

Case 13



Let the Games Begin: Positive and Negative Influences of Video Games in the K-12 Classroom



Background Information

Children in elementary, middle, and high schools have become obsessed with computer generated games. Children once rushed to after school sports, extracurricular activities, and even homework. Now, it seems as if everyone is rushing to a video game. Because video games are so popular and fascinating, it is easy to get addicted to them. Therefore, it is becoming harder for parents and educators to keep their students motivated in the classroom. Given the pervasive influence of video games on American culture, many educators have taken an interest in what the effects these games have on players, and how some of the motivating aspects of video games might be harnessed to facilitate learning (Squire, 2003).

Video games are popular with children and teenagers because they are engaging and entertaining. Bowman (1989), as cited in Squire (2003), says that students in traditional, teacher led classes, have little control over what they learn, are passive recipients of material chosen by teachers, must conform to the pace and ability level of the group, and are given shallow, imprecise normative feedback on their work. In the classroom, a student may become bored easily if the educator is using a monotonous tone, is not interesting, or is presenting information the student already knows, or has no clue about. With video games there are different sound effects and animation and no one knows what is going to happen next. Video games allow children to progress through different levels and have a sense of accomplishment after a round is completed. Bowman suggests that educators could use video games as a model for improving the learning environment, by providing clear goals, challenging students, allowing for collaboration, using criterion based assessments, giving students more control over the learning process, and incorporating novelty into the environment (Squire, 2003).

The Education Arcade is one plan that wants to raise educators' awareness of using video games in the classroom. The creators of the Education Arcade want to get scholars, game designers, and students on the same page when it comes to technology. Squire (2004), as cited in, Chaptman (2004) says, "kids spend more time playing games, generally, than watching TV. We want to help teachers, parents, and policymakers understand the roles of games in education" (¶. 4). If more video games are used in the classroom, students will have broader opportunities to explore topics that interest them, in a way that is interesting. A group of designers created a game called "Supercharged!" It is an electromagnetic simulation game in which players navigate through magnetically charged mazes. The game requires students to understand how atomic particles work. The game was used in a science curriculum at a middle school and students who played the game outperformed those who used a traditional curriculum by 20 percent in a final test of main concepts (Chaptman. 2004).

Although it seems as if video games in the classroom would solve a lot of students' problems, there are some who are still skeptical. There are some parents and educators who feel that school is a place to learn, not play. There is evidence of concern from not only parents and educators, but students as well. In a study done in the UK more than 70% of the surveyed teachers felt that playing games could lead to anti-social behavior while 30% of students believed that playing games could lead to increased violence and aggression (BBC NMIX, 2006).

In conclusion, using video games in education will have some positive and negative influences on parents, educators, and students. Video games can enhance learning and lead to healthy competition. However, the competition may turn into a fight; or aggressive behavior may occur if a student loses. When using video games in education, all involved parties should keep an open mind and be aware of potential outcomes.

Preview

Video games in the kindergarten through twelfth grade classroom are catching the attention of more than just students. Using educational video games allows students to "succeed through failing". If a student does not win on the first or second rounds, it usually motivates them to keep trying and persevering until they win. There are some instances, where losing may lead to a sense of failure, and a student may be disappointed. Nonetheless, video games increase memory due to repetitiveness; and can encourage a healthy competitive spirit.

Focus Questions

As you read this case study, keep the following questions in mind:

- 1.) Should educators use educational video games in their classrooms to enhance learning?
- 2.) What are some positive influences of video games in the classroom?
- 3.) What are some negative influences of video games in the classroom?
- 4.) Should the use of video games be written into Individualized Education Plans (IEP)?

The Case

Lance Loves Learning

Lance is a fifteen year old eighth grade student who has been retained twice. He was diagnosed with Attention Deficit Hyper Disorder (ADHD) when he was a first grader and also as having a learning disability in the area of reading. Lance's IEP says that he loves learning, but he has always struggled to keep up with his peers academically. Lance is a quiet, yet sociable student. He enjoys going swimming, playing video games, and hanging out with friends. Football is his favorite sport to watch and play.

Lance's homeroom/math teacher, Mrs. Joy, recently discovered that Lance was no longer eligible to play on the school's football team because his grades had fallen below a C average. Therefore, she decided to step in and intervene. While in her classroom, she made instructional accommodations for him in order to encourage success. She provided extra time for him to complete assignments, gave fewer problems/questions, offered peer assistance, and one-on-one tutoring after school. As Mrs. Joy continued to monitor Lance, she realized that nothing seemed to be working. She met with his other teachers, and they all concluded that Lance was having the same problems in their classes as well.

As the month went on, nothing seemed to be motivating Lance. Finally, Mrs. Joy decided to give her entire homeroom an interest inventory. The inventory asked questions about what the students liked to do in their spare time, what they liked and disliked about school, and, if they could invent something what would it be. Mrs. Joy was shocked to see that Lance enjoyed playing video games more than football, and the one thing he disliked about school was getting fewer assignments and peer assisted. She went on to read that Lance wanted to invent a game that would help him learn better in school.

After reviewing Lance's interest inventory, Mrs. Joy decided to introduce Lance to *Kurzweil 3000*. *Kurzweil 3000* is a reading, study skill, and writing program for students in grades 3 through adulthood. Educators can use the game to help struggling learners like Lance. Not only did the game help Lance learn while doing something he enjoyed, but it also helped Mrs. Joy differentiate instruction without having to differentiate the curriculum. Lance seemed to be doing so much better; Mrs. Joy decided to research other games that Lance could possibly use in his other classes. Mrs. Joy discovered *Carmen San Diego* to improve Lance's geography and history skills, *Supercharged!* to help him with physics, and *Time Engineers* that not only teaches math, but science as history while time-traveling through 3-D interactive environments.

Last week, during physics class, Lance finished his work early, so he asked his teacher if he could play *Supercharged!* and his teacher said, "Yes." Lance's friend, Greg, was curious as to what Lance was doing, so he asked if he could play as well. The two boys played the game and they started to become very competitive. Lance navigated his spaceship by controlling the electric charges but Greg planned his trajectory more carefully and began to place charged particles around the space before Lance did. The boys were racing to win and finally Greg completed the task first. Lance became so upset with Greg that he began shouting at him. Before the teacher could intervene, Lance punched Greg and told him that he had no business playing his game anyway.



Questions for Discussion

- 1.) How should the teacher/principal deal with the issue?
- 2.) Should the teacher have let Lance play the games by himself?
- 3.) If Lance is allowed to play games again, should there be stipulations?
- 4.) How could the teacher have prevented the altercation?
- 5.) Was the fight escalated due to the video game or could this have occurred in any situation?

Links

- <http://www.kurzweiledu.com/>
- <http://carmen-sandiego.com/>
- <http://www.educationarcade.org/>
- http://www.software-kids.com/html/time_engineers.html

Resources

BBC NMIX (2006). Video games have 'role in school'. Retrieved March 13, 2009:
<http://news.bbc.co.uk/>.

Chaptman, D. (2004). Video-games in the classroom. Retrieved March 5, 2009:
<http://wisetechnology.com/>.

Squire, K. (2003). Video games in education. *International Journal of Intelligent Simulations and Gaming*, 2(1), 49-62.

Picture of Cartoon Children from: theexplodingbarrel.com

Picture of Boys from: www.fcps.net/media/214270/video%20games.jpg

The University of Alabama Computers and Applied Technology Program (2009). *Technology Education: A series of Case Studies*. Available at <http://www.ua.edu/edtechcases>.