

# Raising Parental Awareness about Game-based Learning

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**Abstract:** The main argument presented in this paper is that educators, researchers and school administrators must develop effective techniques to educate parents about potential benefits of digital game based learning. Authors suggest that one of the reasons schools are hesitant to introduce video games into the curriculum is the fear of parental objection. This paper provides a few suggestions on what factors might contribute to negative parental attitude toward video games in the classroom; lack of experience with video game play, inadequate understanding of the complex nature of video games, limited knowledge about benefits of game play and negative media messages are among them.

## 1 INTRODUCTION

The effect of video games on learning is an emergent area of research in the social sciences and education (Bourgonjon, et al., 2011; Clark, et al., 2013; Oosting, et al., 2008). The majority of research on digital game based learning not only “links video games with contemporary learning theories” (Bourgonjon, et al., 2011, p.1434) and focuses on teachers’ and students’ attitudes toward integration of video games into the classroom. Relatively little research on game based learning addresses parental attitudes toward implementation of video games into the classroom setting (Bourgonjon et al., 2011; Turkay, et al., 2014). However, it is important to raise parental awareness of the potential benefits of digital game based learning. Educators and administrators should develop engagement strategies to help parents understand the purpose of using games in the classroom.

In his 2012 book, “The Modern Parent’s Guide to Kids and Video Games,” Scott Steinberg provides several examples of how video games are being incorporated into the classroom. To alleviate parental concern that passive video game play can lead to obesity and passive, sedentary lifestyles, “West Virginia (schools) have even adopted “active” titles like Dance Dance Revolution, which get players up and moving, as part their physical education programs, in hopes of better exciting and motivating pupils” (Steinberg, 2012, p.2).

Many companies produce educational versions of their games to be used in the classroom (Steinberg, 2012). One of the best examples is Minecraft.edu. TeacherGaming – a company started by three teachers from the US and Finland, created a modified a version of Minecraft that is flexible and powerful enough to be adapted by teachers for various subjects. According to Bristow (2013), by fall 2013, Minecraft.edu was used by 2500 schools worldwide. In 2012, Centre on Education Policy issued their last paper in the series of six reports dealing with students’ motivation to learn. The paper provides a short list of educational games developed to reinforce academic skills and to motivate disengaged students. Lure of the Labyrinth by MIT and MIND Research Institute are among them. Despite the fact that educators and researchers are willing to incorporate non-traditional approaches to teaching (Center on Education Policy, 2012), schools are slow to adopt digital game-based learning as part of their curriculum (Bourgonjon et al., 2011).

Research demonstrates that one of the reasons educational institutions are hesitant to introduce video games into the curriculum is the fear of negative parental reaction to such an endeavour (Bourgonjon et al., 2011; Takeuchi and Vaala, 2014). In 2009 BECTA’s (British Educational Communications and Technology Agency) report titled “Computer games, schools, and young people: A report for educators on using games for learning,” the authors stated that 49% of teachers reported that objections from parents is fifth major barrier to the

integration of games into the curriculum (Williamson, 2009). In 2014 “A National Survey on Teaching with Digital Games” demonstrated that more than 9% of teachers believe that the lack of parental support is one of the greatest barriers educators face in using digital games in the classroom (Takeuchi and Vaala, 2014, p.53). A study conducted by Bourgonjon et al., (2011) presented empirical evidence that “the fear of teachers concerning parental acceptance of DGBL is real” (p. 1440). Eight hundred fifty eight people participated in the aforementioned study and majority of demonstrated very low level of acceptance of digital game based learning (Bourgonjon et al., 2011). . Further, they expressed rather negative beliefs about video games in educational settings. Lack of parental experience with video game play, inadequate understanding of the complex nature of video games, limited knowledge about benefits of game play and negative media messages about the video games shape parental attitude and perceptions about video game based learning (Bourgonjon et al., 2010 and 2011; Turkay et al., 2014).

## 2 PARENTS AND VIDEO GAMES

According to Rideout (2014), one of the reasons parents might object the use of educational games in the classroom is the idea that games and media in general do not represent great sources of learning. The results of 2014 national survey report “Learning at home: Families’ educational media use in America” demonstrated that when given a scale 96% of parents believe that parents themselves are the best sources of learning for their children; 73% stated that teachers are the best sources; 67% believe that books are the most important tools for learning and only 10% thought that media and video games are very important for teaching and learning (Rideout, 2014, p. 25).

Research by Pasnik, Strother, Schindel, Penuel, and Llorente, (2007) demonstrated that what most parents know about video games is based on media messages. They also receive information from the early studies on multimedia and how it impacts children’ learning and behaviour rather than more recent ones. Over the years, many researchers have questioned whether digital multimedia, including video games are appropriate learning environments for children (Pasnik et al., 2007). Pasnik et al., (2007) outlined several research studies by Corteen and Williams, 1986; Gadberry, 1980; and Hornik,

1978 that “have claimed that [media] displaces other activities that might have a greater impact on children’s literacy skills and their cognitive and emotional development in general” (p.28).

### 2.1 Research on Games Today

More recent studies by Bavelier, Green, Schrater, and Pouget (2011), Green, Sugarman, Medford, Klobusicky, and Bavelier (2012), Green and Bavelier (2012) demonstrated that video gamers are notably different from non-gamers in certain real-life skills such as speed, accuracy and attention. Feng, Spence, and Pratt (2007) conducted a study in which female participants were trained on action video games in order to improve their spatial cognition - one of the essential mental skills for math and engineering.

On average women are significantly worse than men on spatial cognition testing (Feng et al, 2007 p. 850); however after 10 hours of training in action video games, women’s scores have substantially improved (Feng et al, 2007, p. 853). In 2010 researchers from the Centre for Vision Research at York University selected 26 young men in their twenties and placed them in a functional magnetic resonance imaging machine to measure which areas of the brain were activated while subjects completed a series of complex visiomotor tasks (Granek, Gorbet, and Sergio, 2010). Thirteen men who had played video games at least four hours a week demonstrated much better results in performing increasingly difficult visiomotor tasks than other 13 men who were non-players. Researchers were able to test how the skills learned during video game play can transfer over to other tasks and “how long-term, heavy experience with video games can alter the brain activity involved in controlling other types of visually guided movements” (Granek et al, 2010, p. 1172). Trudeau (2010) noted that,

The non-gamers had to think a lot more and use a lot more of the workhorse parts of their brains for eye-hand coordination, whereas the gamers really didn’t have to use that much brain at all, and they just used these higher cognitive centres to do it.

In addition, Green et al., (2012) found that action games allow students to become much better in multitasking. Their research demonstrated that, in lab tests on multitasking, the cost of switching between the tasks and the reaction time was significantly better in action game players than in non-players. (Green et al, 2012, p.993).

In a 1983 study on the educational effectiveness of television viewing, Singer and Singer suggested that

by engaging in multimedia experiences, children's imaginations and creative abilities will become stagnant. However, Jackson, Witt, Games, Fitzgerald, von Eye, and Zhao (2011) "found that videogame playing was related to multiple dimensions of creativity, regardless of the type of videogame played" (p. 5). Jackson et al., (2011) worked with the group of 491 twelve-year-old students and discovered that the more video games children played, the more creative they were in activities such as storytelling and drawing.

## 2.2 Parental Bias against Games

Bourgonjon et al., (2010) found that parental perspective of video games is biased and largely influenced by subjective norm and "the negative image of the video games as portrayed by in the popular media" (p. 1440). Echoing the results of Bourgonjon's et al (2007) findings, Vitelli (2014) stated

Despite the potential value of video games, much of the media coverage up to now has been negative, particularly due to concerns about potential video game addiction and their violent content. (...) attaching labels such as "good", "bad", "violent", or "prosocial" largely overlooks the complex picture surrounding the new generation of video games now available. (para. 19)

## 3 PARENTAL INVOLVEMENT AND MEDIATION

Singer and Singer (1983) suggested that being engaged in multimedia activities might stunt children's imaginations. However, the authors also noted that adult mediation was a key factor in educational effectiveness of multimedia experiences. Echoing these findings, Neuman (1995) suggested that parent-child interaction, family dynamics, and family norms about media help children form their own media perceptions. The author (1995) further noted, that what children learn by using and participating in different multimedia environments largely depends on how the use of those tools is mediated by parents and teachers. However, according to Rideout (2014) many parents feel that they are not aware of the educational value of the media; therefore, they rely on teachers for help (p. 25) Several researchers agree that parental involvement and mediation are significant factors in contributing to the overall educational effect of

multimedia in general and video games in particular (Neuman, 1995; Rideout, 2014; Singer and Singer, 1983; Skoien and Berthelsen, 1996; Steinberg, 2012; Turkay et al., 2014; Whitebread, Basilio, Kvalja and Verma, 2012; Williamson, 2009).

Many researchers agree that parents play an important role in students' and eventually educators' attitudes toward gaming (Skoien and Berthelsen, 1996; Whitebread et al., 2012). Green, Ortiz, and Lim (2009) argued that if parents accepted a certain non-traditional (digital) learning tool, then their children would most likely have a similar attitude toward it. Parents might be the support system that educators need in order to ensure that students are able to see educational value of video games and are willing to think critically and draw connections between what they learn in the gaming environment and core subject areas (Bourgonjon et al., 2011; Kenny and McDaniel, 2009; Williamson, 2009).

## 3.1 Increasing Parental Involvement with Games

Providing parents with opportunities to learn about potential benefits of DGBL might increase parental involvement into the learning process and motivate parents to be more engaged in their children's education (Williamson, 2009). "Just over half (55%) of parents agree strongly (20%) or somewhat (35%) that they would like more information from experts about how to find good [...], games, and websites to support their child's learning" (Rideout 2014, p.26). One of the main triggers that would stimulate parental interest might be "related to public perceptions about what actually constitutes valid and valuable educational activity, and is similarly related to popular perceptions of gaming as a purely pleasurable pastime rather than a challenging complex of social activities and skills" (Williamson, 2009, p.35).

This skepticism might provoke parents to get involved and ensure that games in the classroom are beneficial to the child's learning. Williamson (2009) also reported that

...a secondary school has approached parental engagement through showcase events and personal contact with parents; at one such evening showcase event, 250 parents turned up, exceeding attendance for some other events. This demonstrates how the use of games in schools galvanizes interest; a more focused exploration of parents' attitudes towards educational gaming would provide useful evidence to understand this more fully (p.35).

Henderson and Mapp (2002) compiled 51 studies that provide empirical evidence that there is positive correlation between parental engagement into their children's education and student achievement. By bringing parents on board and educating them about the potential of video games we can create partnership that will allow students to extend their learning beyond the classroom (Henderson and Mapp, 2002). It follows that the more involved parents are in their children education, the better their children do at school.

## 4 CONCLUSIONS

When it comes to children's education parental beliefs are extremely influential on several levels (Bourgonjon et al., 2011; Skoien and Berthelsen, 1996; Whitebread et al., 2012). Skoien and Berthelsen (1996) contended, "An exploration of parental thinking, behavior and other contextual aspects of families in relation to video games will provide insight into that impact" (p. 2). It is important for educators and researchers to understand parental feelings toward gaming as it may contribute to the decisions teachers and administrators make. These include assigning homework, creating projects, and integrating innovative technologies into the classroom. In addition, parents might greatly benefit from what Buckingham and Burn (2007) called game literacy. This approach might allow us to teach "about games as a cultural medium in his or her own right, just as we teach about film or television or literature" (Buckingham and Burn, 2007, p. 323).

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