

Chapter 8

Effects of Playing a History– Simulation Game: Romance of Three Kingdoms

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ABSTRACT

Studies on game-based learning usually investigate at least one of three subjects: the effects of gaming on learning performance, the effects of gaming on cognitive skills and attitudes, and learners' game-design experiences. Whether gaming relates positively to learning outcomes is still under investigation. This study examines the components contributing to the development of a literate game player and how players could cognitively grasp the design of a game scenario based on real history (namely, the game Romance of the Three Kingdoms). This study surveyed 497 participants in Taiwan on their knowledge of Chinese history (the Three Kingdoms period). The participants constituted two groups: participants who had years of gaming experience and participants who did not. The study examined test performance by using an independent sample t-test and one-way ANOVA and Pearson-correlation methods. The results revealed that the game players were more knowledgeable about the history of the Three Kingdoms period, had greater motivation to learn history, and were more motivated to learn history by playing the game than was the case with the non-game players.

PURPOSE OF THE STUDY

The effects of game-based learning on cognitive gains are still being investigated (Connolly, Stansfield, & Hainey, 2007; de Jong & van Joolingen, 1998; Washbush & Gosen, 2001). However,

researchers who study game playing are nearly certain that the more frequently a player plays games, the more confident and the more fluent he or she will be in gaming (Bonanno & Kommers, 2008). So, would game players learn more about a subject if the game concerned real history and if knowledge of the history were part of the gaming

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literacy? To further explore whether a game concerning real history can affect players' spontaneous motivation to learn and players' knowledge of history, this study surveyed Taiwan game players familiar with a history-simulation game that is popular in Asia and that was developed by the Japanese KOEI company. The game is *Romance of the Three Kingdoms (RTK)*. The purpose of this study is to investigate if there is any association between playing *RTK* and players' knowledge of the events in this historical period, the part of the *RTK* gaming literacy.

LITERATURE REVIEW

Game-Based Learning

Almost every teacher incorporates some type of game into teaching (e.g., puzzles and chain reactions) because playing games is fun and engages students (Berrenberg & Prosser, 1991). With the advancement of computers, networks, and entertainment technology, more and more students in recent generations have engaged in playing computer video games outside the classroom to enjoy the state of flow described by Csikszentmihalyi (1985). Many educators and researchers, such as Gee (2007), Squire (2006), Salen and Zimmerman (2005), and Salen (2007), have deemed computer video games a new media that educators should integrate into learning. There are also voices advocating that educators trigger learners' motivation and improve their learning outcomes by having them play games whose features pair with specific instructional content (Garris, Ahlers, & Driskell, 2002).

Usually, three types of games are discussed in the educational context: commercial games, educational games, and simulation games. Commercial games are designed for entertainment and include, for example, *Diablo* and *World of War Craft* (produced by Blizzard). Players have

to unravel the goals, rules, and operations of the game, and figure out strategies to win battles with allied online players. Educational games are gaming systems that incorporate gaming elements (goals, rules) and intrinsic motivational determinants (challenge, curiosity, control, and fantasy, suggested by Malone & Lepper, 1987) into the game design to encourage learners to complete drill-and-practice exercises or multiple-choice questions pertaining to an academic area. *Where in the World Is Carmen San Diego* is one of the representative educational games. Simulation games provide near-real environments to enrich learners' experience. Simulation games combine various input and output parameters to allow learners to manipulate and observe how combinations of these factors influence the simulation consequences of a complex system and the underlying rules. *SimCity* is one of the most discussed simulation games in the educational context.

Studies on gaming and learning have been taking various approaches owing to the distinct features of these games and of the target learners. The first task that researchers undertook is to study the effects of gaming on learners' cognitive skills and attitude (Bonanno & Kommers, 2008; Bottino, Ferlino, Ott, & Tavella, 2007; Childress & Braswell, 2006; Henderson, Klemes, & Eshet, 2000); the second task is to investigate the effects of game-based learning on learning outcomes and training performance (Faria & Wellington, 2004; Parchman, Ellis, Christinaz, & Vogel, 2000; Washbush & Gosen, 2001); last is to present learners' experiences in relation to game designers (Childress & Braswell, 2006; Connolly, Stansfield, & Hainey, 2007; Robertson & Howells, 2008). A majority of research on gaming and playing focuses on the medical-education domain and the business-management domain, whereas most research on the use of gaming in K-12 education is in the form of case studies (Wideman et al., 2007).

Although researchers have extensively studied the effects of playing games on learning, several

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