

Making Sense of Video Games: Pre-Service Teachers Struggle with This New Medium

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Abstract: This next generation of students has had exposure to digital media far more than any previous generation, particularly video games. Almost daily, news outlets report the latest news on the evils of video games, how much children are playing video games, the potential of video games, and the list just goes on. In this presentation, the researchers explore how pre-service teachers make sense of a commercially purchased video game and its role in classroom teaching.

Contemporary popular and educational literature attributes much of the growth in the video game industry to generational differences ascribed to today's youth. The notion that today's youth are different than previous generations and that this accounts for the dramatic increase in the popularity of video games has become a common one, both in the popular media and within more academic literature. One of the first to expound on this labeled these students the "net generation," which included those born after 1977. While the author acknowledged that not all of those born during this time frame have access to the Internet yet, he claims that they all have "some degree of fluency with digital media" (Tapscott, 1998). Future authors also gave the next generation a label based on a specific date of birth, for example, the "millennials," which was based largely upon research conducted with youth from an affluent D.C. suburb (Howe & Strauss, 2000). One of the most popular labels has been "digital natives," differentiating those who are "native speakers' of the digital language of computers, video games and the Internet," from those who are not native to this digital language, but rather are "digital immigrants" (Prensky, 2001).

These authors contend that today's teenager has grown up surrounded by digital technology since birth. Of these digital technologies, the one that has experienced the most growth in recent years has been video games. For example, in 1999 the video game industry was valued at \$7 billion to \$7.5 billion in the United States, surpassing the movie industry for the first time (Cohen, 2000). Some have even indicated that by the time the average student has graduated from college that student has "spent fewer than 5,000 hours of their lives reading, but often more than 10,000 hours playing video games" (Prensky, 2006). If this is the reality of the students that we now encounter in our classrooms, is there a way to harness students' knowledge and these thousands of hours of experience with video games to teach complex social studies concepts?

In this paper, we describe a qualitative research study that examined how pre-service teachers made sense of playing an over-the-counter video game. We were specifically interested in how these undergraduate students were able to make connections between the content of their video games and the social studies curriculum (using both the state-wide and national standards), and whether or not they were able to determine potential uses for these video games in their future classrooms.

Why video games in the classroom?

Buckingham (2003) argued that “schools need to make much stronger attempts to address and build connections with young people’s media cultures” (p. 313). However, the use of games in social studies is not a new concept. Many of the simulations, both electronic and non-electronic, that have been used by teachers for decades are essentially games (VanSickle, 1986). Even the use of video games in the social studies classroom is not a new idea. Numerous “edutainment” titles, such as *Oregon Trail* and a variety of simulations by Tom Synder, have been fixtures of the classroom for many years. Teachers have also experimented with the use of commercial, over-the-counter, video games, such as *Sim City*, *Civilization*, the *Tycoon* series, and, more recently, *Making History*. The natural curricular ties with these types of simulation software make them popular with classroom teachers. Berson (1996) noted simulations “allow students to engage in activities that would otherwise be too expensive, dangerous, or impractical to conduct in the classroom” and simulations also “facilitate the development of students’ problem solving skills and place students in the role of decision makers” (p. 490).

However, research on their effectiveness in the classroom (while abundant) has largely been limited to generalized statements about improved test scores, with little discussion of the methodology, control groups, and actual statistical significance (e.g., McDivitt, 2005; Teague & Teague, 1995). Many technology researchers have called into question much of this body of research, indicating that the lack of ability to control variables, such as the changes in teacher pedagogy that come with the introduction of technology, are the real causes of the differences in student performance (Clark, 1983; Reeves, 2005).

Methodology

As a part of a class on the subject of the use of role play, simulations and video game in the social studies classroom at a large state university in the southeastern United States, twelve undergraduate pre-service teachers were asked buy and play a commercially available, over-the-counter video game for a minimum of two hours each week over a twelve week period. In conjunction with their game play, they were also asked respond to a series of questions in the form of reaction papers about the course readings that they were completing and their own video game play (see citations marked with a * for a list of the course readings).

The specific directions given to the students for their reaction papers were as follows:

The purpose of the reaction paper is twofold. The first is to provide an opportunity for you to reflective journal your journey through the video game that you purchased. The second is to reflect on your own experiences playing your game. You should try and relate your experience to the literature that you are reading, the discussions that we are having in class and on WebCT, and how does or could your experiences or your game relate to a social studies classroom. When you relate your experiences to these things, try to be specific.

In addition to these general reflections, each week the students were also asked to address specific questions in their reaction papers, including:

1. Why did you select the particular game that you purchased? What are your first impressions of playing the game?
2. While Gillespie isn't talking about video games, is anything she says relevant to your own game play? Rieber talks about how play can be a powerful learning experience, what have you learned about your game?
3. What have you learned about the story or narrative of your game? In your K-12 experience, do you ever recall playing a game in school? If so, what lessons did you learn from it?

4. Under "Simulation and Gaming Resources" go to the "Grading the Educational Value of Popular Video Games" and search for your game. Do you agree with the comments made in this review? Why or why not? If your game hasn't been reviewed, click on "Game Ratings" and select "Understanding the Ratings". Using these categories, how would you rate your game?
5. Have someone of the opposite gender, not in this class, play your game for at least one (1) hour. Based on your reading of Dickey and that person's experiences, how is your game perceived by the opposite gender?
6. Based on your reading of Gee and your own game play experience, have you experienced the things that Gee has described? Explain.
7. Squires completed his Ph.D. dissertation on using *Civilization* in middle school and high school history classrooms; can your game be used in a social studies classroom? If so, how? If not, why not? Be specific and use both the state-wide standards and the National Council of Social Studies standards in your discussion.

The data from these reactions papers were coded independently by two researchers using an open coding technique (Strauss & Corbin, 1990). During this first stage of coding we were interested in examining the concept of teaching or classroom practice in pre-service teachers and how video games either help inform that practice or do they distract the pre-service teacher from established teaching methods. We were also interested in how was the students' video gaming experience was informed by the readings they were assigned and the role of gender in the types of games that the participants chose (as four of the twelve participants were female).

After the initial coding, we met to compare the code book that we had each developed and combined them to form a single set of codes. The data will be coded a second time using this combined set of codes.

Preliminary results and discussions

At present, we have only completed the first round of coding (i.e., where we both coded the data individually) and our results are based upon the themes that have emerged to date. Nevertheless there were two preliminary themes that we have tentatively identified based on this initial coding. The first theme was that all twelve students were able to identify content within their video games that was consistent with both the state-wide curriculum standards and the standards of the National Council for Social Studies. However, these future teachers had difficulty in identifying opportunities where those connections could be used in their future classrooms. These findings are consistent with Evans and Barbour (accepted; in preparation), who described examples curriculum connections with the content of the video games *Guild Wars* and *Grand Theft Auto: San Andreas*. They have also argued that because students are so familiar with the content of video games that teachers should use this schema in the same way that they would use the students' knowledge of those local historical sites, geographic landmarks, or a principal community employer. The students, for the most part, did not even make this connection to their future classroom, instead struggling with how to bring the actual video game into their classroom.

The second theme that we have identified from the initial coding is that the four female undergraduate students were able to make more and more creative connections between the content of their video games and the social studies standards than their male counterparts. These four students also had more success, although still somewhat limited, with describing how they might incorporate their video game in their future classrooms. One of the reasons for both of these findings may be because half of the female students selected games that had more natural ties to the curriculum. For example, one student selected *Civilization*, "a turn-based strategy game. The player establishes a settlement that with luck, skill, diplomacy, mercantile savvy, technical attainment and military guile will expand to thrive for six thousand years" (Carr, 2007). According to Squire (2004), a game like *Civilization* allows players to

have the opportunity “to explore relationships among geography and politics, economics and history, or politics and economics – interdependencies that can be difficult to discern through more conventional means” (p. 22). Another female student selected *Call of Duty*, a role playing game that is based upon actual Allied missions during World War II.

Conclusions and implications for practice

The analysis of the seven reaction papers written by these twelve students is still in the preliminary phases, but will be completed by November 2007. The initial findings indicate that pre-service teachers are able to see curricular connections to many commercially successful video games, but find it more difficult to see how they could be used in their future classrooms – with the exception of those games that have natural curricular ties, such as *Sim City* and *Civilization*. While these video games are more readily accessible to classroom teachers because they have a more direct connection to the curriculum, the reality is that these are not games being played extensively by today's youth.

Teachers need to explore ways to incorporate knowledge of games that are actually popular with young people into their classroom. For example, Prensky (2006) discussed the use of massive multi-player online role-playing games such as *RuneScape* and *Toontown*, while Gee (2003) described what can be learned from a variety of networked and non-networked games such as *Pikmin*, *Arcanum: Of Steamworks and Magick Obscura*, *Deus Ex*, *Tomb Raider*, *Sonic Adventure 2 Battle*, and *Everquest*. We are not advocating the large scale purchase of video game consoles and the wholesale use of video games within the classroom. What we are suggesting is that teachers should recognize the role these games can play in bringing real life examples of abstract concepts to our students. In this presentation, we hope to introduce the audience to some recent literature about the changing nature of our students and how video games, something seemingly of more interest to today's youth than ever before, can be used to teach social studies concepts and how these twelve pre-service teachers struggled with this issue.

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