Chapter 14
Contemporary Theory for Immersive Worlds:
Addressing Engagement, Culture, and Diversity

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ABSTRACT

This chapter will provide the reader with a historical context and introduction to contemporary learning theories for 3D and immersive environments being used for educational purposes. Many traditional educational theories predate the emergence of the multimedia literacy movement and do not adequately address the challenges of developing, delivering, and integrating multimedia based content such as game-based immersive environments into curricula. The authors place significant emphasis on the importance of relevant, accurate, and situated aspects of culture and diversity throughout the development, implementation, and evaluation phases of immersive learning environments. To this end, a new theory is introduced and discussed in detail. The Ecology of Culturally Competent Design has been developed to specifically address the rigors and challenges of accurately situating culture within virtual environments.

INTRODUCTION

3D immersive worlds are increasingly being used as educational platforms. The malleable and customizable nature of virtual environments allows educational designers and teachers to situate learning experiences in ways simply not possible in more traditional environments such as classrooms, laboratories, and even structured apprentice style learning settings.

It can be difficult to apply traditional learning models and frameworks to rapidly emerging technology such as 3D immersive worlds. Many of the pedagogies used to support learning in these worlds predate the emergence of contemporary

virtual reality environments. The most innovative and successful facets of in-world learning are not based on traditional learning models or even the serious games movement, but rather come from the entertainment industry, including, but not limited to commercial video games (Gee, 2003; Squire, 2006) and the designed experiences found in many theme parks (Squire, 2006). As educators, we strive to take advantage of, and understand how created environments like social media, virtual reality and game-based learning can be harnessed for, and integrated into academic curricula (Bauman, 2010).

Most of today's students grew up in the age of the Internet, and they embrace digital culture. They are likely to have a high degree of media literacy and adaptability (Squire, 2006; Squire, Giovanetto, Devane & Durga, 2005; Thoman & Jolls, 2004). Digital media is no longer seen as a facet of culture limited to entertainment and communication. The modern learner is accustomed to multi-media environments and is comfortable using these environments for academic, personal, and professional gain. Students have come to expect that multi-media technology, including immersive and web-based education will be integrated in to their curricula (Bauman, 2007; Campbell & Daley, 2009; Nelson & Blenkin, 2007). Institutions that do not embrace a sense of media literacy find it increasingly difficult to compete for today's best and brightest students.

The goal of this chapter is to introduce the reader to contemporary frameworks and theories that have been specifically developed to attend to the unique elements of learning in virtual and game-based environments. This chapter will introduce and discuss the applicability and merits of theories specifically designed to leverage the power of contemporary and emerging virtual reality or 3D immersive learning environments. The reader should note that while the authors believe the theories and frameworks discussed in this chapter are essential for designing, implementing, and evaluating contemporary media

environments, the authors also acknowledge that these frameworks and theories will continue to gain relevance, validity and importance through continued vetting and evaluation.

In order to provide a historical perspective and lay the groundwork for the discussion of contemporary theories related to learning in immersive and game-based environments this chapter will review several traditional experiential pedagogical models that have provided the impetus for contemporary theories (Benner, 1984; Kolb, 1984; Scion, 1983). The role and influence that constructionism (Papert & Harel, 1991; Kafai & Resnick, 1996) and sociocultural perspectives play on media literacy and multiple perspectives of meaning (New London Group, 1996) will also be explored.

The importance of contemporary pedagogical perspectives will be emphasized in the context of immersive environments that support simulation and game-based learning, and address culture and diversity. Contemporary pedagogies including *Created Environments* (Bauman, 2007), *Designed Experience* (Squire, 2006), *Socially Situated Cognition* (Gee, 1991,1993), and the *Three Dialog Framework of Educational Game Design* (Games, 2008) will be discussed. The emerging theory *Ecology of Culturally Competent Design* (Games & Bauman, in press; Bauman, 2010) will be introduced and discussed in detail as a new emerging theory that has been developed to specifically address and support the social nature of culture and diversity found within contemporary and emerging virtual and immersive environments.

This chapter will also focus on strategies for integrating virtual reality and game-based environments into curricula that emphasize participant engagement. This chapter not only stresses the importance of engagement and social interaction, but the importance of designing authentic environments that strive to instill cultural competence and diversity during all aspects of curriculum development, implementation, and evaluation. Educators facilitating activities that promote learning in

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