Chapter 14
The Benefits and Unanticipated Challenges in the Use of 3D Virtual Learning Environments in the Undergraduate Media Arts Curriculum

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ABSTRACT

This chapter describes the benefits as well as the unanticipated challenges in engaging undergraduates in immersive experiences within the 3D virtual environment, Second Life. The chapter draws on trials of three undergraduate courses in which students attended virtual classes and undertook media-related activities in Second Life. International experts conducted synchronous virtual guest presentations in all three courses. Media arts students designed immersive games using Second Life tools and the final-year students created virtual portfolios. The findings from student evaluations suggest both benefits and challenges in the use of 3D virtual environments in the undergraduate curriculum. In discussing these findings, the author challenges assumptions about the readiness of 'Generation Y' students to adapt easily to such learning environments. The final section of thechapter outlines proposed strategies for addressing the identified challenges.

INTRODUCTION

The increasing academic interest in the use of Web 2.0 and 3D virtual learning environments in higher education can be attributed to several significant drivers. These drivers include the need to re-engage 'net generation' students (Tapscott, Lowry & Ticoll, 1998) in light of increasing rates of first-year attrition (Krause et al, 2005; Kift, 2008), the pedagogical affordances of constructivist environments that foster collaboration through situated learning activities (De Freitas & Neumann, 2009; Armstrong & Franklin, 2008; Thomas & Brown, 2008; Mason, 2007), and the changing literacies required of graduates entering new economy workplaces (Bruns, 2008).

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This chapter begins with a critical analysis of each of these drivers drawing on evidence from the literature. The potential affordances offered by Web 2.0 applications and 3D virtual learning environments in particular are outlined, as well as the challenges facing institutions and academics seeking to apply these technologies within the curriculum.

Case studies based on trials of three media arts courses in the 3D virtual environment known as *Second Life* are presented in the next section of the chapter. The case studies describe in detail the learning objectives of the courses, the nature of the learning activities undertaken in *Second Life* and the outcomes of student evaluations conducted at the end of the course offerings. The benefits of the 3D virtual learning experiences are described and the unexpected challenges reported by teachers and the students are discussed.

These case studies provide the foundation for the more fine grained analysis of the affordances and limitations of 3D virtual learning environments in teaching and learning discussed in the next section of the chapter. The chapter concludes with suggested strategies for mitigating the potential challenges identified in the preceding sections as well as recommendations for further research.

BACKGROUND

Students entering universities from 2005 onwards are said to represent a new generation of technoliterate 'Y-ers' (Krause et al, 2005). This generation, also referred to as 'Generation Y', 'Net Generation' (Tapscott, Lowry & Ticoll, 1998); 'Millenials' (Oblinger & Oblinger, 2005); 'Digital Natives' (Prensky, 2001) and 'Homo Zappiens' (Veen, 2004), have grown up with digital technologies and are said to display particular characteristics including the ability to multi-task, a desire for immediacy, preference for multi-modal learning (pictures, sound and video in addition to text), a need to be socially connected through networked activities, respond best to experiential activities and are interested in social issues (Oblinger, 2008).

It is also argued that our digital natives are entering university already equipped with skill in the use of a wide range of Web 2.0 applications such as wikis, social networking, folksonomy sites, blogging, pod- and vidcasting and 3D gaming. Not surprisingly, many educators are now turning to these technologies to re-engage their students in the face of growing concerns about student disengagement and high levels of attrition (Krause et al, 2005). 3D virtual environments such as *Second Life* have also attracted growing interest from educators who are keen to engage their students in a game-like environment that offers the potential for increased flexibility, enhanced collaborative opportunities and a safe environment for experiential learning activities. These environments are increasingly being used for a range of activities including presentations, discussions, role plays and simulations, historical re-enactments, games design, dramatic performances, creative arts and business modelling.

While the use of traditional virtual learning environments has been shown to enhance learning through the provision of flexible, just-in-time information and the exchange of knowledge (Wichert, 2002), it is evident that mere access to teaching materials is unlikely to engage our 'digital native' learners who respond best to multi-modal forms of delivery (Oblinger & Oblinger, 2005; Prensky, 2001). Furthermore, these environments are not sufficient to facilitate the development of students' deeper knowledge of and skills (Rouvrais & Gilliot, 2004) and are limited in their ability to capture the social dimension that characterises learning in the real world (Lombardi & McCahill, 2004).

On the other hand, 3D virtual environments such as *Second Life* enable learners to interact with information from a first-person perspective (Dickey, 2005) and offer unique opportunities for students to engage in the kinds of simulated learning experiences in fields as varied as health science