceptions of learning space designs in Second Life.

This chapter focuses on the flexibility and scope that 3D virtual worlds provide in terms of designs of learning activities and learning spaces. It addresses the following research questions from the DELVE project:

**Q1:** What is meant by a ‘learning space’ in Second Life?

**Q2:** How does the pedagogy influence the design of learning spaces, and vice versa?

**Q3:** What kinds of learning activities are currently being carried out in Second Life?

**Q4:** Does the level of visual realism of a learning space influence the experiences of a learning activity, and why?

The analysis in this chapter is presented as answers to the research questions listed above. Through empirically grounded data, this chapter will highlight the importance for educators to match the design of learning activities with the designs of learning spaces for a positive student experience. It is hoped that the guiding principles and vignettes presented in this chapter will provide useful guidance and triggers for ideas to educators and designers who are planning to set up learning activities and spaces in Second Life. Although the empirical investigations were carried out in Second Life, it is hoped that the results will be applicable to other configurable 3D virtual worlds.

**BACKGROUND**

With the emergence of social software tools such as blogs, wikis, podcasts, social networking sites, social bookmarking sites, 3D virtual worlds and MMORPG and their use in education, there is an increasing trend towards designing learning activities that facilitate collaborative learning through...
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