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## Academic Papers

# Experiencing student learning and tourism training in a 3D virtual world: An exploratory study



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## ABSTRACT

The virtual world of Second Life presents an opportunity to be an optimal educational platform by providing real-world simulations, social interactions, and collaborative spaces. Educators in travel and tourism fields have also begun to explore the potential of virtual learning in Second Life and take advantage of its effective virtual environment to obtain best results in the learning process. The main goal of the present study is to develop a research framework identifying the factors affecting student learning experience within a 3D virtual world by examining the applicability of the Self-Determination Theory and the construct of positive emotions. The data collection was conducted in April, 2011. The participants were recruited from an introductory PRTM course and a tourism marketing class in the Department of Park, Recreation and Tourism Management at a University in the Southeast region of the United States. From a theoretical point of view, this study represents an empirical application of self-determination theory that is a theoretical and practical framework to examine how the satisfaction of the psychological needs of autonomy and relatedness in a 3D virtual world context makes a contribution to intrinsic motivation. Additionally, the present study explores the role and significance of positive emotion in the context of virtual learning. For tourism educators, this study can be applied to build the connection between tourism education and virtual worlds in the development of how to construct engaging and interactive learning experiences to meet the expectations of learners.

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## 1. Introduction

The evolution of the Internet has had a tremendous impact on transforming educational processes, specifically with its enhanced interactivity, connectivity and convergence (Sigala, 2002; Cobanoglu & Berezina, 2011). With significant societal and industry changes, “tourism educational programs need to fundamentally retool and redesign... by changing the nature of what is taught and how it is taught” (Sheldon, Fesenmaier, Woebber, Cooper, & Antonioli, 2008: p. 63). Singh and Lee (2008) point out that for effectively preparing future tourism students, tourism educational institutions need to adopt and

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use the next-generation technology tools. They also suggest that in order to increase the effectiveness and efficiency in training and educating tourism students, information communication technology can provide the necessary tools to engage users by supplementing traditional classroom lecture with collaborative activity and interaction between faculty and students. Internet technology is also being integrated into tourism business training strategies by delivering training opportunities that enhance the skills and knowledge of personnel (Buhalis, 1998; Buhalis & Law, 2008). Collins, Buhalis and Peters (2003) suggest that the utilizing of information technology in training delivery for cost-efficient and flexible work arrangements is important for smaller tourism businesses because of the limited resources to send employees to expensive training courses.

3D Virtual worlds are presenting opportunities for creating interactive environments in an educational context as well. Eschenbrenner, Nah, and Siau (2008) stated that the nature of the 3D virtual reality technology is to provide students a potential environment to “become engaged in a simulated activity and collaborate in a dispersed setting” (p.91). Barab, Thomas, Dodge, Carteaux, and Tuzan (2005) suggested that the diversity of learning activities in the 3D virtual world provides an opportunity to build bridges between education and experience by mimicking real-world situations (Marcus & Braswell, 2006) and simulating realistic work experience (Alleyne, 2009). As Buhalis and Law (2008) suggest, virtual learning environments can be used to support classroom teaching, stimulate discussion, and facilitate course administration. Moreover, the social and technological capabilities of virtual environments present the possibility of collaboration from different fields across various geographical distances (Jarmon, Traphagan, Mayrath, & Trivedi, 2009).

Currently, one of the most popular and active 3D virtual environment platforms in education is Second Life, which was started in 2003. The founder of Second Life, Rosedale, stated that by 2008 more than 500 educational institutions were utilizing the virtual world of Second Life to provide classes and online learning, and more than 4000 educators had joined the Second Life mailing list (cited from Penfold, 2008). Mason and Moutahir (2006) claim that the emerging virtual environment development platform of Second Life offers the unique features of immersion, ease of use, wide availability and low barrier to entry for its use in education. Past studies (Baker, Wentz, & Woods, 2009; Boulos, Hetherington, & Wheeler, 2007; Huang, Backman, & Backman, 2010; Hsu, 2012) pointed out that in the virtual world of Second Life, not only have schools invested in creating virtual campuses, but companies have also presented potential uses in job training such as holding lectures (Harvard University's law school), arranging meetings and conferences (IBM, InterContinental Hotels Group), conducting new employee orientation (TMP Worldwide) as well new student orientation (Hong Kong Polytechnic University), hosting graduate student recruiting events (Clemson University), and creating simulation environments (Walt Disney Internet Group).

However, the increased use of the virtual environment as an educational and training tool is not occurring without controversy. Some scholars have argued that researchers need to be aware of a number of experience and capacity issues that have arisen as well as negative effects including the following: requiring advanced technology resources, appropriate training and orientation, and needing adequate time for familiarity with the environment (Eschenbrenner et al., 2008); limiting certain students who prefer to learn in a regular classroom setting with face to face communication (McGrath, 1998); experiencing dissatisfaction with web-based courses because of lack of interaction between instructors and students (Arbaugh, 2002); feeling isolation in online courses resulting from diminished interaction with others (Hay, Hodgkinson, Peltier, & Drago, 2004); and encountering virtual violence, assault, and sexual harassment in virtual learning environments as well as influences by disruptive players (Kluge & Riley, 2008).

In contrast, other scholars have suggested that positive effects can be derived from online learning environments such as providing opportunities for social interaction and engaging participation in virtual learning (Barab et al., 2005); offering a unique pedagogical environment for interactive experience, engagement, interactivity, and idea generation (Eschenbrenner et al., 2008); fostering students' motivation and learning of scientific inquiry skills (Dede, Clarke, Ketelhut, Nelson, & Bowman, 2005); allowing for creativity within a multi-media environment (Conway, 2007); teaching a multitude of skills of problem solving, and strategic thinking (Prensky 2006); and supporting experiential learning and global collaboration (Jarmon et al., 2009).

Taking such debates under advisement, it is clear that the 3D virtual world of Second Life can become an optimal educational platform for educators to provide real-world simulations, social interactions, and collaborative spaces. Educators in travel and tourism fields also have begun to explore the potential of virtual learning in Second Life and take advantage of its effective virtual environment to obtain best results in the learning process. For instance, at Johnson & Wales University, Mason and Moutahir (2006) presented a model of using Second Life to collaborate on and experiential education project called G.O. Morocco. G.O. Morocco in Second Life allows students to use their academic and intellectual skills to make a significant contribution to a social problem, and prompts students to discover an innovative technology and its applications in the travel and tourism industry. Similarly, Hong Kong Polytechnic University created a virtual campus in Second Life to explore the opportunity of teaching and learning in a virtual environment (Wang & Burton, 2012). Yet, as emerging virtual worlds have the potential to be used by tourism professionals and educators for providing interactive and meaningful learning experiences, little research has been undertaken to understand student learning experience and the motivational dynamic of learning in 3D virtual environments.

Past studies have applied Self-Determination Theory (SDT; Deci & Ryan, 1985; Ryan & Deci, 2000) as a theoretical framework for examining human motivational behavior. Recently, a small number of studies have validated the framework of SDT in the context of multi-user virtual environments, establishing that the satisfaction of psychological needs leads to sustained engagement and subsequently facilitates intrinsic motivation (Partala, 2011; Ryan, Rigby, & Przybylski, 2006;

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