Chapter 47
Minecraft as a Creative Tool: A Case Study

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ABSTRACT

Many scholars are enthusiastic about the potential learning opportunities present in the sandbox-style gaming environment, Minecraft. In the following case study, the authors explored the use of Minecraft in a high school literature class and the presentation of characterization and plot in three student-made machinima, or films made in the game world. The authors demonstrate that Minecraft offers a unique opportunity for students to display their creativity and understanding of concepts in ways that are more feasible than if they were attempted in the "real" world. It is also relevant to point out that the epistemology associated Minecraft is constructionist in its nature, which implicates a different style of instruction than is typically employed in the U.S. classroom. The authors pose some questions about the diffusion of games like Minecraft in the future, based on their discussion of similar technologies in the past.

INTRODUCTION

Over the last decade, the affinity between video games and learning is an energized subject across educational and industry settings. Academics posit that video games provide endless opportunities for players to learn via innovation, persistence, and problem solving (Gee, 2007, Malone & Lepper, 1987; Shaffer, 2006, Squire, 2005). Connolly (2011) notes that the advantages include, "increased motivation and engagement, an enhanced learning experience, and improved student achievement and retention" (p. vii).

James Paul Gee is one of the many scholars to recognize the benefits of video game-based learning and its potential for deep and meaningful learning practices. Gee was certainly not the first to advocate for video games as a form of learning

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(McGonigal, 2008; Prensky, 2006; Salen, 2008; Shaffer, 2006; Squire, 2005), but his interpretation of the challenges and opportunities inherent in video games has drawn attention to "good video games" (Gee, 2007, p. 12). To summarize his complex discussion, "good video games" are games in which game design is dedicated to enjoyment and challenge, rather than educational ends. The games Gee speaks of happen to be some of the more commercially popular titles (e.g., *Halo* and *Legend of Zelda*).

Scholars at the forefront of this movement claim that game-based learning activities are "most powerful when they are personally meaningful, experimental, social, and epistemological all at the same time" (Shaffer, Squire, Halverson, & Gee, 2004, p. 105). To investigate the learning outcomes based on this claim, the authors conducted a case study using *Minecraft*, a commercially popular video game, as a learning tool. The authors discuss the results of the case study to elucidate the potential uses of commercially popular video games like *Minecraft* in formal educational settings.

Although Gee is often credited for his role in video games and learning scholarship (Alexander, Eaton, & Egan, 2010; Epper, Derryberry, & Jackson, 2012; Mishra & Foster, 2007), other technological and economic factors have contributed to the growing interest in the potential of video games. The explosion of casual gaming on smart phones and tablets have led to presence of digital games in everyday life (Juul, 2010). Whether through mobile applications (e.g., *CandyCrush*), "gamified" systems (e.g., *Nike+*) or social network site games (e.g., *Farmville* or *Mafia Wars* on Facebook®), many more people spend their time in the game space.

Additionally, research shows that video game culture is embedded in the culture of most young people in the United States. Young people represent a large portion of those who engage in these types of game spaces, thus their popularity among this population presents many clues about their preferred modes of participation, interaction, and collaboration. The Pew Internet and American Life project report summarized the common practice of video gaming in the lives of young people stating, "Video gaming is so widespread among American teenagers that to paint a portrait of a typical teen gamer is to hold a mirror to the population of teens as whole. Nearly every teen plays games in some way, regardless of gender, age, or socioeconomic status" (Lenhart, Kahne, Middaugh, Macgill, Evans & Vitak, 2008, p. 7).

The popularity of both games, and in particular, collaborative gaming and knowledge sharing (like that which occurs in *Minecraft*), represents a practice that might inform successful models of twenty-first century learning environments. At this point, the knowledge that young people gain in these gaming environments is mostly informal; they get it by asking friends and searching user-generated content for instruction, rather than a formal instructional experience, or using trial and error (Beck & Wade, 2004). These informal learning networks are of particular interest to many: K-12 education reform advocates, economists, video game developers, and researchers, because the technology of video games provides clues to the types of literacy that will be valuable for future professionals (Beck & Wade, 2004). As digital technologies like video games proliferate, the global economy slumps, and U.S. education systems struggle to prepare students for an unprecedented future, many have placed their hopes on the potential for video games to assist in education (Gee & Hayes, 2011).

As Old As the Games Themselves

Despite the recent surge, the academic interest in the potential learning benefits of video games is almost as old as video games themselves (close to 40 years old); (for a more comprehensive review see Ito, 2008; Randel, Morris, Wetzel, & Whitehill, 1992). Yet, only recently have schol-