

Pedagogy and Learning in the Virtual World of Second Life®

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INTRODUCTION

Second Life® is a computer-based 3-D virtual world environment that is accessible over the Internet and that features massively user-created content. Second Life (SL) involves multiple users, called “avatars,” who create and interact in a spatially-organized ecology of virtual 3-D representations of people, space, time, motion, sound, objects, topography, and tools. First made publicly available in 2003 by Linden Lab®, this 3-D virtual world environment is an emerging convergence of technologies. It represents the robust creative nature of human-centered computing with a rapidly growing population from 100 countries around the world (Linden Lab, 2007). Open virtual world platforms such as SL (that are not games, although games may be played within them), are still in their infancy, and extensive research, development, and investment are on-going as critical challenges continue to emerge.

Yet educators are already able to create virtual classrooms, conduct classes, share virtual world teaching strategies, and design virtual research projects. Alongside the limitations of its current iteration, SL provides a complex system of affordances for learning, including synchronous interaction among real persons, an embodied sense of social presence, and virtual spaces where geospatially separated education practitioners are brought together to create situated learning environments. In particular, 3-D virtual world learning environments such as SL feature multiple channels for engagement, communication, collaboration, modeling, data visualization and simulation, sound and spatial relationships, language immersion, and opportunities for crossing physical, geographical, and even temporal boundaries.

In December 2007, SL reported 11,396,586 total residents, with resident defined as “a uniquely named avatar with the right to log into Second Life, trade Linden Dollars and visit the Community pages” (Linden Lab, 2007). Gartner, Inc. (2007) estimates that by 2012,

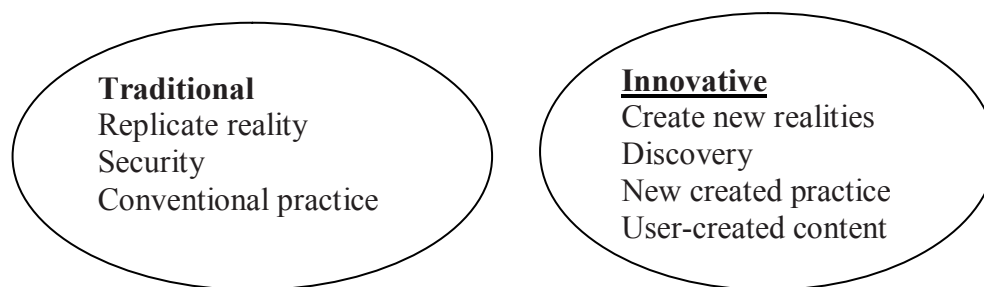
80 percent of active Internet users, including Fortune 500 enterprises, will have a “second life” in some form of 3-D virtual world environment. SL’s currency, the Linden dollar (\$L), is tied to the value of the U.S. dollar with exchange rates fluctuating between \$250-300 L per \$1 U.S. Virtual activity in SL includes major corporations, sports, politics, commerce, real estate, building design and construction, services, religion, culture, art, music, entertainment, museums, libraries, government, environmental studies, non-profit activity, international development, research and education. An estimated 200 universities and colleges have a presence in SL, and this article focuses on some of the issues surrounding that educational activity.

Transitional Issues in the Shifting Paradigm to 3-D Virtual World Environments

Online virtual worlds are still in their infancy, and some suggest their development is analogous to the development of the Internet in the early 1990s (Ward, 2007). Different perspectives on key issues have emerged during this transitional period that are specific to educational applications in Second Life and are concerned with how educational practitioners approach the 3-D virtual world (See Figure 1).

Briefly, from a traditional perspective, educational institutions approach entry into a 3-D virtual world with the intention to replicate reality so that buildings, classrooms, and curriculum are immediately recognizable. Also, given the existence of mature content in virtual worlds, security is a high priority and administrative control is emphasized. Finally, conventional pedagogy and curriculum design are favored. However, others critique the traditional approach for undervaluing the new functionalities of 3-D virtual world technology. The innovative approach emphasizes creation of new versions of reality that may not resemble an educational

Figure 1. Traditional and Innovative Perspectives on 3-D Virtual World Environments



institution nor be immediately recognizable as “Campus *n.*” Discovery and exploration are favored over security, classrooms are located in open fields with no seating (“sandboxes”), and rather than lecture, the class activity may involve teams of students taking a virtual field trip to the Sistine Chapel, gathering information, and later submitting their homework through a SL group chat space or by collaboratively creating 3-D Venn diagram sculptures to illustrate their analyses (user-created content).

There are two critical dimensions related to all emerging educational activity in SL. If we consider the (1) *function or purpose of the activity*, and (2) the *audience or user*, then there are reasonable instances when a traditional approach is warranted, such as with recruiting or development. For example, an institution may want potential students and donors to be able to visit a virtual campus in SL and to readily identify with its recognizable buildings. Security is relevant in this case to avoid embarrassing incidents or a misrepresentation of the safety of the actual campus. On the other hand, if the function or purpose of the activity is to actually conduct a class, then, quite simply, the very fact of virtual replications of actual buildings with doors, hallways, ceilings, and crowded classrooms may create navigation difficulties in SL for the audience, in this case the students. While sometimes useful, having students sit in a closed virtual space and listen to a prepared lecture clearly underutilizes the extensive 3-D functionality of the virtual environment.

Finally, there is the transitional issue of *experience in a 3-D virtual world*. Given the compelling sense of social presence and engagement reported by some users, an educator’s own experiential understanding gained from being active in SL (or lack thereof) influences their comfort level with one perspective or the other. Most educators working in SL are challenged by

the new affordances provided by a 3-D virtual world environment. A major difficulty is trying to imagine new pedagogical methods with old “habits of mind.” Freedom from the constraints of the real world’s physical laws creates immense opportunity for innovation, and a long-term challenge will be cultivating new ways of imagining in a 3-D virtual environment. Effective applications in SL will result from educators developing skillful mental flexibility and a deeper understanding of other perspectives, of underlying worldviews, of virtual artifacts, including new technologies, and of the special affordances of virtual space (Figure 2).

BACKGROUND

Underlying Second Life is the electronic network that is the Internet itself, or what Vinge (2006) refers to as “the creativity machine” because it provides massive coordinated processing of information for hundreds of millions of users (p. 411). An early look at an Internet-supported 3-D virtual world appeared in Neal Stephenson’s prescient novel *Snow Crash* (1992), and it described many of the virtual reality concepts in use today. Research is examining 3-D virtual reality, shared virtual environments, shared collaborative environments, and Massive Multiplayer Online Role Playing Games (MMORPGs), such as *World of Warcraft*, *Ultima Online*, and *Knight Online*. Much of the research on 3-D shared virtual environments has been limited to small groups of participants (Sonnenwald, 2006), or timed and coordinated events (Nilsson et al, 2001), or in isolated group environments (Spante et al, 2006).

The field of computer supported collaborative learning (CSCL) studies the use of technology to mediate collaboration among learners and to enhance their

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