Attitudes Toward Game Adoption: Preservice Teachers Consider Game-Based Teaching and Learning

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ABSTRACT

Gaming has become a core activity with children and more teachers are using games for learning than five years ago. Yet, teachers report that they learn about game titles, impact studies, and facilitation techniques through their own initiatives or from other teachers rather than from their teacher education program. This article reports on a combined curricular approach built on game strategy research that asked teacher candidates (n=102) to discuss headlines news about gaming, play games, review games and game research, teach others how to play games, and then construct games. Findings revealed that candidates saw value in using games in K-12 to teach content, were able to develop assessments based on game content at a novice level, and were able to construct games either alone or in small groups. Educators contemplating gaming as an instructional strategy may be interested in the espoused combination strategy to encourage game adoption in K-12 settings.

KEYWORDS

Board Games, Game Adoption, Game Construction, Game-Based Learning, Preservice Teachers

INTRODUCTION

Research citing the reluctance of teachers to integrate new technologies like games into their curriculum is not new (i.e. Wetzel, Wilhelm, & Williams, 2004; Zhao & Frank, 2003) especially in the Social Studies, yet, game-based learning has made significant strides over the past decade emerging as a powerful instructional strategy that can positively affect learning outcomes (Connolly, et al., 2012; Gillispie, 2009; Hainey, et al., 2016; Papastergiou, 2009; Siegler & Ramani, 2008; Virvou et al., 2005; Wouters, van Nimwegen, et al., 2013; Yee, 2006). In and out of school settings, gaming is a core activity with children. A recent survey of parents with children under 18 years of age report their children as daily electronic game players (79%) indicating that game play is a big part of the youth culture (Pew Research Center, 2015). This is further evidenced in spending on commercial off-the-shelf electronic game titles contributing, in 2009, to the $10.5 billion computer and video gaming industry (Entertainment Software Association, 2014). Sales for non-digital games and puzzles amounted to $1.9 billion in the United States in 2013, according to the Toy Industry Association, up 3 percent over 2012 (Gilsdorf, 2014).
Taking this new landscape into consideration, the first goal of this study was to examine the attitudes of preservice candidates toward games as teaching and learning tools after extended play, discussion, teaching, and game construction. Attitude is the strongest predictor of intended use of games, most recently cited in a meta-analysis of 66 research papers published between 2004 and 2014 that examined the adoption, continued use, and loyalty in the context of games (Hamari, Keronen, & Alha, 2015). Since attitude predicts intended use of games, it can affect teacher choice of instructional strategies when designing instruction for their students. Improving teacher candidates’ attitudes toward games, in particular Social Studies games, may cultivate student interest in Social Studies, cited as the most disliked subject taught due to the use of stagnant instructional strategies (Leming, Ellington, & Schug, 2006) consisting mostly of rote memorization strategies (Stodolsky, Salk, & Glaessner, 1991). The teaching of social studies has changed little over the past 50 years (Levstik & Tyson, 2008). The second goal of this study was to contribute to a larger understanding of the type of games candidates could construct in conjunction with student-learning standards as the benchmark for outcomes. For the purpose of this study, the term ‘board game’ refers to any game that requires a tabletop for play and includes board games, dice games, and card games. Digital games refers to any game that requires the use of an electronic source, such as a computer or hand-held device.

The following literature review discusses the effects of game play on learning gains and the status of teachers in conjunction with game use in educative settings. It provides the platform to investigate the central research question of this study: Does a combination strategy consisting of extended game play, class discussion, peer game teaching, and game construction with a focus on Social Studies increase candidates’ attitudes toward game adoption in their future teaching practice?

LITERATURE REVIEW

The reluctance of teachers to integrate technology into teaching and learning once cited in the literature (for example, Wetzel, Wilhelm, & Williams, 2004; Zhao & Frank, 2003) seems to be dissipating (Joan Ganz Cooney Center Research Report, 2016). Rather, the top barrier to game adoption in K-12 classrooms is lack of teacher training on how to integrate digital content within instruction, reported by 57% of principals surveyed (Project Tomorrow, 2016). In addition, poor teacher education is often to blame for teachers’ lack of expertise (Adiguzel, Vannest, & Zellner, 2009; Purcell, 2005).

Game use in educational settings is on the rise. Teachers, like students, have become avid digital gamers with the influx of Smart phones and inexpensive APPs, using digital games for learning through their own initiative or because a colleague connected them to a game (Joan Ganz Cooney Center Research Report, 2016). The National Speak Up report from Project Tomorrow (2016) revealed that in 2010, only 23 percent of surveyed teachers said they used games to teach content compared to 48 percent of those surveyed in 2015.

Concerns related to teacher confidence and their ability to manage a classroom along with the perceived lack of quality games once pointed to in the literature (for example, Bullock, 2004; Doering, et al., 2003) also seems to be dwindling. In two early studies, it appeared that preservice teachers did not possess the confidence needed to lead games with their students (for example, Sardone & Devlin-Scherer, 2008; Vannatta & Fordham, 2004). Yet, a recent study (n = 1099) indicated that teachers and after-school instructors wanted to learn how to use gaming consoles for teaching purposes (Joan Ganz Cooney Center Research Report, 2016).

Project Tomorrow (2016) reports that six out of ten middle school students play online games. Children are attracted to devices and games and the notion of play (Eisen and Lillard, 2016); however, teachers and teacher candidates need to consider the educative value of the content embedded in games, just as they would any other instructional medium. Teachers cite wanting content-based and modifiable games for use in their teaching. They look for empirically tested games and those that hold a proven record of accomplishment in helping students perform better (Joan Ganz Cooney Center Research Report, 2016). Yet, finding quality titles with impact studies remains elusive for teachers.
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