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Modding the Global Classroom? Serious Video Games and Teacher Reflection

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Abstract

Video games are increasingly popular with youth though scarcely evident in schools. Serious video games, or those that simulate the real world, motivate players, require decision-making, and encourage student learning about an issue, have the potential to educate students about global issues. Global education, given its heritage as an experiential, contemporary, and issues-centered education, would seem to be an ideal point of entry for such serious video games since their educational aims are one and the same. This study examines teacher reflective experiences with serious video games that have a global orientation. Findings are clustered around data categories, including skepticism about pedagogical value of video games, openness to global learning available through this medium, and tensions between representational complexity and realism. This study contributes to what is known about teacher thinking in relation to the pedagogical use of video games, particularly those focused on global content, and includes implications for teaching and research.

Video games offer possibilities for personalized meaning-making, individual expression, and experimentation, infrequent activities in traditional education. Schools are most often geared toward teaching discrete bodies of knowledge in an authoritative manner that affords students relatively few opportunities to make decisions about their learning and engage innovative ways of thinking about content. Video games are increasingly popular in a wider “culture of simulation” (Squire, 2006, p. 19), as they encourage students to build stories, learn in situated and embodied ways, and probe, hypothesize, and theorize (Gee, 2003b, chapter 4). While video games are not a panacea for improving schools, they may offer an opportunity for students to think differently, particularly in relation to learning about the world. Despite these possibilities, video games are not yet widely used in schools (Shaffer, Squire, Halverson, & Gee, 2005). Teachers generally lack interest in them and some are suspicious about the connotation of “playing” in learning (Shaffer et al., 2005). Popular discourse has posited games as a wasteful distraction rather than as learning tools, and teachers, to varying degrees, have adopted this belief.

A longstanding tradition exists in social studies for the use of classroom-based simulations, however, which are decidedly gamelike. Simulations have been studied as promoting student capacity for historical empathy (Yeager, Davis, & Foster, 2001) and building students' historical imagination (Wineburg, 2001). Simulations witnessed a heyday in social studies during the 1960s and early 70s, only to wane under the conservative restoration in subsequent decades (Rice, 2007). Similarly, serious video games allow participants to take on the perspective of another person, explore how they might respond in various situations, and develop empathy for alterneity through such activities. Global education, given its relatively brief heritage as experiential curriculum that aims to develop student awareness of social problems, inquiry skills, and capacity and attitude for civic action (Gaudelli, 2003), would seem to be an ideal platform for the introduction of serious video games, since their educational aims are essentially the same.

This study examines the pedagogical value of serious video games in the context of global education. We consider how teachers value serious games of a global nature through experiential reflection. We employed a series of face-to-face focus group meetings and online asynchronous dialogues wherein teachers articulated their experiences related to playing video games. This study finds that teachers in our group were generally skeptical about the pedagogical value of video games, though they demonstrated increasing openness to the possibility of global learning through this media while raising issues of representational complexity and realism complicated by such curriculum material. This paper concludes with reflections on the implications of this study in terms of teachers' practice and research as a practice.

Modding, as used in the paper title, refers to how mass-produced software, such as video games and simulations, either have built-in alteration settings or can be changed through an external, add-on program. Video games are adaptable but the term is used in a double sense, indicating that these tools may change global learning.

Background

Educators have used both gaming and traditional simulations for learning purposes in classrooms for decades (Squire, 2003). In a review of games and simulations in the social studies, Clegg (1991) presented findings on digital and nondigital simulations, showing evidence of student motivation, engagement, and some knowledge outcomes. Early studies show evidence of traditional simulations as promoting realistic experiences and understanding of how a social system works.

When teaching about international relations, Cherryholmes (1966) found that the Inter-Nation Simulation game engaged more students, but did not employ the learning of more facts and principles. Similarly, the early studies on digital simulations found evidence of increased critical thinking and problem-solving skills of student participants. Clegg (1991) contended that a potential exists for simulations to have a positive impact on students when they have more involvement in the decision-making and problem solving aspects of the game.

Supporting Clegg's argument, VanSickle (1986) found that nondigital or traditional simulations resulted in various forms of attitudinal change, which he argued could have been due to the degree of student control and influence over the simulation game outcomes. Shortly after these studies were published, the dawn of the Information Age and the proliferation of the Internet in 1991 (Friedman & VanFossen, 2010) allowed for the development of virtual communities. While U.S. society was becoming increasingly oriented toward using technology, schools attempted to hold onto the traditional notions of schooling a bit longer.

Technological wariness is a longstanding issue in schools, as teachers historically have been leery of innovations due, in part, to the flash-in-the-pan quality of many initiatives (Cuban, 1986, p. 61). Schaeffer et al. (2005) contended that a majority of secondary students participate in some form of video games and that most teachers do not and, thus, find little value in them. Yet, video games have become pervasive in youth culture, with 81% of 8- to 18-year-olds playing at least once per month, 13-14 hours per week, and nearly one quarter (23%) report “feeling addicted” (Video Game Addiction, 2007). Critics have also argued that games are often misogynistic and violent (Sandler, 2003), lack substantive content, and are a waste of time (see Gee 2003a, chapter 2). Others have argued that they pose physical danger to students, as Anderson and Dill (2000) for example, found that violent video game play was positively related to aggressive behavior and delinquency.

A growing body of literature supports thoughtful use of video games as pedagogical tools, however. Gee (2003a) argued that video games permit players to take on projective identities, such that they can idealize their hopes, values, and beliefs through an avatar. He added that the games are highly sophisticated learning sites that require students to develop complex schema and cognitive skills that are transferable in a variety of ways.

Similarly, Squire (2006) contended that educators might find pedagogical potential of videogames through studying the “designed experiences” whereby students learn “through a grammar of *doing* and *being*” (p. 19), and experiences occur “from the intersection of design constraints and players intentions” (p. 26). Gee (2003b) argued that as video games progress to new levels,

Each level dances around the outer limits of the player's abilities, seeking at every point to be hard enough to be just doable. In cognitive science, this is referred to as the regime of competence principle, which results in a feeling of simultaneous pleasure and frustration—a sensation as familiar to gamers as sore thumbs. (p. 17)

This experience is not unlike learning to ride a bike, as the novice experiences great frustration and sheer joy when the complex composite of skills is mastered to maintain balance while moving forward. Indeed, game play is congruent with other forms of learning, such as the mastery of a musical instrument that requires decoding notes while adjusting fingering and airflow to produce sound.

Serious video games are emerging with greater vigor lately as game producers attempt to leverage the engagement of play for real-world ends. Serious video games simulate the real world, motivate players, require decision-making, and ultimately, educate them about an issue, according to Barry Joseph (2010), game producer and founder of *Games for Change*. They manifest in a variety of forms, from simulation training for combat to global warming policy-making to role-player games that involve being a journalist in a war situation. As serious video games dally with grave subject matter, some are alarmed by the notion of playing with human suffering and loss. Though we know of no studies that examine this theme explicitly, such juxtaposition is naturally provocative to some, alarming to others.

Research about the educational value of serious games, beyond their moral implications, is also lacking given their novelty (deFreitas & Jarvis, 2007). The studies conducted to date, although limited in number, suggest some value in playing serious video games. Chuang and Chen (2009) engaged 108 third-grade students in Taiwan with video game and computer-assisted instruction about firefighting. They found that students who played the video game version of learning about firefighting improved their fact/recall

process and identified multiple solutions to problems to a statistically significant greater degree than for those working with computer/text instructions. Despite narrowly construed studies like this one, the potential of serious video games remains largely unexamined.

Global Education and Digital Media

Global education is often described as an aggregate curriculum with a lineage that can be traced through international relations/political science, anthropology, environmental study, economics, and history. Hanvey (1976) offered five elements of a global perspective, including (a) perspective consciousness, (b) knowledge of world conditions, (c) cross-cultural awareness, (d) knowledge of global dynamics/systems, and (e) knowledge of human choices. Pike and Selby (1999) argued that global education unites two traditions, world-mindedness and child-centeredness, across four dimensions of analysis: temporal, spatial, issues, and inner.

Given its aggregate nature, some lament global education's ambiguity, not surprisingly. Popkewitz (1980) referred to it as a slogan system mired in linguistic confusion. Lamy (1987) proposed that it is an undefined amalgamation in search of scope and method. Werner and Case (1997) suggested that global education need not exist as a separate curricular entity, but potentially could reside in all curricula that examines interconnections, perspectivity, alterneity, and caring.

We define global education as curriculum that seeks to prepare students to live in a progressively interconnected world where the study of human values, institutions, and behaviors are contextually examined through pedagogy that promotes critical engagement of diverse information toward socially meaningful action (Gaudelli, 2003).

Emerging in the 1960s, a variety of convergent events contributed to the birth of this curriculum field, including horrific genocides, devastating world wars, use and proliferation of weapons of mass destruction, burgeoning human population growth, and environmental degradation. Institutions were established, many in direct response to these global problems, including the United Nations and countless subsidiary groups, tens of thousands of nongovernmental organizations, international covenants on human rights, treaties limiting weapons of mass destruction, and other agreements calling for a cessation of environmental degradation. Global education developed within this wider context as a means of preparing young people to live in an increasingly problematic world, yet a world in which young people could make choices to improve the larger society (Gaudelli, 2003, 2007).

Improving the world, however, requires a vision of that world and the problems of it. Media has become a center point for such investigations, as it provides a way of viewing distant people, issues, and circumstances in the immediacy of one's living room or computer screen. The "global visual imaginary" is an important feature of this contemporary landscape, as media has become ubiquitous and integral to how we know the world (Dussel, 2009, p. 89). Increasing attention is paid to young people's fecundity with visual devices given their status as "digital natives" in a culture of simulation (Prensky, 2001; Squire, 2006). Yet, much of this first wave of digital media literature has been celebratory, viewing such technologies as potentially liberating youths from their educational yokes. Recently, however, is a more circumspect view of digital media has emerged, one that expands the scope to other educational agents, such as parents, community members, and schools, while expanding the discursive character of the conversation.

The current study is in keeping with this second line of research, as it examines how teachers engage with video games and the pedagogical insights they draw from these media. Serious video games, like those studied herein, may provide an opportunity both to capture a larger view of the planet in its interactive complexity and to do so in a manner highly engaging to adolescents.

Teachers need more than aphorisms about the prevalence of media in the lives of youths and their global possibilities, however; they need experience with such dynamic visual texts as pedagogical tools. Using serious video games designed to engage students' emotions and judgment as well as their capacity for reasoned decision-making supports the essential aims of global education. If teachers are unwilling or unable to consider their use, whatever potential may be available in serious video games will likely never be realized by students. Our aim, then, is to explore the meaning that teachers develop from playing video games as well as their critical analysis of use in classrooms.

Reflective Experience of Teachers

This study is situated within a theoretical framework of learning to teach through reflective experience. Teachers as experiential learners couples Dewey's (1916/1944) notion of experience with his articulation of thinking (1910/1977) along with more recent scholarship related to learning to teach through reflective experience (Calderhead, 1989, 1992; Fendler, 2003; Schon, 1983, 1987; Segall & Gaudelli, 2007; Zeichner, 1996; Zeichner & Liston, 1996). If teachers are to examine the implications of using a technology like video games, such reflective thinking must occur through teachers' experience with the objects themselves.

The premise of this study is that learning to implement new pedagogical approaches requires social, critical, and metacognitive reflection with and about the activity. Such opportunities in teacher education can foster robust theorizing while recursively implicating practice. Learning to teach is fundamentally experiential. The reticence that some teachers may have to using technologies like video games may be ameliorated, at least to an extent that allows them to consider fully their pedagogical use, if they are given an opportunity to experience these curriculum objects directly.

The activity of the study was structured around our understanding of reflective experience. Teachers attended an initial focus group meeting so they could compare their views of video games with others. They also engaged with some short-play video games in this initial meeting and talked about those immediately thereafter, again, giving them an opportunity to experience and reflect in a social context. Teachers then played both extended and short-play video games on their own while contributing to a biweekly blog to discuss their experiences and respond to those of their peers. Teachers concluded the study by returning to a focus-group setting and reflecting with their colleagues in a face-to-face setting.

Method

Participants engaged in a series of face-to-face focus group meetings and online asynchronous dialogs wherein they articulated their experiences related to playing video games. A total of 8 teachers began the study, and 7 completed all dimensions of the research, 1 having to withdraw due to time constraints (see Table 1). Participants were recruited through alumni listservs of the sponsoring university as well as through informal contacts in metropolitan area schools. The study was reviewed by the Internal Review Board of the sponsoring university. All participants gave informed consent to

participate in the study. Each participant was given a \$50 gift card to an online book retailer upon completion of the study.

Table 1
Participants in the Study

Name	Teaching Experience	Level of Gaming Experience	Additional Information
Daniel	- World History - Fifth year teaching in suburban New York	Intermediate	Doctoral student
Melissa	- United States History, Ancient Civilization, and History of New York and New Jersey	Intermediate	Masters student
Tracy	- Global History, Modern Indian History, and Modern Chinese History - Fifth year teaching in New York City	Intermediate	Practiced law prior to teaching
Phil	- Ancient History and United States History - Seventh year teaching in Maine and New York City	Advanced	
Brad	- Advanced Placement World History - Ninth year teaching in New York and internationally	Intermediate	
Devon	- United States History, Global History, and Government - Twenty-five years teaching in New York and Washington	Advanced	- Administrator - Doctoral student - Former Peace Corps volunteer
Dylan	- United States History and Government - Sixth year teaching in suburban New York	Advanced	
Sarah (withdrew after first month of independent play)	- United States History, Local History, and Film History - Second year teaching in New York City	Beginner	

Game selection was conducted after a review of approximately 25 extended-play games and 80 short-duration games. Selected games included content of a global nature or content dealing with issues of international significance, perspective, or cross-cultural encounters. We sought video games in the category of serious games or those whose contents are about issues of world importance wherein the people and situations are not entirely fictive. Our intent was to identify video games designed to spark interest in a world situation while offering content that was comprehensive and informative about the situation (Table 2).

Participants engaged in an initial focus group to establish a baseline for their thinking about video games and global teaching and learning, which lasted approximately 40 minutes. They then engaged with two short-play games, *Darfur is Dying* and *Third World Farmer*, for approximately 20 minutes each. Each participant was then given one of the extended-play games (i.e., *PeaceMaker* or *A Force More Powerful*) and was asked to play the video games for a minimum of 20 hours over the ensuing 2 months.

Additionally, we posted bimonthly writing prompts on the study blog dedicated to this project, and most participants engaged in this asynchronous dialog in a sustained manner. At the conclusion of 2 months of extended play, including the final 3 weeks, which shifted the focus again to short-play games, participants reconvened in one of two focus groups. Three participants were in the first group and 4 were in the second (1 participant was unable to complete the study).

One of the 8 participants, Brad, decided on his own to introduce a few of the short-play video games in his world history class as a result of this study. We attended this class and include the data in our study. Additionally, given the generally negative reactions to the extended-play games by participants as evidenced in the blog discussion, we interviewed the game creators to better ascertain the disconnect between a globally oriented educational game and this teacher group. We added both of these unanticipated data points to the data set. The unanticipated data were entered into the dataset and analyzed according to the methods employed throughout the study using N-Vivo 7 software. They factor minimally into the findings of the study. Brad's use of the short-play video games suggested how teachers implement these learning objects, and the interviews with the game creators allowed us to better understand the disconnect between the extended play video games and the participants in our study.

Data Collection and Analysis

Both focus-group dialogues were digitally videotaped, transcribed in their entirety by an assistant, and coded/analyzed by the authors. Data were uploaded into N-Vivo 7 data analysis software. An open-coding procedure was used that thematized elements in the dataset, as well as an axial coding procedure that reconfigured emergent themes into working theories about participant experience (as recommended by Creswell, 1998). We reviewed transcriptions jointly and independently, permitting us to identify data patterns using a cross-comparative method (Creswell, 1998).

Weekly online responses to the video games written by participants were downloaded in their entirety from the collection website. We sought disconfirming evidence in the data themselves and conducted a member-check with all participants through a shared, digital copy of the current manuscript that invited commentary and feedback from participants. Participants generally agreed with our analysis of their experience, though two minor changes were made to participants comments as a result of the member-check strategy, recasting our descriptions in cases where participants felt that our version did not best reflect their thinking.

Table 2
Video Games in the Study

Game Titles	Descriptions
<i>Extended-Play Titles</i>	
A Force More Powerful	"Featuring ten scenarios inspired by history, A Force More Powerful simulates nonviolent struggles to win freedom and secure human rights against dictators, occupiers, colonizers, and corrupt regimes, as well as campaigns for political and human rights for minorities and women. The game models real-world experience, allowing players to devise strategies, apply tactics and see the results."
PeaceMaker	"PeaceMaker challenges you to succeed as a leader where others have failed. Experience the joy of bringing peace to the Middle East or the agony of plunging the region into disaster. PeaceMaker will test your skills, assumptions and prior knowledge. Play it and you will never read the news the same way again."
<i>Short-Play Titles</i>	
Darfur is Dying	"Darfur is Dying is a narrative based simulation, where the user, from the perspective of a displaced Darfurian, negotiates forces that threaten the survival of his or her refugee camp. It offers a faint glimpse of what it's like for the more than 2.5 million people who have been internally displaced by the crisis in Sudan."
Third World Farmer	"In the game, the player gets to manage an African farm, and is soon confronted with the often difficult choices that poverty and conflict necessitate. We find this kind of experience efficient at making the issues relevant to people, because players tend to invest their hopes in a game character whose fate depends on him. We aim at making the player 'experience' the injustices, rather than being told about them, so as to stimulate a deeper and more personal reflection on the topics."
Oligarchy [a]	"Delicious, profitable, stinky oil! Let's get stupid rich, huh? Trash the environment, bribe the politicians and squish the little peoples. Don't feel rich enough? Then Drill, Baby, Drill!"
PeaceCorps Challenge [a]	"You have been assigned to the tiny village of Wanzuzu, where the villagers have big hearts---and even bigger problems. Are you prepared to solve critical challenges and help the villagers make their home a better place?"
Genghis Kahn [a]	"Expand the Mongol empire and conquer the world. This is a tricky strategy-warfare game - try to wipe out the military of opposing nations."
[a] Short-play games that were not initially intended for the study but were included when we changed course due to player fatigue with the extended-play.	

Decisions about the methodology of this study were made from a pragmatist/experiential perspective that aims to articulate a phenomenon as understood by key stakeholders. Our view of pragmatist/experiential research is that it is necessarily bound by context and, therefore, emerges from within the understandings and proclivities of participants. Although we designed the study at the outset in a certain manner, our incorporation of unplanned contingencies suggests how this paradigm shaped the study's enactment. We used, in short, our best thinking to maintain sharp attention to the stated focus of the study while making in-situ decisions toward that end in view. Further, setting aside the playing of serious video games by teachers as an experience suggests that we take seriously Dewey's (1934/2005) notion that experiences have an individualizing quality that flows from beginning to end, consummating in a final act, say, the completion of a game.

Findings

Teachers initially responded to video games with a range of viewpoints. Primarily, they were skeptical about the pedagogic value of these tools, though they recognized the motivational potential with students choosing an avatar within a game situation. Also, teachers were open to the possibility that video games could increase students' global skills, such as cooperation and problem-solving, but were hesitant about how students might learn global content more deeply as a result of playing video games. In the sections that follow, the skepticism teachers shared about video games in classrooms is detailed, specifically related to how games that address human trauma may trivialize the events themselves. The value of serious video games from the teachers' perspectives is also discussed, specifically how games can facilitate learning about global conflicts.

Skepticism

Teachers were somewhat skeptical of the pedagogical value of video games, due in part to their lack of familiarity with this type of media. They expressed concern that video games would be tangential rather than integral pieces of curriculum, though most said they offered some value. A range of critiques were offered, from the need to attend to contextual factors to, consideration of alternative approaches to concerns about market motives of game producers. Illustrative quotations were extracted from the initial focus group when participants were asked to rank the pedagogical merit of video games on a scale of 1 to 10:

I wrote, "Video games alone will never surpass the efficacy of an excellent teacher limited by a dusty projector, but they have the potential to powerfully increase the efficacy of a decent teacher, or even an excellent teacher." So in that sense I feel like they have this potential, but it's contingent upon *so* many things, on being implemented with multi-step writing projects and discussions...so, alone, they don't have very much value, but in conjunction with other things they could be powerful. (Melissa)

What's the purpose of the game? How are you choosing to use it in the classroom? Does the video game exist in a vacuum? What sort of introduction goes with it? What do you have them do after the video game? Do you discuss what the players learn in the video game? Is the video game true to whatever you're using it for? Does it accurately reflect a setting? Do the characters reflect events? If that's what you're using it for, you want it to be as true to life as it can be. So I think that the pedagogical value just depends on what's the video game, how are you using it, because you know if it can capture the interest of a student who is not interested in history at all or some specific time period, if it gets them

to say, “Okay, this might be worth reading that article you’ve been trying to get me to read,” then there is a certain amount of pedagogical value to it. (Tracy)

How do you scaffold the game? How do you deconstruct it afterwards? How do you talk about it? What do you want students to draw from the game and the experience? I’m a little bit skeptical about its relative value to more traditional approaches. I see it...supplementing traditional approaches, never replacing them of course, but if you are going to use them, make sure that it’s in an environment that makes sense to the students, that it’s both prepared for and deconstructed later. (Brad)

Melissa’s critique focused on the use of video games as a pedagogical tool that is necessarily contextual and influenced by teacher choices. In a similar way, Tracy and Brad focused on the context in which games will be enacted, addressing how video games might be framed, what precedes and follows the interaction, and how the teacher engages students in a critique of the medium of instruction. Tracy raised the point that a video game’s value is measured by its ability to motivate students to do other academic activities, such as reading an article.

Alternatively, Phil and Daniel offered more foundational critiques about the pedagogical merit of video games:

With regard to the content, it just seems to me that the design of video games are to entertain and sell. And with that there’s a need for...rapid decision making where the player’s constantly engaged in that active process. And so it’s hard for me to imagine that there’s a way for video game designers who is [sic] concerned about sales to spend a lot of time... on content. (Phil)

Video games, like all new technology that seems to be introduced...often runs the risk of simply becoming filler for some less motivated educators. I was thinking when I was writing this that we have some of the lowest...we have the lowest graduation rates in the world some of the worst reading abilities, not to mention some of the lowest high school graduation rates. I suggest that video games would not contribute as a serious solution to those despicable realities or prepare students to meet the demands of living in the 21st century. (Daniel)

Phil warned that games could be employed as mere entertainment whereas Daniel worried that they might be used as educational filler. Both compared video games to other approaches, such as a focus on reading, and suggested that relatively little is known about the educational merit of video games through formal research. Phil furthered this critique by contending that video games may detract attention from content learning. While he saw value in the engagement experience of play, he was concerned that the profit motive of game producers may ornamentalize content such that *content* is secondary to the enjoyment of playing.

Dylan stood out relative to the others in the initial focus group with a generous reading of the pedagogical value of video games, though even he did not offer a celebratory endorsement:

Because so many of them [students] are playing video games, even if [it] is detracting from their schoolwork, as you were saying, or taking away from the time they were spending on their school work, or somehow contributing to lower

graduation rates—then if you can use that, somehow channel that in the other direction, if they can get excited stopping genocide in Darfur. (Dylan)

Dylan contended throughout the study and with greater resonance as we progressed that video games can be highly motivational for some students and can be strategically used to germinate student interest in a wider range of issues. Dylan referred to the game *Grand Theft Auto* as an illustration, as if he was begging a debate about simulated violence that is in the public consciousness about video games generally.

Student Choice

Dylan was not alone in his view that video games could be a motivational tool for students. Other participants echoed these sentiments, though with varying ideas about how this motivation might manifest itself.

[I'm interested in] the interface between the gamer and the game. The students I have in my class, they really don't have any control outside of these games. They don't have control in the classroom, or at home, or with their girlfriend, or outside on the streets or whatever. There's this issue of control, but what I mean by control is not manipulating with thumbs, but also strategically, and that's why I like *Civilization*, because there was a strategy and path that you went off that maybe in a few plays you'd go on a different path, starting with the same exact situation. (Devon)

I thought your issue of control that you raised is a really interesting one. Coincidentally, this morning I had a parent meeting, the parent and a brother about a student who is underperforming and is really just emotionally shutting down. He's struggling in school...he's just putting up walls. So this meeting was with his guidance counselors and some of his teachers and his family. And the issue came up that all he wants to do is play video games at home, and that's all that he wants to do, and he doesn't want to talk about what he's doing, and he just doesn't want to interact. He really just wants to go into this world...maybe it is some sort of safe space for him. (Sarah)

Sarah inserted a dimension of teacher work that is ever present in teacher talk: attention to the individual needs and issues of students. Devon considered how video games provide young students with a sense of agency and control, giving them choices about how to create a situation by an avatar's actions. Teachers in the focus group speculated that students might become more involved in their learning, as it would allow them to interact in school differently and give them a measure of choice-making in an otherwise choice-deficient environment like school.

Global perspective

All of the teachers were skeptical about the learning of global content through a video game, contending that it may provide familiarity with African farming and the crisis in Darfur but little depth of understanding about these complex global situations. They suggested, though, that video games might provide globally oriented skills, such as becoming facile with interactive technologies, and being more open to community involvement, as well as the possibility of student-to-student collaboration in gaming.

I think there's also a level of complexity with newer video games where it's not just a fast reaction time kind of game where you do need to sit and figure out

things, figure out puzzles and use reasoning skills and some level of logic to move forward—not even necessarily forward. There are so many different paths you can take in these games. A few people in here mentioned Civilization, which I never really played, but I know there are a lot of games like it where you really choose your own path, and it's not something where you're reacting to gunfire or hitting a ball. It's some really well thought out, well planned. It can work on a number of levels to help students develop skills. (Dylan)

This week's *Time* magazine, Michelle Rhee is on the cover, the dynamic axe-cutting woman who's in charge of the DC public schools. The last time they ran a cover on school, they ran an article called "Are Our Children Prepared for the Twenty-First Century." In that article they asked business leaders, "What are the skills that we're going to need that schools aren't preparing our kids to do?" And among them were teamwork, intercultural competence, leadership, and argumentation. And if video games can do those things, then maybe our students can compete on the global marketplace. (Daniel)

Daniel seemed to be aware that video games are alleged to build student capacity for teamwork and critical thinking, though he poses a proposition rather than an assertion (e.g., "If..."). Interestingly, he framed his response around global competitiveness, a viewpoint that some global educators do not embrace as a central aim. Phil leveled a different critique of the global skills potentially gained from video games, contending that they may actually enhance competition.

I don't think they [video games] necessarily do [promote cooperation]. It depends on the video game, and part of my assumption about community depends upon the time that the game designer spends on content and how that's conveyed. Through my experience with video games, there are times where I'm able to compete with three different players and that I think that develops a sense of camaraderie and there's an intimacy that comes from that. But increasingly so, video games are also made that the individual develops a skill by themselves so that they can use it in some form of combat or competition against an opponent. You can play checkers online with someone in Argentina, and when you're about to lose, instead of conceding a loss, you drop the game and pick up somebody else from Illinois or Russia. (Phil)

To summarize teacher views about video games prior to the study's experiential component, teachers had generally surface impressions that were open to the pedagogic possibilities of serious video games though they lacked an experiential basis from which to make strong judgments.

During and After the Games

We collapsed the data collected during the 2-month, play-on-your-own period and the follow-up focus group since the categories of response were approximately the same. We do note, however, different inflections in the data that may be related to the immediacy of playing the game or the reflective stance of talking about playing after the fact.

After the first focus group, there was an air of anticipation among participants about the independent play experience that awaited them. Four participants were given *A Force More Powerful* (AFMP), and 4 were assigned *Peace Maker* (though 1 person in the latter group did not complete the study). We remained in contact with participants via social networking software, moodle, and periodically invited group reflection in this space. Both

during and after the video game experience, teachers remained skeptical about the pedagogical value of video games, but their skepticism was circumscribed by the experience of game play, both extended and short duration. There were two composite, salient data patterns: (a) complexity and trivialization, and (b) pedagogical value related to global realism.

Complexity and Trivialization

Teachers were overwhelmed by the level of complexity present in the extended-play video games, AFMP and Peacemaker. AFMP was viewed by the 4 participants who played as onerously difficult.

You're basically given a team of four, five, six people, and you obviously have to try to win over more of them [in AFMP]. But after a while when you're trying all of these different things whether it's organizing a protest, or passing out leaflets, or trying to raise money, and none of them, or very few of them, are actually successful, it's kind of disheartening. And seeing how long it takes to make the game and putting all these different facets into it and all these different contingencies where if something happens, then, you need to change course, I wonder how much of that the average player is actually allowed to access. If you can't access all of those complexities, then what's the point really of having the game? (Dylan)

[On AFMP] I mean it's *so frustrating*. There's an infinitude of variables. And it's *so frustrating* that it really does acclimate you to what I'm guessing the non-violent resistance experience would be like. But it's so difficult to get feedback, it's so difficult to understand the consequences of a decision, that I feel like it's not a useful training technique directly. So for me it was overwhelming. And it was an interesting simulation, but it was hard to get—it was hard to see progress. (Phil)

Teachers had a nuanced view of complexity in light of the video games. While they viewed the extended-play games as being too lengthy and technically complex for implementation in a world-curriculum course of study, Phil suggested how the complexity might actually simulate the reality of these events. Conversely, Daniel and Tracy cautioned that such media might inherently trivialize human suffering.

My major problem with it [Peace Maker] was my fear that students would downplay the complexity of the issue. While it allowed students to see several different facets of the Israeli-Palestinian conflict...they also trivialized those things; they made them out to be very small and very easy to fix. "Well just press this button and these guys go away!" Certain populations of students would absolutely walk away with misconceptions of how difficult and how entrenched the problem actually is, one of the world's greatest problems. (Daniel)

All participants touched on this concern in various ways throughout the study. They shared a sense that the video game as a medium itself may serve to trivialize the significance of the events themselves, since the media explicitly attempts to represent real people and groups in various contemporary conflicts within a medium widely associated with play.

This is only a game that you're playing, and the fact that you're also going to be using such real issues, this kind of ties into what you're saying about the trivialization, like, it's mixed messages. You know like on the one hand, let's say it

was animation, it would take a step back for the kids, like they would be, like, "This is a game; this is not *exactly* like reality." But it's not, it's that—because you're using so much real footage, I think they might think that it *is* that simple to just press this button, this is what happens, press this button, this is what happens. (Tracy)

Tracy also mentioned that the use of stock footage from the Middle East conflict in *Peace Maker* elevated the animation to a position of being "more real." "Looking at the video games that uses real footage [*Peace Maker*]...that could be a plus," she said.

The experience of teachers with extended-play serious video games might best be summarized as a felt tension between practicality and veracity. Teachers wanted a less complex game in terms of user interface that could be readily deployed in a classroom but with sufficient attention to contextual detail so that the game does not trivialize the human suffering depicted while oversimplifying the conflict.

Pedagogical Value Related to Global Realism

Teachers endorsed elements of each video game that could raise student awareness about global issues, though they were cautious in presuming that awareness alone would teach students sufficiently about the conflicts in the Middle East or the exploitation of indigenous people near oil reserves. Tracy explained that her face-to-face, nondigital simulation of the Middle East peace process was superior to *Peace Maker*, since it was communicative and empathy building.

I played the game while we were having a Middle East peace conference in school. So because we were actually having a Middle East peace conference, and I could see what the kids could get out of it by learning about their specific topic, being able to engage in discussions [as] they were representing different countries. Let's say they are arguing over the issue of access to water in the Middle East, more specifically water between Israel and Palestinians, and the fact that they have come in doing all this research and are trying to argue it from the point of view of their countries—I really felt like that was more like being a "peacemaker." And yes, they were not able to solve all of their problems, they were not...able to come to resolutions, [so] the frustration factor was the winner. (Tracy)

Dylan and Melissa, in contrast, contended that the video game presented an alternative text for students that could spark further inquiry and discussion. Dylan endorsed the short-play video game, *Oiligarchy*, stating that it illustrated multiple dimensions on global issues involving oil. These dimensions, he explained, offer students a more holistic experience of the issue. Melissa compared the game to a document-based question whereby one could encourage students' to examine various parts of the text, including the author's point-of-view and argument. Although both Dylan and Melissa supported the use of video games as having pedagogical value in a global context, they were critical of its use as a stand-alone medium of instruction.

I think I could use this [*Oiligarchy*] in the classroom because you see the impact oil has, not just on the economy, but you see the impact it has on people, on the environment, just about every aspect... and politics, on military intervention, every aspect, every traditional aspect of social studies education is addressed in the game. And if you have kids reflect on it in a structured and organized way, it can be very helpful. It's not much different than what students encounter in

written texts in the classrooms. I mean, trying to represent history and complex issues with the written word isn't necessarily that much superior...so I guess it's an attempt to embrace this new medium that is unavoidable to try to harness it to do some good if possible, which I think is possible. (Dylan)

Well, actually what I wrote down when you were talking about Peacemaker was, "What was the agenda of the gamemakers? Were they pro-two state solution? On what terms?" And I was thinking, what I did like about Oiligarchy, the way that I kept imagining using it was as an alternative text to help identify bias, or to help kids gain the skills of identifying, "Who's the author? What is their agenda?" Because I remember just loving AP history in high school and feeling every time I had to identify a DBQ that I was going out on a limb. And I was probably doing it right, I mean I did well on the exam, but it still felt *profoundly* uncomfortable for me, and it wasn't until the end of college, or in college really, that I felt very confident doing that. And I'm so far removed from it now that I forget how hard it is for—especially for eighth graders---and then even for high schoolers. (Melissa)

In further reflection about Peace Maker, Tracy agreed that the game displayed a realistic geographical perspective of Israel. The digital element, she thought, provided students with the chance to visualize the landscape through a multidimensional form, rather than imagining what it might look like when using a more common, one-dimensional map.

The game [Peace Maker] opens up [with] a topographical view of Israel, which I actually think was a great thing to do, because you really understand, or you have greater depth to the idea of why each group wants control of the areas that they're so actively fighting for. And typically when kids see it on a map you just see the political view, and even if you show the geographic view, it's still not the same as seeing it topographically. (Tracy)

Tracy contended that geographic and visual realism differed from historical and contemporary realism, whereby the games seemed to simplify complex global issues. As a global educator, Tracy reflected on two occurrences—international travel and rich written texts—indicating that both offered greater value to global content, pedagogy, and realism than game play does.

In playing Oiligarchy one of the things that they draw parallels with...[is] the role that the US or Western companies play in taking advantage of the natural resources of poor, less developed countries. My students were upset by what happened when we have Oiligarchy, but they didn't necessarily think that the game was to blame. Like when we got to Ecuador we actually saw what was going on, and that's when the ramifications of all this really hit home. (Tracy)

Tracy's skepticism about the game focused on the simulated nature of video games, as she preferred the interactivity of live classroom simulations, discussion, detailed topographical maps, and firsthand experience visiting other countries or regions. Although consistent skepticism is apparent among the teachers, there is also a sense that the game is an alternative text, presenting students with a unique visual and experiential perspective on global issues, cultural attributes, and geographic realism that can be critically examined.

Data Summary and Discussion

There was significant interaction between the experience of participants with video games prior to the study and those who lacked it. The general contours of this pattern suggest that those with greater prior experience identified more pedagogical utility than those without. However, the effect was not directly causal, as Phil's hesitation about video games derived from his fairly in-depth knowledge about their limits, namely how games are market driven and that content is of secondary importance to the immediacy of interaction. Dylan was perhaps the strongest advocate of video games as global learning tools in the group, though even he tempered his enthusiasm. Unlike much of the early video gaming literature, these participants were notably not celebratory in their responses.

The conversation of teachers shifted considerably over the course of the study, though, from a combination of drawing on their experiences (or lack thereof) as gamers or commonly held views about video games toward more careful and focused attention on the specifics of the games used and their implications for pedagogy related to global learning. Aphorisms about the value of video games were quickly reworked into more nuanced readings about when, how, and with what contextual conditions video games might be useful. This finding suggests that if teachers are to use such learning artifacts in a meaningful way, they need opportunities to experience the activities and talk with colleagues about their use.

Teachers remained skeptical of the pedagogic value of serious video games, an interesting finding given that these games, in particular, are geared toward an educational market and aims similar to those of global education. That said, teachers acknowledged some value in the global awareness that could be generated with video games, especially those that included real-life maps, photos, and footage. Developing Hanvey's (1975) notion of perspective consciousness, teachers saw the video games as offering students a perspective that might be different than what they currently held, and perhaps challenged or complicated their preconceived notions of global issues.

They were also more open to the notion that serious video games could develop skills associated with global learning, such as critical thinking, cooperative activity, and critiquing how media is framed and authored. They viewed this attribute as the medium's strongest, causing one participant in the group to experiment with the game in the classroom.

These attributes of global learning further illustrate Hanvey's (1975) elements of global perspective, where one develops an "awareness of human choices" (p. 25). Through interaction with serious video games, teachers recognized the element of student choice and control when acting as an avatar in a game situation. Students assume a virtual role where they have to participate actively in the decision making process and almost immediately deal with the consequences of their actions. Teachers' healthy skepticism is noteworthy, too, in that it was developed through a social, reflective environment, both face to face and online. Here again is evidence that teachers benefit from the interactive, professional dialog created through the study, one that could easily have been sustained for a school year and beyond.

Teachers also articulated a level of discomfort with the notion that playing and learning could be combined. The video games were most often viewed as an augmentation to a unit of study rather than sufficing for such a unit. Teachers suggested that video games might be judiciously used as a dynamic visual text to supplement student learning but alone could not constitute a thorough investigation into a complex global issue. Perhaps

with increased game play and time working with the game during the study, teachers might have seen more pedagogical value to the games played and might have reflected more deeply about how they could use the games in their classrooms.

Notably, the only video game that rose to the level of complexity and similitude desired by the participants was AFMP, which teachers felt was much too cumbersome for classroom use. This finding, too, is noteworthy, since all of the participants had masters degrees in social studies education or a closely related field, were generally younger than 30, graduated from a historically progressive institution in New York City, and were currently teaching in the New York metropolitan area. One might surmise that such a demographic would embrace a Deweyan notion of play as educative rather than wasteful.

Generally, that not the case, with a few exceptions, as this group of teachers often implicitly, and at times directly, viewed video games as a potential time-waster after experiencing them as players. Their attributes may also be due, in part, to increasing constraints on teachers to abide standard curriculum, move quickly through vast historical sequences, and prepare students for high-stakes tests like the New York Regents. Perhaps, these constraints on teachers influenced why many participants liked the short-play versus the extended-play games. Short-play games require less investment and time wasted in organizing its implementation in daily lesson planning.

One participant, Brad, used a short-play game (Genghis Kahn) in his AP World History class, explaining that the length and simplicity of the game allowed students the opportunity to play the game multiple times during the lesson. Repetition allowed for increased interaction with the game, and student experience changed over time enabling them to extract main items from prior history learned in the course, including military revolutions and geographic features.

Implications

The aim of this research was to understand how teachers assessed the pedagogical value of serious video games of a global nature through reflective experience. Investigating teachers' views of the video games before, during, and after game play revealed three specific ways this study will be valuable to researchers, teachers, and game producers. This study adds to the research on reflective experience of teachers by delving deeper into how teachers reflect on their assumptions about student learning, the classroom, and schooling through the interactive experience of video games. Experiencing and reflecting on a series of serious video games and their pedagogical merit revealed nuanced views of teachers' assumptions about knowledge and pedagogy, specifically about how students learn about the world. Teachers consistently mentioned, regardless of experience with game-play, that the game should not supplant teacher instruction or be used as a stand-alone method of instruction.

We saw a development of teachers as critics and reflective practitioners as the study progressed. Although many participants were skeptical of the pedagogical value of serious video games at the outset of the study, evidence of an emerging critical and analytical lens about the pedagogical merit of the games is an interesting line of research one could consider in future study of global education and digital media. Furthermore, practical implications for the pedagogical value, curricular support for global education, and use of digital media were uncovered in the analysis of the participants' reflective experience playing the video games in the study.

Grappling with the pedagogical value of global video games proffered assertions of utility and skepticism about game play in the classroom. Teacher education courses should consider introducing the possible value of video game play in the classroom, indeed, the compelling need for experience. Considering the pedagogical implications and notions of play and game surrounding the use of video games in the classroom could minimize the kind of skepticism revealed by participants in this study. Video games should be experienced by preservice teachers, challenging the nature of what it means to play in the classroom and the bounded potential to reach students using this medium. Additionally, playing and reflecting on the use of video games in a teacher education course would encourage teacher understanding about how to use video games in a classroom context. Although the current study may have yielded concerns involving how the game should be introduced, played, and deconstructed, more experience and play of serious video games might yield evidence of increased pedagogical merit and additional social studies benefits.

Findings in this study also stressed the need to involve educators directly in the making of serious video games. Including classroom teachers' perspective, experience, and expertise would add to the pedagogical value, global content, and practicable utility of video games in the classroom. If teachers were directly involved in the game-making process, an increased sense of security with using video games as a pedagogical tool may emerge. Classroom teachers find security in whether an item has been tested, experienced, and reflected upon by someone who understands classroom demands and student dynamics. This approach may help bridge the gap between serious game-makers and educators. The reflective experience of teachers in this study offers game-makers valuable insights into how teachers envision and value the pedagogical use of serious video games to engage students in global learning.

Conclusion

Video games are increasingly a popular form of media, particularly with adolescents. As the world grows smaller, increasingly complex, and more troubled, the need for a robust and meaningful global education has perhaps never been more pressing. Traditional efforts to advance global education have typically come from within existing pedagogical approaches and current thinking about the field. The significance of the current study and others similar to it is to encourage educators to consider different ways of engaging kids in global learning, particularly using technologies and media that many already experience. The rise of serious games, like those employed in this study, offer teachers ready-made avenues to explore the integration of high motivation materials into critically important education. These video games, while not unproblematic, offer different ways to encounter global learning

Teachers and schools are already saddled with a variety of social burdens, such as the imperatives for students to perform well on high-stakes assessments and to address the diverse and challenging needs of the current student population. This task is not easy. The preparation of global learners and, indeed, citizens issues another in a seemingly endless array of demands placed on schools and, primarily, teachers. Yet, given the results of this inquiry and others like it, technology supported by a healthy infrastructure and the opportunity to engage reflectively with teaching peers holds promise as to what experiences can be generated with the use of video games. We hope that such uses, combined with thoughtful critique by teachers and students about the aims and accomplishments of technologies like video games, can create new opportunities for global learning.

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