

## Chapter 4.21

# Teacher Gamers vs. Teacher Non-Gamers

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### ABSTRACT

The purpose of this study was to identify secondary teachers with video game-play experience and determine if perceived levels of comfort in regard to completing job-related technology tasks, amounts of instructional technology usage, and amounts of participation in innovative teaching strategies are affected by experience or lack of experience with video games. Although significant differences were not found between teachers identified as gamers and those identified as non-gamers, researchers may choose to investigate specific areas where mean differences were found. For example, gamers were more comfortable using presentation software for demonstrating concepts in class, communicating electronically with colleagues and students, us-

ing the Internet for instructional purposes, and presenting information using various delivery modes. In comparison to gamers, non-gamers indicated a tendency to communicate electronically with parents more often, encourage students to use electronic tutorials outside of class more often, and allow students to use word processors to complete assignments more frequently. This study can be used as a reference point for future research into teachers and video game-play in regard to teaching practices and job-related tasks.

### INTRODUCTION

Video games have become a part of the daily lives of many individuals, regardless of age or gender. In fact, the video game industry has grown to rival the motion picture industry and each of the major television networks in terms of revenues

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and profits. Despite the size of the industry, more research is needed on the potential benefits of video game-play and learning (Shaffer, Squire, Halverson, & Gee, 2004).

In an exert entitled, "From Video Games, Learning About Learning," from his book, *What Video Games Have to Teach Us About Learning and Literacy*, Gee (2003) describes video games as being long, hard, and challenging. Gee indicates if a game has good learning principles in its design, the learning can be translated in positive ways. In his opinion, the theory of learning behind good video games closely resembles learning theories from the cognitive sciences.

Cognitive science is the study of the mind and includes processes such as thinking, reasoning, language, perception, learning, and remembering. Cognitive science crosses several disciplines including computer science, linguistics, philosophy, and psychology (Rapaport, 1996). Research within this area suggests human interaction within an environment and perception are related in creating memory (Glenberg, 1997).

Video games create environments and allow interaction within these environments. According to cognitive science principles, this should create memory. Good games are challenging, give information in context, allow players to create, build problem-solving skills, are motivating, and offer opportunities for individuals to work together (Gee, 2003).

Characteristics of gamers, such as willingness to volunteer, creativity, and reading to gain knowledge, have been used to describe innovative teachers (Cumming & Owen, 2001; Thomas, 1993). Also, similar to video games, innovation requires creating, persistence, action, teamwork, and risk taking (Ballantyne, McLean, & Macpherson, 2003).

Based on the premise that learning takes place in video games and many characteristics of game players and innovators are similar, the researchers designed this study to determine the effects video game experience may or may not have on

perceptions of teachers and their comfort levels when completing job-related computing tasks, amount of instructional technology usage, and participation in innovative teaching practices. If video game experience allows individuals to gain certain knowledge and skills applicable to basic computing skills and instructional technology, teachers may have higher comfort and participation levels in each area. Also, many of the characteristics of game players reflect the same qualities found in innovative teachers.

This study is important to the field of education and gaming because certain aspects of gaming such as problem solving, teamwork, communication, and knowledge of technology may be increased by the playing of video games. Intuitively, if knowledge of technology is increased, comfort levels with various technologies may also be increased. Also, motivation (Rosas et al., 2003) and self-confidence (Carstens & Beck, 2005) have both been enhanced by video game-play. Each of these aspects or traits are important to the field of education as teachers are facing ever-increasing pressure to raise scores on various standardized tests and teachers are expected to perform at high levels in the classroom.

## **BACKGROUND**

Computer games and video games are two terms that are often used synonymously to describe games played on personal computers, handheld systems, consoles, or arcade machines (Wikipedia, 2005). A game is a form of art that requires decision making, opposition, the management of resources, the attainment of tokens, and a sufficient amount of information. Games are often strengthened by diplomacy, simulation, variety, character identification, role-playing, and socialization (Costikyan, 1994). Games are complete systems with explicit rules, with fantasy playing a major role in various situations (Crawford, 1982). Gee described a game as a world in a box allowing a player to create an

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