Chapter LXXII
Video Game Creation as a Learning Experience for Teachers and Students

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ABSTRACT

This chapter explores changing conceptions of learning brought about by technological changes and opportunities and examines more closely the understanding of video game creation as a learning experience. Based on the first year of a three-year ethnographic research study of the educative value and potential of video games within a school setting, this chapter examines the powerful learning and teaching practises in classes of information technology and programming in which video game creation has been used as entry points into learning programming skills. Observations, interviews, and video recordings coupled with students' articulation of their process were used to examine the depth of students' learning and revealed the development of their multi-literacy skills, social skills, and their learning process awareness. Suggestions within this chapter include how a social constructivist classroom involving technology and popular culture can be developed and valued.

INTRODUCTION

This chapter explores changing conceptions of learning brought about by technological changes and the opportunities these afford. In this chapter we examine more closely the understanding of video game creation as it relates to learning through an ethnographic study of two high school information technology and programming classes. Video games are a powerful learning tool (Gee,

2003; Johnson, 2005), and we explored the learning involved with video game playing and creation in multiple ways, examining operational, cultural, and critical aspects of literacy (Green, 1997); we believe that we must find ways to enable teachers and students to raise critical questions relating to these texts as well as gaining proficiency, technological expertise, and social capital in video game play and design.

Designing and creating video games in a high school classroom is a fantasy-come-true for some students, but it is a reality in computer classes at a large-sized Western Canadian high school. Classes of information technology and programming have been using video games as the entry point into learning programming skills. Powerful learning and teaching practises are apparent and through observations, interviews, and video recordings, coupled with students' articulation of their process, we have been carrying out the first year of a three-year ethnographic research study of the educative value and potential of video games within a school setting. We consider how a social constructivist classroom incorporating technology can be developed and valued, how skills learned in these technological places can transfer to other learning experiences, and how spaces for reflection are critical for both students and teachers as they engage so intensely with computers.

BACKGROUND

The term "video game" is one whose definition has been elusive and highly contested since its entry into academic and educational worlds. While there are many varieties and levels of complexity of video games, it is generally recognized that all games have the following characteristics, to a greater or lesser degree: graphics; sound; interface; gameplay; and story (Newman, 2004). Given these complex and overlapping components, it is easy to see video game design and creation as a rich potential site for learning. Learning itself is a complex concept to define, and for the purposes of this chapter we are understanding "learning" to encompass focused activity that enables individuals, groups, or communities to acquire and apply new knowledge and skills, to adapt to changes and challenges, make choices, solve problems, and create new learning. Learning is defined as "acquisition and development of memories and behaviours, including skills, knowledge, understanding, values, and wisdom" (http://en.wikipedia.org/wiki/Learning) and is generally gained by experience or instruction. As Gee (2003) claims, video game play provides good principles of learning related to, among other things, active critical incremental learning where practice is a requirement of successful play and a stimulus for repeated voluntary engagement.

The world of new technologies surrounds us, and as we explore these spaces, it appears that males are more often, at more sophisticated levels, engaging with new technologies. From pre-school age, it is not uncommon for young boys to spend hours playing video games, trying out new strategies, puzzling their way through engaging and interactive "texts" (Alloway & Gilbert, 1998; Newkirk, 2002). As we have examined boys' practices with these texts (Blair & Sanford, 2004; Sanford & Madill, 2007) it has become evident that many skills are being learned through new technologies. Gee (2003), Johnson (2005), and Shaffer, Squire, Halverson, and Gee (2005) present compelling arguments related to sophisticated learning developed through video game engagement. We see that video game play can be powerful interactive learning (Gee, 2003; Prensky, 2001), and we are also aware that it is predominantly boys who engage with these alternative texts. There is, we believe, a disconnect in the subtle yet powerful messages given to boys and girls about the importance and accessibility of new technological skills and understandings, and between the opportunities afforded to boys and to girls in both school and out-of-school spaces