Chapter 8
Engaging Students in a Computer Diversity Course Through Virtual Worlds

Yvonne Pigatt
https://orcid.org/0000-0001-5103-5770
Community College of Baltimore County, USA

James Braman
https://orcid.org/0000-0001-6080-3903
Community College of Baltimore County, USA

ABSTRACT

Virtual world technology allows for an immersive 3D experience with rich content and interactive potential for students. Through this richness and interactivity, educators have abundant creative power to design and facilitate meaningful learning experiences and collaboration opportunities. In this chapter, the authors discuss one such initiative using Second Life as an educational space for a community college course activity to enhance student engagement. A brief literature review of the educational use of virtual worlds will be presented, which underpin our pedagogical methodology for the project framework. Focusing on a specific community college course titled "Diversity in a Technological Society," the course goals and project requirements will be discussed. The chapter concludes with a detailed description of the proposed methodology for the next phase, recommendations, and future work.

INTRODUCTION

Student engagement is one key component in the process of learning and often coincides with attaining learning outcomes (Carini et al., 2006). There are many techniques to engage students and to spark additional interest in course topics. Some methods are aimed at classroom activities, while others are more aligned as homework or outside activities for practice and discovery. Student engagement can be achieved through the gamification of activities (Domíngues et al., 2013), flipped classrooms (Roehl

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et al., 2013), augmented reality (Dunleavy et al., 2009), virtual reality (Putman & Id-Deen, 2019) and mobile applications (Arnone et al., 2011), which are just a few methods using technology to engage students through active learning. Selecting the technology that best supports student learning depends on the instructional content and core learning outcomes. Certain course topics demand extra focus on specific skill sets and skill levels, while others are designed to sharpen skills in a more general sense. Technology in these courses can greatly enhance an educator's ability to reach students and provide them with unique learning opportunities.

Within the community college environment, teaching a general education course can be challenging due to the diverse set of student skill levels, varied technology literacy, and course workload balance. This is compounded by differences in age and enrollment statuses compared to students enrolled in more traditional four-year institutions (Cohen & Brawer, 2003). Adding to this complexity are the many challenges faced when dealing with underprepared (Gabriel & Flake, 2008) or at-risk learners (Zheng et al., 2014). Reaching all students and keeping them engaged in the content and context of the class becomes increasingly complex and dynamic. Therefore, instructors need to be resourceful and open to change as new challenges arise. This also applies to the need to be resourceful and knowledgeable with and about technology.

With the many available technologies and web 2.0 sites available today, educators have a wide array of tools to use in the classroom. Social media for instance now permeates many facets of everyday life and social interaction. Society has grown accustomed to everyday reliance on many forms of digital information (Pew, 2009; Lenhart et al., 2010). However, some technologies do not work or fit well in some contexts, nor are they always appropriate for education. Using technology in the classroom poses its own set of problems and challenges. Instructors may not have knowledge about a particular technology, or even have the resources available. Computing resources, space and internet connectivity all pose potential problems. In some cases, students may be apprehensive of learning with a new technology or may have limited use of a particular resource outside of a school setting. While some schools may have open labs or computing resources available through the library, these can be a challenge to maintain or monitor since they are often outside of the instructor's domain of control.

Despite these challenges for this project, the virtual world of Second Life® (SL) was selected as the virtual world technology of choice. SL is a 3-dimensional (3D) virtual world created by Linden Lab that can be accessed through the Internet via a downloadable client application. Users are represented in this world through an *avatar*, where one can interact with other users, content, and explore their surroundings. This online world has seen a large influx of users over the last several years, with an estimated number of "residents" reaching over 57 million accounts worldwide (Linden Lab, 2018). It also estimated that there have been over 482,000 years of time spent in-world collectively. This immense amount of time has contributed to SL's richness in content and unique user experiences. There are many categories of virtual worlds other than SL, each can be classified by their technology, graphics, goals or specific design. Some worlds are designed to be very open-ended and creative, while other worlds are designed to be more game-like or specific for a particular age group. SL should not be generalized as a game in the traditional sense, but instead as an open collaborative space that lends itself to much potential.

Students are accustomed to working with interactive media for learning and using educational games. While SL itself is not a game, it does have several game-like qualities that work well in teaching certain types of content or topics. As students are often attracted by games and other forms of interactive media, SL is an intriguing medium to use. Some studies have shown that many users of games also enjoyed being immersed in a simulated environment (Yee, 2006). Following Csikszentmihalyi's research on