Chapter 16

Through the Looking Glass: Immersive Interfaces for Participant Engagement in Blended E-Learning Environments

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ABSTRACT

This chapter outlines current research profiling students and educators participating in and constructing immersive interfaces in blended e-learning settings. Multi User Virtual Environments (MUVEs) and real world settings augmented with virtual information can generate problem-solving communities where participants gain greater technical knowledge and skills through meaningful and frequent interaction. MUVEs can also generate technical innovation amongst students from diverse disciplinary backgrounds, provided students are encouraged to help each other and learn together. After detailing some false assumptions about computer literacy that can stifle meaningful exploration with new technologies in contemporary education, this chapter documents an exemplar involving extensive collaboration between students from different educational backgrounds with diverse technical competencies. The success of this initiative hinges on the willingness of educators to provide a shared learning experience where technology is used to facilitate increased student communication and offers a site for invention, informed critique, industry participation, and a sense of community.

INTRODUCTION

The educational uses of selected next-generation technologies are designed to engage students and educators in socially networked blended e-learning landscapes. Social software such as wikis and media-sharing sites allow communities of learners to interact in multiple modes, ranging from text and images to the “through the looking glass” multi-user virtual environment (MUVE), in which the user’s creative imagination transports them to the other side of their computer screens.
These constructed environments enable multiple simultaneous participants to access graphically built three-dimensional (3D) environments, including landscapes and buildings, interact with digital artefacts and various functional tools, and represent themselves through “avatars” (graphical representations of participants) to communicate with other participants and enact any number of collaborative learning activities (Dede, Nelson, Ketelhut, Clarke, & Bowman (2004).

When situated alongside several new developments including the blending of real and virtual environments, digital information is now superimposed on the real world. Instead of staring at screen or imagining themselves on the other side of the screen, students and educators are able to move through the real world with wireless devices such as mobile phones and digital cameras. These technologies allow users to carry the virtual world with them. This chapter examines how this new generation of technologies enable novel forms of collaborative and simulated learning, which reconfigure the roles of educators in steering the learning process, while encouraging students to translate their customary social uses of these technologies into a more active and constructivist learning experience.

DEFINITIONS AND CONCEPTUAL FRAMEWORKS

In defining blended learning in higher education, the literature produces a wide variety of approaches. As Stacey and Gerbic (2009) indicate, blended learning incorporates the shift from traditional face to face environments that rely on weekly interaction between participants led by the educator, to a broader range of asynchronous study designs incorporating text or web-based resources generally associated with distance education. More recently, greater engagement with information and communication technologies (ICT) has supported the integration of these two models to embrace new modes of independent and wholly online study, identified here as e-Learning.

Current examples of blended learning include a combination of e-Learning modules and time-tabled online tutorials using chat room facilities that are integrated into a learning management system (LMS), or external internet based software such as Skype or MSN Messenger. Another model situates e-Learning alongside a designated number of intensive study days on campus or online. This integration blends across four key dimensions that Graham (2006) identifies as space, time, fidelity, and humanness.

In the recent development of an innovative model of blended learning, MUVEs are now commonly integrated within an e-Learning intensive study model. In this framework, the blended learning process includes much more than web-based resources located in a Learning Management System (LMS). This model integrates intensive face-to-face workshop activities or tutorials and online learning resources within a LMS with purpose-built MUVEs. Deakin Island, located on the web-based MUVE Second Life, provides a useful illustration of the potential for these distinct technologies to be blended with routine face-to-face and distance learning activities in a variety of disciplinary settings.

These blended teaching and learning environments host authentic applications using interactive digital artefacts, which enhance the professional development of students, while increasing their awareness and understanding of curriculum content and their competence with emerging technologies relevant to their future careers. Three-dimensional MUVEs offer students opportunities to construct new forms of personal meaning on key issues associated with their routine learning, through the development of, and interaction with, scenarios and collaborative role playing. Within this environment, social interaction and interpersonal contact through computer technologies are considered vital (Collis, Bianco, Margaryan, & Waring, 2005).