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Video Games

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“People acquire new knowledge and complex skills from game play, suggesting gaming could help address one of the nation’s most pressing needs – strengthening our system of education and preparing workers for 21st century jobs.” – [Summit on Educational Games 2006](#).

It may be surprising, but recent video game research has demonstrated positive health, social, and educational related benefits from video game play. Many parents and teachers fear the negative effects of video games, worrying that video games will turn their children into mindless, violent, isolated, unhealthy individuals. While some of these concerns are not completely unfounded, video game research has uncovered a wide array of effects of video game play, including many positive influences of video games in the lives of children. The purpose of this article is to provide a picture of the influence of video games on children. The gaming industry, children’s use of video games, and the potential positive and negative effects of video game play are discussed. Additionally, we make suggestions for how parents and educators may encourage positive use of video games in children’s lives.

Video Game Industry

The video game market is approximately a \$10 billion per year industry in the U.S. (ESA, 2008), and sales figures continue to

rise despite the depressed economic times. This form of entertainment is not merely a childhood pastime, however, with the average age of the video game player being 35 years old (ESA, 2008). The growth of the industry may be, in part, due to the increasing numbers of adults and females playing video games. In fact, 40% of players are female, demonstrating that video games are certainly not just for boys or men. As the popularity of video games has increased, parents, policy makers, and scholars have raised concerns about the effects of video games on children, in particular.

Children and Video Games

According to the Kaiser Family Foundation (2005), 83% of children ages 8-18 years old have a video game console in their household, and they spend nearly one hour per day playing video games. Some common misconceptions of video game players are that they are unhealthy, socially isolated, and spend too much time playing games. In fact, a report finds that 79% of gamers exercise at least 20 hours per month, 93% regularly read books or daily newspapers, and 51% play games with others at least once a week (Peter D. Hart Research Associates, 2004).

Examining Missouri Data

To attempt to see how Missouri children are faring on this issue, data from the Missouri School Improvement Program (MSIP) were examined. In particular, responses to the question “How many hours a day do you spend playing on the computer

or with video games?” were queried. Data from the 2007-2008 school year were used and included responses from 34,237 middle school and 36,591 secondary students. In addition, 71,405 parent respondents were asked about how many hours their child played on a computer or with video games.

Overall, about a fifth of students (21% of middle school and 19% of high school) report playing on a computer or with video games for 2 hours daily.

The majority of parents responding were the students’ mothers and most (79%) felt their child spent an hour or less playing on a computer or with video games. As for the students, about half (48% of middle school students and 53% of high school students) reported 1 hour or less per day playing on the computer or with video games. Additionally, while less than 1% of parents reported 6 or more hours of use per day, almost 8% of middle school students and 6% of high school students reported 6 or more hours of use daily – see **Table 1**. This was highest among boys with 10% of 6th-8th grade boys and 9% of high school boys reporting 6 or more hours of use per day. Among those in middle school who reported playing 6 or more hours per day, two-thirds were boys and a little less than a third were girls - see **Table 2**. This was also the case among high school students. When examined by race, the percent of middle school children playing 6 hours daily was more than double for African American children (13%) as for Whites (6%) – see **Table 3**.

Harmful Content and Effects

Violence

One of the most examined effects of video games is the impact of violent video games on aggression. This concern is fueled by news of extreme cases, such as 17-yr old Warren LeBlanc killing a teen boy in England using acts of violence similar to those used in the game *Manhunt* (BBC News, 2004). Indeed, the video game industry has received scrutiny for its propensity to produce violent video games. Approximately 89% of video games contain

some type of violence, and nearly half of all video games contain serious violence (Children NOW, 2001). So, do violent video games make children violent? The issue is not a simple one, but, yes, we do know that there is a relationship between media violence and aggression. Exposure to violent media has been linked to aggressive thoughts and behaviors, mostly in the short term. The most vulnerable individuals are young individuals and individuals who are high on the trait of aggression. Thus, children who are naturally aggressive are the most at risk for increases of aggression following violent video game play. Parents of children who tend to be aggressive should be especially cautious about making sure that their children are not being exposed to violent video game content.

Additionally, exposure to violent video game content may result in other types of effects, such as fear and desensitization. First, children may have a fear reaction to violent video game content, in much the same way they would when exposed to graphic images and stories in television news or entertainment programs and films. Second, children may become desensitized to violence after repeated exposure, such that they no longer experience an emotional response to violence and victims of violence. This results in less empathy or concern for the negative consequences of violence and the impact of violence on victims. It should be noted, however, that these effects are certainly not isolated to video games, and the contribution of video games (and other media) to children’s aggression, fear, and desensitization may work in combination with other factors in their environment. Advances in current video game research are helping to pinpoint the individual differences (e.g., trait aggression) and game characteristics (e.g., graphical realism) that may help better explain why some games have some effects on some people. This research will aid parents in judging which games are appropriate for their children to play.

Social Messages

Often overlooked are the harmful *social* messages present in some video games. For example, video games often contain stereotypic gender representations, presenting limiting and negative portrayals of women. Females are underrepresented in video games, accounting for approximately 17 percent of all characters (Children NOW, 2001). Overall, research suggests that when female characters do appear in video games they most often serve as victims or prizes (Provenzo, 1991; Dietz, 1998; Sherman, 1997) and occupy stereotypical gender roles, such as sexualized beings and objects of sexual desire (Beasley & Strandley, 2002; Dietz, 1998; Ivory, 2006). For instance, Children NOW (2001) reports that female characters were two times more likely than male characters to be depicted wearing revealing clothing. Further, depictions of princesses and other hapless female characters in need of rescue are plentiful in video games. However, females are not just limited to the role of the damsel in distress or submissive background characters; they are sometimes granted the role of the hero, but most often they are confined to the role of the *sexualized* female heroine. The characters, such as Lara Croft, are strong and heroic, but are defined by their sexualized appearance.

What Can Parents Do?

Game companies label games with a rating system created by the Electronic Software Ratings Board (ESRB). This rating system operates similarly to a movie or TV program rating system, indicating what age level the game is appropriate for and what types of potentially objectionable content (e.g., violence, language, sexual content) are present in each game. Parents should pay attention to ESRB game ratings, as they give some indication of whether or not the content is appropriate for their child.

However, this rating system is flawed, and not always an accurate representation of what is actually in the game. Thus, parents should ask questions when buying the games and look at game advertisements and trailers to get a clearer

picture of what it is they are buying their child. Perhaps most importantly, looking at what your children are playing and talking to them about these games helps to reveal game content and their reactions to the game representations. Further, having discussions about the game content will help children to think about what they are seeing. This parental involvement helps to develop children into media literate individuals who are better equipped to make good media choices.

Prosocial Effects of Video Games Education

Rosas, et al. (2003) pose the question “Why introduce computer games in schools?” Video games provide students with unique opportunities to explore new cultures and ideas in a way that most traditional learning aids do not. Students can become the leader of a foreign land; design a city; conduct a science experiment; and tackle all sorts of new challenges in a vivid, engaging virtual landscape. Moreover, games make learning a social experience, often allowing players to collaborate with or compete with other students.

Games “provide an inquiry-based learning experience” (Schmidt & Vandewater, 2008) and are highly interactive. Students learn through trial and error and are rewarded in the video games for trying new strategies until they achieve the goals. Traditional curricula, such as science, reading, and math, can be supported by the use of educational video games.

Additionally, the introduction of video games into education helps students to develop new ways of thinking and solving problems (Schmidt & Vandewater, 2008). Video games improve players’ visual-spatial (Greenfield, 2009) and problem-solving skills (Gee & Levine, 2009). Experts argue that taking advantage of this new technology for educational purposes will help to produce a more intellectually sophisticated and successful generation of children. In essence, video games have the potential to

develop our children into better thinkers and learners.

Health-Related Behavior Change

While it is beyond the scope of this article to conduct an exhaustive review of this literature, we would like to highlight some very positive findings. In particular, video games have been successfully used to increase patient knowledge and disease prevention and management in children and adults. For example, video games have been used to help teach children how to cope with medical conditions such as asthma. Clinical trials were conducted to investigate the impact of three interactive, health-related video games, and the findings are very promising.

- “Fewer urgent care and emergency visits related to chronic conditions, with the number of visits dropping as much as 77 percent”;

- “Improved knowledge about health, awareness of risk factors, and attitudes about prevention”;
- “Increased confidence and self-efficacy for carrying out self-care behaviors”;
- “Better daily self-care and self-monitoring for chronic diseases”;
- and
- “More discussions about one’s health condition with peers, family and clinicians – a factor associated with improved social support and health.” (Lieberman, 2001, p.26)

These clinical trials demonstrate that video games can be a very helpful and cost effective tool in the health industry. So, despite what we often hear about fears of video games being linked to negative health outcomes, playing certain types of video games can be very good for one’s health.

Missouri School Improvement Program Data

Table 1.

Hours/day playing on the computer/video games	1 or less		Number
	6 or more		
Parents	79.3%	0.5%	69,306
Middle School	48.2%	7.6%	33,904
High School	53.0%	6.5%	36,315

Source: Missouri School Improvement Program, 2007-2008.

Middle School

Table 2.

How many hours a day do you spend playing on the computer or with video games?							
By Gender	1 or less	2	3	4	5	6 or more	Number
Boy	44.7%	52.0%	55.5%	60.0%	61.1%	67.7%	17,263
Girl	55.4%	48.0%	44.5%	40.0%	38.9%	32.3%	16,592
	100%	100%	100%	100%	100%	100%	

Note: Percentages are calculated by hours of playing on a computer/with video games to illustrate the differences in hours played by gender.

Source: Missouri School Improvement Program, 2007-2008.

Middle School

Table 3.

How many hours a day do you spend playing on the computer or with video games?

By Race	1 or less	2	3	4	5	6 or more	100%	Number
White	51.0%	21.1%	11.6%	7.0%	3.4%	5.9%	100%	24,016
Black	39.1%	20.4%	13.7%	9.0%	5.4%	12.6%	100%	5,937
Asian	41.1%	19.7%	14.4%	8.9%	4.3%	11.6%	100%	700
Am. Ind.	46.5%	19.5%	10.9%	6.9%	4.6%	11.6%	100%	1,085
Hispanic	45.6%	20.4%	13.6%	7.7%	4.0%	8.7%	100%	2,071

Percentages are as a percent of students of a particular race to illustrate differences in hours played daily by race.

Source: Missouri School Improvement Program, 2007-2008.

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Online Resources

Academic Skill Builders: Online Educational Video Games
<http://www.arcademicskillbuilders.com/>

Educational Games Research: Research and Discussion Concerning Instructional Video Games
<http://edugamesblog.wordpress.com/>

Entertainment Software Ratings Board (ESRB)
<http://www.esrb.org/index-js.jsp>

Center for Media Literacy
<http://www.medialit.org/>

Children and Media, PBS Parents
<http://www.pbs.org/parents/childrenandmedia/>

Kaiser Family Foundation Program for the Study of Media and Health
<http://www.kff.org/about/entmediastudies.cfm>

Serious Games Source
<http://seriousgamessource.com/news.php>

Violent Video Games: Myths, Facts, and Unanswered Questions (by Craig A. Anderson)
<http://www.apa.org/science/psa/sb-anderson.html>

Video Games Can Reshape Education: U.S. Scientists
<http://www.cbc.ca/technology/story/2006/10/19/videogames-education.html?ref=rss>

Video Games to Revolutionize Health and Health Care
http://www.thehealthcareblog.com/the_health_care_blog/2008/10/video-games-to.html

Web Wise Kids
<http://www.webwisekids.org/>