



Virtual world teaching, experiential learning, and assessment: An interdisciplinary communication course in Second Life

Leslie Jarmon *, Tomoko Traphagan, Michael Mayrath, Avani Trivedi

The University of Texas at Austin, G2100, Austin, TX 78712, USA

ARTICLE INFO

Article history:

Received 2 May 2008

Received in revised form 14 January 2009

Accepted 17 January 2009

Keywords:

Virtual reality

Computer-mediated communication

Interdisciplinary projects

Interactive learning environments

Cooperative/collaborative learning

ABSTRACT

While many reports espouse the potential impact that 3-D virtual worlds are expected to have on teaching and learning in higher education in a few years, there are few empirical studies that inform instructional design and learning assessment in virtual worlds. This study explores the nature and process of learning in Second Life in a graduate interdisciplinary communication course in fall 2007. Literature suggests that 3-D virtual worlds can be well suited for experiential learning environments. In this study, the actual instructional effectiveness of Second Life as an experiential learning environment for interdisciplinary communication is empirically examined using mixed research methods of journal content analysis, surveys, focus group, and virtual world snapshots and video.

© 2009 Elsevier Ltd. All rights reserved.

1. Introduction

Gartner, Inc. (2007), a technology-related research and consulting firm, estimates that by 2012, 80% of active Internet users, including Fortune 500 enterprises, will have a “Second Life” in some form of 3-D virtual world environment. Although Gartner cautions companies regarding security issues and risk management, these virtual worlds are expected to have a large impact on teaching and learning in the very near future with pedagogical as well as brick-and-mortar implications (New Media Consortium and EDUCAUSE Learning Initiative, 2007). There has been a growing demand for empirical research studies that inform instructional design and practices in 3-D virtual worlds. This paper presents a study on how we utilized the computer-supported online 3-D virtual world environment of Second Life (SL) for an experiential project-based graduate course on interdisciplinary communication offered at the University of Texas at Austin in 2007. The purpose of our study was to answer four research questions:

- (1) How (when, how often and in what kinds of social situations) does learning occur in Second Life?
- (2) What types of learning do students experience often in Second Life?
- (3) Does learning in Second Life transfer to real life?
- (4) Do students perceive Second Life as instrumental in learning?

We first briefly summarize the research that suggests that using SL can be well suited for project-based experiential learning of interdisciplinary communication. We then describe the course itself and the SL project assignment. Next, we describe the research methods. Finally, we present our results and provide evidence indicating that students in the study received strong experiential learning benefits when SL was used to teach interdisciplinary communication strategies complemented by classroom activities. We conclude the paper by recommending two approaches for the instructional application of SL: project-based SL activities and a systematic team approach. This paper adds to the emerging knowledge base informing educators about how online 3-D virtual environments such as SL can be used effectively for teaching and learning.

Abbreviation: SL, Second Life.

* Corresponding author. Tel.: +1 512 232 3302; fax: +1 512 471 0596.

E-mail addresses: ljarmon@austin.utexas.edu (L. Jarmon), tomoko.traphagan@austin.utexas.edu (T. Traphagan), mmayrath@mail.utexas.edu (M. Mayrath), avani.trivedi@austin.utexas.edu (A. Trivedi).

2. Background and theoretical framework

Experiential learning theory places the *experience* at the center of the learning process and is based on the work of Dewey, Lewin, and Piaget (Kolb, Boyatzis, & Mainemelis, 2002). Kolb stated that experiential learning theory defines learning as “the process whereby knowledge is created through the transformation of experience” (1984, p. 41). Learners build deep understanding and expertise by cycling through the four steps of the experiential learning cycle: concrete experience, reflective observation, abstract conceptualization, and active experimentation (Kolb et al., 2002). Project-based instructional activities have been found to provide an effective setting for such experiential cycles (Leifer, 1996), and with the growing use of virtual worlds in higher education, researchers are exploring the potential of such environments for project-based instruction and online collaboration.

The literature examining the general characteristics of virtual worlds and their potential benefits for teaching and learning has collectively yielded a long list of positive capabilities. Kalyuga (2007) found that virtual worlds are highly interactive in that they provide dynamic feedback, learner experimentation, real-time personalized task selection, and exploration. Virtual worlds are also often purported to have other instructional benefits, such as allowing for creativity within a rich media environment, providing opportunities for social interaction and community creation, facilitating collaboration, increasing a sense of shared presence, dissolving social boundaries, lowering social anxiety, enhancing student motivation and engagement, and accommodating millennial generation learning preferences (Amichai-Hamburger & McKenna, 2006; Barab, Thomas, Dodge, Carteaux, & Tuzan, 2005; Craig, 2007; Dede, Clarke, Ketelhut, Nelson, & Bowman, 2005; FitzGerald, 2007; Gee, 2003; Kirriemuir & McFarlane, 2003; Lamb, 2006; McGee, 2007; Prensky 2006; Soukup, 2004). Open virtual worlds like SL provide an environment supportive of learning activities such as experimentation, exploration, task selection, creation, and dynamic feedback; and this supportive platform suggests that virtual worlds are likely to accommodate project-based experiential learning.

The use of virtual worlds for experiential learning is increasingly being examined by researchers (Chittaro & Ranon, 2007). Furthermore, built-in support within the SL virtual platform, especially the array of communication tools, provides opportunities for social interaction, collaboration, an increased sense of shared presence, partially dissolved social boundaries, and lowered social anxiety. Such an interactive environment suggests that a project team's internal and external communication is also likely to be fostered (Hamalainen, 2008; Monahan, McArdle, & Bertolotto, 2008). Similarly, as Jonathan Richter, research associate at the University of Oregon's Center for Advanced Technology in Education (CATE), has observed:

Therapists, soldiers, pilots, lawyers, business people, doctors, nurses, and teachers all normally engage in real life role play while learning the contexts and conditions particular to their professions during their days at the university or in training. Multi-User Virtual Environments (MUVes) like Second Life are uniquely suited media for developing role playing scenarios to engage learning, if we provide the right mix of opportunity and structure. Indeed, role playing in Second Life and other MUVes may represent perhaps one of the single most compelling educational opportunities for adults in the 21st Century. (SL transcript, Special Speaker Series in Second Life, International Society for Technology and Education, March 27, 2007).

As we focus on experiential learning, we find further support for the effectiveness of virtual worlds. Performative elements such as narrative, role play, improvisation, and other action-based activities that build on progressive steps or scaffolding activities have been found to foster experiential learning (Bateson, 1993; Taussig, 1993; Wertsch, 1985) and are also being utilized within SL and other virtual world environments. Monahan et al. (2008) asserted that the advent of 3-D virtual reality environments represents a shift from text-based online learning environments to more immersive platforms. Virtual reality is a 3-D computer simulation of a more natural environment than convention online learning contexts, and collaboration can be fostered more effectively. To investigate this, Monahan's research group developed a Collaborative Learning Environment with Virtual Reality (CLEV-R) where students can go to learn, collaborate, and interact with each other. In particular, Monahan et al. examined the design and usability of CLEV-R for supporting various learning tasks by providing virtual university spaces, such as a lecture room, but also informal areas for students to interact and develop relationships. In an evaluation of CLEV-R, a small number graduate students and educators carried out various tasks such as uploading a PowerPoint slide and using communication tools for a presentation. All subjects responded favorably to CLEV-R and agreed that it had potential for online education. Navigation in the virtual setting was found to be difficult for users with no experience in 3D computer games; however, 78% of the subjects felt a sense of community, and 100% reported being engaged and interested while using CLEV-R.

As an open virtual environment, SL has the capacity to include such experiential performative elements in salient ways. Burke argued that in playing everyday social roles and in imitating others' social roles, “the distinction between acting and play-acting, between real and make-believe, becomes obliterated” (1954, p. 254); and it can be anticipated that the experiences in avatar interactions in an immersive virtual world can have a direct relationship to challenges met outside of the virtual world itself (De Castell & Jensen, 2007) including, for example, vocational learning (Hamalainen, 2008). Project-based classes are currently being taught in SL that involve essential course content as well as “softer” types of learning, both of which will be discussed in the specific case presented here, interdisciplinary communication. A few classes that demonstrate the diversity of educational activities in SL and that offer core content include cultural anthropology, Spanish, library science, professional development, history, training for emergency personnel, literature, human reproduction, ecology, genetics, educational informatics, English, algebra, toxicology, music, and Japanese culture (SL transcript, Campfire Discussion for Experiential Learning, International Society for Technology and Education, March 27, 2008).

Real world, project-based learning activities provide opportunities for building bridges between education and experience (Barab et al., 2005) and demand an interdisciplinary approach to collaboration (Leifer, 1996). Virtual worlds may provide an effective environment for building such skills because of social and technological capabilities for engagement in social interactions with people from various fields across geographical distances. These capabilities suggest that SL may be an optimal environment for experiential learning and a potentially effective environment to use in a project-based interdisciplinary communication course where students must demonstrate their learning by creating a real life product through collaboration in a virtual world.

At the 2006 Second Life Education Workshop, Mason and Moutahir (2006) presented *The Global Outreach Model* for such collaborative activities. According to the authors, “The global outreach model is a service learning, project-based, educational experience where the stu-

Download English Version:

<https://daneshyari.com/en/article/349796>

Download Persian Version:

<https://daneshyari.com/article/349796>

[Daneshyari.com](https://daneshyari.com)