Being an “Agent Provocateur:” Utilizing Online Spaces for Teacher Professional Development in Virtual Simulation Games

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Abstract

This article details the results of our educational action research study which investigated how teachers used online learning community spaces to develop and support their teaching and learning of the Jewish Court of All Time, a web-mediated character-playing simulation game that engages participants with social, historical, and cultural curricula. In this paper, we discuss the nature of reflection that was generated in the asynchronous and synchronous spaces. We located two forms of reflection in the teachers writing and discussion: reflection on self as teacher and reflection on students.   Findings will guide instructional design, generate insight on the interaction of online spaces, and support future teachers in how they learn and teach about JCAT and other virtual simulation game experiences.

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> *Sarah here. Have you heard? The Court ruled to let the Eissa family stay! Well paint me green and call me a pickle! It's not what I would have wanted, but that's democracy fer ya! Now it's your turn. Click on the link below and add your comment (in your character's voice).*

In a typical classroom, this kind of exclamation from a teacher would not be expected or perhaps sanctioned. This teacher, however, portraying Sarah Palin in the 2010 Jewish Court of All Time (JCAT) virtual simulation game, was embracing theatrical play to encourage his students to articulate their perspectives on the simulated trial at hand. Indeed, technologies such as virtual simulation games are transforming the way students express themselves, interact with others, and learn; and in turn, the way teachers teach. In this article, we will discuss just how teachers reflected on their teaching in and with JCAT.

Virtual simulation games are specifically designed for educational environments and are typically problem-based with a focus on learning (Ketelhut & Schifter, 2011). They typically offer students opportunities to “visit” places they cannot physically visit in real life and experience situations which are impractical or impossible in real life, such as going back in time. In order to fulfill the objectives of the game, students communicate and collaborate with fellow students and others, often from other schools. An example of an educational simulation game is the Jewish Court of All Time (JCAT), in which middle school students learn about and portray significant historical figures. It takes place in an asynchronous web-based forum, where students from schools around the country discuss cultural, social, and moral issues surrounding a fictional

trial, using the voices of those characters. Through this participation, students have an opportunity to practice historical research, deliberation, perspective-taking, genre and voice in writing, and other skills. Students are supported by their teachers, along with undergraduate and graduate student mentors, all who actively participate in the simulation. The scenario for each trial is crafted to address teachers' curricular and pedagogical needs and to frame rich and complex contexts for thought. While the students discuss and make decisions, the teachers focus on facilitating their learning, creating bridges between student needs and curriculum goals (Lock, 2006).

Despite the benefits of simulation games, they are challenging for teachers to effectively implement in K-12 classrooms. While students are generally taught in a serial fashion in school, these games require students to process information in a non-linear fashion (Ketelhut & Schifter, 2011). In addition, teachers are expected to track, support and scaffold students of differing abilities in developing skills such as written communication and reading as the game unfolds. JCAT is an especially challenging simulation game for teachers to implement (Kupperman, Stanzler, Fahy & Hapgood, 2006). First, it unfolds in a different way each time it is integrated in a classroom, so it is difficult to use a similar teaching approach each time. Second, since students are role playing a character, teachers must ensure they are speaking in the "right" voice, meaning the teachers must be knowledgeable about each character. In addition, teachers have to ascertain that they are using it optimally for their unique curricular needs. Finally, since active participation is expected from all members, teachers also participate in the game, both as a character and facilitator.

If teachers deem the games too unclear, complex or impractical to integrate, teaching practices are not likely to change (Ketelhut & Schifter, 2011). Key to teachers' growth and

development with new pedagogies are opportunities for reflection on their practice (York-Barr, Sommers, Ghere & Montie, 2006). For this reason, it is critical to professionally support teachers in their integration of simulation games in the classroom. Since simulation games are relatively new in K-12 educational settings, there is limited research about best practices for preparing teachers to incorporate them (Ketelhut & Schifter, 2011). In addition, the ways in which teachers learn within professional development settings continues to be explored in research (Borko, 2004).

Purpose of Paper

This paper will discuss the results of a study in which we explored how teachers used asynchronous and synchronous professional development online spaces to support their teaching and learning of the simulation game of JCAT. Specifically, we seek to examine the nature of reflection that occurred in both spaces. While this data does not lead us to draw conclusions about the differences between the teachers' use of these spaces, it does illustrate how the co-existence of these spaces afforded unique opportunities for reflection. Findings will not only help to identify the advantages and challenges of using certain online spaces in professional development, but also will add to the knowledge base about professional development regarding simulation games in K-12 environments. We expect the findings will help us improve the instructional design of such spaces and further clarify teachers' needs concerning the integration of simulation games in their classroom.

Literature Review

In this section, we review the educational literature on the nature of reflection and its role in professional development. We also review past findings about online learning communities. Finally, we identify gaps and limitations in existing research.

Nature of reflection. When we identified the thematic strands emerging from the current data, we saw that reflection on teachers' self-in relation, and students learning-in relation, recurred throughout. This recognition mandated that we articulate our conception of reflection. John Dewey's theory of reflection provides the theoretical foundation for our work and which we understand as "in an effort to create new knowledge, the learner must be able to make connections to what she already knows, have experiences that allow her to construct new ideas, have a venue for articulating this emerging knowledge, and have an opportunity to act on this knowledge" (Raider-Roth, 2011, p. 81). Building on this interpretation of Dewey, we constructed our professional development learning spaces so that the teachers could connect the innovating teaching required by JCAT to their previous practices. By requiring that they also participate actively in the simulation, the teachers engaged in meaningful experiences that invited them to understand how their students were learning, and that offered them the opportunity to build new knowledge. Finally, by creating asynchronous and synchronous online spaces for dialogue, we offered teachers multiple ways to articulate their learning, and share the actions that they took in their classrooms.

We are careful to locate our notion of reflection on teachers' selves as "selves in relation" (Surrey, 1991). That is, teachers' on-going development of their professional teaching selves is located within their professional communities - schools, colleagues, departments, etc. While a full discussion of this relational/psychological notion of self is beyond the scope of this paper, it is important to note that this relational stance on teachers professional development is embedded in Robert Kegan's core concept of the "evolving self" as dependent on an "ingenious blend of support and challenge" from the environment and learning partners (Kegan, 1994, p. 42).

Bringing these theoretical orientations to the realm of professional development, we are informed by a collaborative inquiry model of professional development (Weinbaum, Allen, Blythe, Simon, Seidel & Rubin, 2004) which is defined as "the process by which colleagues gather in groups to pursue, over time, the questions about teaching and learning that the group members identify as important" (p. 2). In forming our virtual community, our hope was that these spaces could be ones where teachers would bring their observations, dilemmas and surprises to the table, and assist one another in taking "intelligent action" (Rodgers, 2002). This structure supports the finding that effective professional development involves all stakeholders but especially focuses on teachers' needs in order to for them to truly engage in the experience (Duncan-Howell, 2010).

Online learning communities. Since all stakeholders in the learning community were geographically separated, the online environment provided a logical "place" for the JCAT professional development. We viewed online environments as mediated spaces that allowed teachers to connect, sharing common goals, purposes and values across a distance (Palloff & Pratt, 2005). Barab, Makinster and Scheckler (2004) emphasize that these spaces should provide opportunities to share, reflect and discuss classroom practices.

The purposeful selection of online spaces to mediate the learning community is critical to the success of the professional development. Without proper planning, technology can be a perceived as a disconnected add-on, leading to frustration among teachers (Lock, 2006). Community technology tools typically are classified as either asynchronous (users interact independently of time, typically through text) or synchronous (users interact in 'real time', through text or voice) in nature. Both types are described and reviewed below, and a justification for selecting both types of spaces is provided in the Methodology section that follows.

One of the main advantageous features of asynchronous online spaces such as discussion boards is the allowance of 'anytime, anywhere' learning, which most teachers now expect (Lock, 2006). There is time to think, compose answers, and reflect on the discussions over time (Duncan-Howell, 2010). Discussions can be revisited, allowing teachers to appreciate their changes in thinking and practice (Clifford & Friesen, 2002). These spaces also enable a platform for teachers to develop both practical and intellectual strengths that can positively affect practice (Duncan-Howell, 2009; Romano, 2008). Online discussions can help an individual reflect within the context of a distanced community (Romano, 2008), along with providing a venue for peer support and guidance (Duncan-Howell, 2010). Duncan-Howell (2009) found that teachers frequently posed pedagogical problems that were solved by others in the community. Lock (2006) cautions that although they are popular and convenient, asynchronous spaces do not always support all of the desired goals of the community.

Synchronous tools allow teachers to communicate back and forth in real time, through modes of interaction like text, voice, and camera. There is emerging evidence that the use of spoken interactions increases a feeling of social presence and immediacy in the community (McLoughlin & Lee, 2010). Chen, Chen and Tsai (2009) question the effectiveness of synchronous venues in supporting reflection and stress that attention must be focused to reflect on knowledge construction. Trying to take advantage of the affordances of both spaces, Cranefield and Yoong (2008) used multiple online spaces with a learning community such as discussion forums, Skype, and Twitter. They found that these different spaces gave students the opportunity to discuss topics in various manners, prompting them to rearticulate their ideas and refine their own thinking.

Limitations and gaps. There are several limitations and gaps in the research that we intend to address with the current study. First, there is little research about professional development regarding teachers and digital education (Borko, Whitcomb, & Liston, 2009). While there is ample research about technology integration, there is little about simulation games specifically. Ketelhut and Schifter (2011) claim that research about simulation games is almost always focused on the student rather than the teacher. Jenson, Lewis and Smith (2002) agree that most studies about technology integration professional development are not from the standpoint of the teachers, which they call the 'achilles' heel' of technology integration. Finally, only one study was identified (Cranefield & Yoong, 2008) that studied the effect of multiple online spaces for professional development. Our study fills the call for research by focusing on teachers' use and understanding of multiple online spaces for professional development of simulation games.

Methodology

This study is guided by an educational action research approach to study our practice as teacher educators (Cochran-Smith & Lytle, 2009). Our goal was to understand our practice in order to improve the quality of professional development that occurred in these online spaces. By examining artifacts of the educational environments which we created, we seek to understand the nature of learning that occurred there. We ascribe to Lawrence-Lightfoot's notion that "universal" lessons can reside in "particular" stories of practice (Lawrence-Lightfoot, 1997). Participants, professional development settings, data collection and data analysis are further described in this section.

Participants in this study included teachers who joined the JCAT project during the 2010-2011 academic year. Hailing from Jewish independent day schools across North America, these eight teachers taught middle school subjects including language arts, social studies, and Judaic

studies. While one teacher had participated in JCAT before, the rest of the teachers were participating for the first time. During the summer orientation, in which the teachers were introduced and trained to use the simulation website, the research project was introduced and consent forms were distributed. All teachers consented to participate. IRB oversight guided the recruitment, consent, data collection and data analysis phases of the study.

Professional development settings. Given the past research findings described above, the project offered two venues for online professional development in order to support teachers' capacity to innovate their practice with the new form of pedagogy of JCAT. The first professional development platform we offered was a monthly synchronous video conference call via Adobe Connect. In this platform, each participant had the capacity to project their own image (via webcam) and voice. In this way, if the technology worked properly (see more about this in the Findings section) each participant could see and hear each other (Figure 1). During these calls, we offered a loose agenda reflecting some of the issues that emerged during the asynchronous discussions, as well as questions and concerns that surfaced for the project directors as the simulation unfolded. We also asked teachers to vote on the topics that were most pressing for them in their thinking and practice (we implemented this using a "poll" feature in Connect). Each call began with a "check in," asking teachers to reflect on how JCAT was going in their classes, and concluded with a reflection on the call itself. Each month we offered two calls to accommodate different schedules, and Aimee and Miriam participated in all calls. In addition, a project director from the University of Michigan also participated in each call.

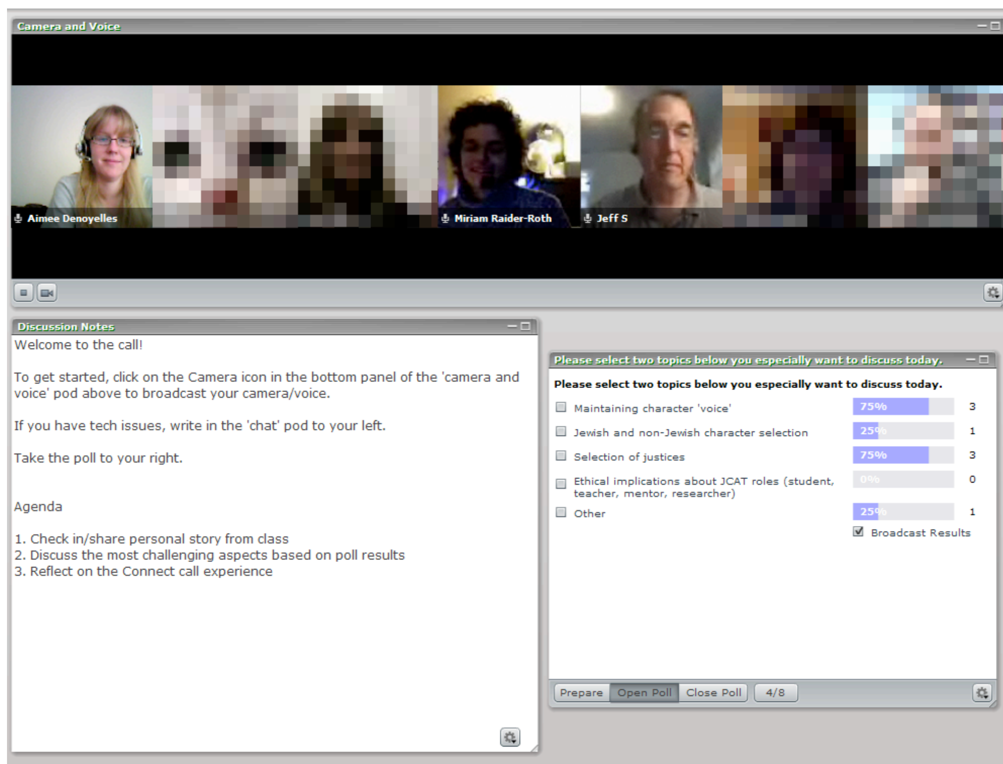

Figure 1. Adobe Connect synchronous space (teacher identities blurred to preserve anonymity).

In addition, we offered a second professional development setting which occurred in a weekly asynchronous discussion forum, which we called “JCAT Talk” (Figure 2). Each week, Aimee and Miriam posted a question to which we asked teachers to respond. Posting the initial question each Monday, we asked that their initial response to the question be posted by Thursday, with an additional response to a colleague by Sunday.

Both Aimee and Miriam participated in the Talk discussions as facilitators and participants. To do this, we used suggested strategies from the Community of Inquiry model about teaching presence, such as asking for clarification, connecting ideas, and extending thinking (Garrison, Anderson, & Archer, 2000). We also decided to alternate responding between the two of us, so that our voices, as facilitators, did not dominate the conversation. Then, the following Monday, Aimee offered a thematic summary of the prior week before the next question was posed. By doing the thematic analysis each week, we enacted a mini action

research cycle (Cochran-Smith & Lytle, 2009) in which our own analysis could help us take "intelligent action" (Dewey, 1933; Rodgers, 2002) each week, guiding the development of the discussion prompts.

In line with the findings of Chen et al. (2009), facilitating the synchronous space of Connect was more challenging than in Talk. Because of the affordances of Talk, we found our facilitation was more 'routine' and predictable. That is, Talk was an asynchronous setting, in which teachers accessed at their convenience. For this reason, we wanted to be sure that this would be an easy system in which to engage, and that there would be a routine to the discussion. We did not change the weekly prompt as the week unfolded as teachers logged in at different times, and we wanted each teacher to have the chance to think about the topic at hand.

In Connect, the facilitation decisions were made in the moment and there was little time to consider the "right" words. Miriam paid close attention to assure that each teacher had time to talk by utilizing both going in a "round" asking each person to speak in turn as well as using the

All Topics (12) Order By: Last Active

Viewing topic 1 to 12 (12 total topics)

Topic Title	Latest Poster	Posted In Group	Posts	Freshness
Last Week: Mentor-Teacher Communication Feedback		JCAT Teachers	8	1 year, 3 months
Comments on Connect/Final Reflections	Aimee deNovelles	JCAT Teachers	1	1 year, 3 months
Topic, Week 6: Suggestions for Mentors		JCAT Teachers	16	1 year, 4 months
Topic, Week 5: Your Role in JCAT		JCAT Teachers	11	1 year, 4 months
Topic, Week 4: JCAT Discourse	Miriam Raider-Roth	JCAT Teachers	16	1 year, 4 months
Topic, Week 3: Great Hall Ideas		JCAT Teachers	15	1 year, 5 months
What JCAT questions do you have so far?	Jeff Stanzler	JCAT Teachers	14	1 year, 5 months
Topic, Week 2: Selecting Justices for the Trial	Aimee deNovelles	JCAT Teachers	18	1 year, 5 months
Topic, Week 1: First Impressions and Describing a Moment		JCAT Teachers	27	1 year, 5 months
Biographies/Resumes	Miriam Raider-Roth	JCAT Teachers	14	1 year, 5 months
Introduce Yourself		JCAT Teachers	9	1 year, 5 months
Hello everyone!	Aimee deNovelles	JCAT Teachers	3	1 year, 7 months

Figure 2. JCAT Talk asynchronous space (teacher identities blurred to preserve anonymity).

“hand raising” feature of Connect (this is a hand icon that participants could employ to alert Miriam that they wanted to speak). Aimee found herself very busy with technological “glitches.” Sound issues were rife in the Connect calls, and many teachers had difficulty getting their webcams functional. The sound issues were so plentiful that in the simulation the following year we used Connect and conference call technology to be sure that we would not lose people in the conversation - even if their internet malfunctioned. While Connect posed significant technological challenges, the benefits of a synchronous discussion, where many participants could see and hear each other, offered the community an opportunity to engage in collective reflection on both big issues as well as troubleshooting pressing issues in the simulation. The complementary nature of the dual spaces is described in the findings.

Data collection and analysis. Data for this study included transcripts of all the discussion postings from the JCAT Talk site, video recordings of the Adobe Connect conference calls, and detailed ethnographic field notes of these calls taken by Aimee and Miriam.

In order to understand the emerging themes from this data, we implemented a grounded theory approach, which Clarke (2006) argues is implicitly feminist. First, it emphasizes the lived experiences and meanings held by the people involved. Second, it assumes that knowledge is given meaning by the people producing it, so it “involves the commitment to represent those we study on their own terms and through their own perspectives” (p. 348). Finally, grounded theory gives voices to those traditionally silenced; in this study, the standpoint of the teachers is heard, which is rare in studies of professional development regarding technology integration and simulation games (Jenson et al., 2002; Ketelhut & Schifter, 2011).

As noted above, Aimee conducted a weekly thematic analysis of each JCAT Talk discussion, to help us see the issues that were emerging. When the simulation was over, we

examined each of the weekly analyses. We then compiled all the themes that we had noticed from week to week and returned to the JCAT Talk transcripts to see if themes that occurred later in the simulation were perhaps embedded in the earlier weeks, but hidden to us at the time. In addition, when the simulation game was completed, Aimee and Miriam coded transcripts and notes to reveal emerging themes. We then compared the themes that each had traced, and challenged each other to provide compelling evidence to support the findings we presented. The findings below are a result of these interpretive discussions.

Findings

In our analysis of the discussions in JCAT Talk and Connect, we identify two forms of reflection in which the teachers engaged: Reflection on self-as-teacher (in relation) and reflection on students (in relation). We realize that separating these two categories is, in some ways, an artificial separation. That is, in reflecting on self, teachers are often thinking about themselves in relationship to student learning. Similarly, teachers often consider students' learning in relation to their own practice. We make this separation for the purposes of this article in order to help us see the different dimensions to the teachers' reflection. It is akin to looking at a photograph and focusing one's gaze, at first, on one figure in the composition, and then on another figure. We remember, at all times, that both the teacher and the students are in this composition of this essay. In the following section, we focus our attention first on the teachers' reflection on themselves-in-relation, and then shift our gaze to their reflection on the students-in-relation

Reflection on self-as-teacher. In both online spaces, teachers frequently reflected on their teaching practices. We identified three sub-themes concerning this form of reflection: juggling teachers' roles, teacher responsibility, and teaching challenges. Teachers' reflection on

themselves as teachers was often in relationship to student learning. In this sense, it was a reflection on a "self-in-relation."

Juggling teachers' roles. The roles of the teacher were heavily explored in both online spaces. This is not surprising as the simulation game offered a new approach to teaching and learning, with teachers assuming a character role in the game. We observe two ways in which teachers expressed this sort of "role juggling." First by playing a role in the game, the teachers confronted some of the challenges that they imagined their students might confront. In a sense, they were actively seeing themselves as teachers and as learners. For example, Samuel commented, "I was worried about knowing enough about my character to be "true" and "fair" and I anticipated that my students would also be worried." Additionally, as teachers considered the actions of their characters in the game, they often extended their thinking to the ways in which they might be modeling playful behavior for their students. Tamar recognized the importance of modeling her character for her students; "Seeing me 'play' with my character's voice, I think encourages my kids to take more risks." Diana also commented on her use of character in relation to her students, writing, "I did realize today, though, that, I as the Dalai Lama have not been participating as I should, which the kids pointed out when I didn't bring in my own artifact [to the classroom]. I'll be bringing in something for them next week." Both Diana and Tamar's comments suggest teachers were considering how their "play" shaped their teaching, and in turn, student learning. In order to understand what their students experienced, they also reflected on the more affective aspect of learning in this way. Specifically, they spoke about how they felt playing their own characters - whether they were Dalai Lama, Eli Yishai, Sarah Palin, Sari Nusseibeh, or Sojourner Truth. Barry wrote, "The students are really into it and

so am I. My students enjoy being in character – so do I, especially with my stealth character[1]. I am learning a lot." Tamar, the single veteran JCAT teacher, replied, "Participating openly in character is one of the most fun parts of the simulation for me." By playing the game, and engaging in the kinds of thinking, skills, and creativity that was being asked of their students, the teachers assumed the position of learners. Being positioned as learners also transformed the relationships between students and teachers, as they were "in" the learning together. As such, they were actively juggling both stances.

A second form of role juggling focused on the complementary and challenging tension they experienced in being in the role of "teacher" as well as the role of their individual characters. For example, some teachers considered how they could use their characters to elicit behavior that they, as teachers, might not be able to accomplish. Dorian wrote, "In role, I get to be an 'agent provocateur' – in fact, I was approached by one of my students [online] and got to give a response that was the polar opposite of my real feelings." Samuel commented, "I was planning on using my character as a tool to address individual student issues as they arise without being their 'teacher.' Is this a bad way for me to approach the simulation? What do you all think?" In essence, by having this teaching "alter ego," the teachers engaged in a new role as a teacher - that of an "agent provocateur." They were able to challenge their students as their "character, "while providing support as "teacher." In order to accomplish this balancing some teachers kept their character identities a secret. For example, Samuel found that keeping his identity a secret added a dimension of playfulness to the experience: "[The students] communicate with characters they suspect of being me in the hopes of revealing my identity to the rest of the class. It is a sort of game within the game that my class plays."

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[1] Barry played two characters during the simulation. His students knew of one character, and the second he kept secret and what he is referring to here as his "stealth" character.

In sum, JCAT offered the teachers the opportunity to expand and complexify their roles positioning them both as teachers and learners, as themselves and as their character. This role juggling offered new pedagogical challenges for the teachers for which we attempted to provide support. The dual online spaces offered teachers the space to articulate their understanding of these roles ("I get to be an agent provocateur") and elicit feedback from others in the community ("What do you all think?").

Teacher Responsibility. Another area of "reflection on self as teacher" concerned the teachers' overall responsibility in the simulation game, including what they should be watching for in the game and what actions they should be taking. Since the majority had not participated in this type of teaching and learning experience before and were not used to facilitating complex simulations in their classrooms, they used Talk and Connect to "talk through" their understanding of their roles, clarify expectations of project directors, and explore new ideas with one another.

One common theme concerning their responsibility was the issue of character selection Both the selection process and the character choices was frequently discussed at the outset of the simulation, but concerns about related issues were also present throughout the duration. Before the simulation officially began, Dorian asked during a Connect call whether it was his responsibility to choose characters for his students, or if they should choose for themselves. Diana wrote in Talk about her decision to have her students choose Jewish characters in the simulation: "I did 'make' my students choose a Jewish character…I wanted my students to become more familiar with a larger Jewish world." In fact a persistent and on-going discussion among the teachers was whether all the characters should be Jewish. This issue reflects, we

believe, the teachers' sense of responsibility toward their curriculum, the context of their schools, their students' connection to Jewish history.

Similarly, they considered their responsibility when student character choices placed the students in vulnerable positions. For example, when some of the "anti-Semitic" characters were posting "hate speech" in JCAT[2], Anna defended her choice of allowing students to choose anti-Semitic characters. Posting in JCAT talk, she wrote: "We are not sorry we decided to allow our students to choose the 'bad guys.' Their discussions with other characters have been stimulating and they are learning how to deal with the [Henry] Fords and [Joseph] Kennedys of the world." As discussed in the final Connect call, teachers stressed the importance of the character selection process to the success of the simulation.

The teachers also reflected on their responsibility when they discussed the extent to which they should monitor certain aspects of the game. For example, Samuel asked, "Should I be policing this [students' character voices] more heavily or is this the mentors' business?" In the first Connect call, Rose shared her observation that some students were using "Facebook kind of language" in their private messages to each other, and wondered whether it was her job to monitor this. Dorian also wondered aloud how much he should "monitor the site" when he was "outside of character." In addition to their concern about monitoring, "policing" or supervising the site, teachers wondered how much they should reveal the 'true' nature of the simulation to students. In the first Connect call, Barry remarked that he was keeping the nature of the game "mysterious" and did not want to mention the presence of the university professors or students. One of the project directors responded that the mystery serves to "protect the imaginative space," while Tamar explained that she emphasized to the students that college students were playing,

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[2] These posts were written in character with anti-semitic content. It is perhaps the effectiveness of the students' command of their characters' racist beliefs that caught the attention of the project directors and teachers.

believing that this “ups the motivation.” These divergent comments in the Connect conversation help us appreciate how teachers were using the opportunities that JCAT offered to support their individual philosophies and approaches to teaching. This Connect conversation also reveals the power of synchronous spaces in providing opportunities for connection, discussion and reflection.

Teaching Challenges. The third area of reflection that we observed concerned the challenges that the teachers confronted in implementing and participating in the JCAT curriculum. Many different challenges were voiced about one’s teaching practice in JCAT, both practically and pedagogically. The most frequently cited challenge was time management, which is a common finding in past research (Romano, 2008). Jane explained in Talk, “I see all four classes of students four times per week for 50 minutes. We have met for "JCAT Wednesdays" in the computer lab…We do NOT discuss JCAT the other 3 sessions as nothing was cut from our curriculum, yet we are using one session per week.” Another challenge was student management within the simulation itself. With many participants, and the nonlinear nature of the simulation, feeling “on top” of things was a constant issue for some teachers. Tamar shared in Connect, “I think there are so many characters, I can’t keep track of them all. I don’t have time for other characters except my students.” In the same call, Samuel shared that it was hard to keep track of what his students were doing, since they were posting in both public areas and private areas of JCAT.

From these practical issues of management, pedagogical issues emerged. Teachers often reflected on how they were connecting their practices in the classroom to the online experiences of JCAT. Building on his comment from Connect, Samuel wrote in Talk, "I feel that there is sometimes a lag between the time when an idea is presented in JCAT and the time when I realize

I need to step in in the classroom to make sure the kids are on the right track." Not only did he need to technically figure out the multiple spaces where his students were working, he also needed to figure out pedagogically where his students needed to be supported and challenged. Another pedagogical aspect that emerged was connecting and integrating JCAT with the rest of the curriculum. Anna articulated this concern clearly in a Talk discussion:

> We try to challenge our students by connecting their JCAT personalities with the subject matter they are learning in class. We deliberately asked them to choose people who were living during the period of the Holocaust, so that we could use the tie-in. It seems to be working.

Anna's comments help us understand the ways that the teachers looked for connections between JCAT and their curriculum. For her and her colleagues, the students' characters choices were key to addressing these integration challenges. Jane approached this integration by focusing on key political, historical, and social issues that the scenario itself presented. For example, during the scenario in which a Darfurian refugee seeks asylum in Israel, she created a focal study on Darfur and Israeli refuges policy. She considered these issues in her Connect comment:

> If we did not spend enough time on Israeli politics, and Israeli refugees policies and the actual case, then the complexity was lost. They were the humanitarian, but did not tune into Israeli issues enough. I would suggest that at the right juncture we bring in a lesson on the repercussions for Israel.

Key to Jane's comment is the notion of maintaining the complexity of thinking, perspective, taking, and global politics. These issues are, indeed, pedagogical challenges.

Reflection on students-in relation. Not surprisingly, student learning was central to teachers' reflections on the JCAT experience. The Talk and Connect transcripts reveal two

aspects of student learning that teachers discussed: socio-cognitive dimensions, such as argumentation, engagement and motivation, and perspective taking; and relational dimensions, learning with mentors, peers and themselves. Again, these two aspects are separated in this article for purposes of understanding, but are inseparable within the context.

Teachers often reflected on the socio-cognitive aspects of student learning in JCAT, focusing on skills and concepts such as argumentation, engagement and motivation, and perspective-taking. Regarding argumentation skills, Samuel shared in Talk, “I am constantly trying to get my students to form opinions and back them up with logical arguments as well as recognizing the holes in other’s arguments.” This justified his strategy for the week: “Some people were having trouble thinking of anything to write so I told them to find someone saying things that made them angry or with which they disagreed.” In a later post, he continued: “This led to a discussion about disagreeing with others while remaining civil and being polite, using well-reasoned arguments to make a point, and listening to others and seriously considering what they have to say to figure out if they are making valid points or not.” Through this discussion, Samuel was relating the interactions of his students with the cognitive opportunities embedded within JCAT, connecting his philosophy of teaching to the simulation.

Engagement and motivation were also themes that often emerged in the data. For instance, Samuel wrote: “It [JCAT] has been fun for the class and has helped in getting my students involved and excited.” Motivation and engagement were often brought up in relation to cognitive factors, like argumentation skills and perspective-taking. For instance, Tamar responded to Samuel that “I have encouraged my students to look for characters with whom they can disagree. Often they do their best writing when they feel strongly about something.” In Connect, Anna shared that opportunities to develop argumentation skills were not confined to

class time: she overheard students having an engaging argument concerning JCAT during the lunch period at her school. In these examples, the relationship among motivation, engagement, and learning is exemplified. When students are engaged (and feeling) in the game, they are motivated to write at a higher level. In addition, the learning that is taking place is not confined to the classroom walls or even within the simulation game, but spills into the personal exchanges among students.

Issues of perspective-taking also emerged in relationship to engagement and motivation. . In Anna's classroom, the student playing Henry Ford was excitedly trying to earn "votes of confidence" from his peers. Through this social activity, the student attempted to persuade his peers that he was a suitable representative to put forth a vote in the fictional trial by effectively portraying the character's perspective. Tamar shares that taking the perspective of others by being in character "frees them [students] up to actually show emotion, something my sixth graders aren't always willing to do." Concerns about the ability of students to take character perspectives also arose. Reflecting on a classroom discussion, Samuel wrote, "It was a bit of a challenge to get the students to think as their characters." Similarly, Diana worried in Connect whether her students were brave enough to maintain characters' voices. She also related character voice with student ability, explaining that some of the "weaker" students were getting more messages than they could handle because of the popularity of their character. Through these discussions, teachers were articulating their emerging understanding of how to support their students as they learn in JCAT, and were also inviting responses from others in the community.

Another theme in the teachers' reflections on student engagement was that of the students' relationships in the game. Both positives and challenges were noted regarding

relationships among student participants, most often related to skills such as argumentation and perspective taking. For example, Anna shared, "We had some truly interesting arguments going on between characters that did not know they were sitting next to each other in the same classroom." When discussing the selection of student justices[3] in Talk, Jane suggested Ariel Sharon, explaining that the students[4] playing him were leaders and "their enthusiasm will encourage others." Occasionally, teachers talked about their actions when student concerns arose. Diana recalled a situation when she used an argument between two characters as a teachable moment: "My Moshe Dayan has been emailing Joseph Kennedy, incensed about his posts. I have tried to encourage Moshe to respond as an 'adult' diplomat." These quotes are examples of the ways teachers are thinking about the novel ways in which students interact and learn within JCAT, and their roles in facilitating those processes such as selecting justices and supporting student discussion.

The relationship between the graduate student mentors and middle school students was discussed more than any other relationship, in both Talk and Connect. A common concern among the teachers was that the mentors' language was too complex, and that students were receiving too many private messages. Talk and Connect both emerged as a venue for teachers to speak on their students' behalves. Barry wrote, "Our students need to understand what the mentors want from them (using language the students can understand for example, small portions of knowledge)." The teachers translated these concerns into concrete suggestions, giving rise to the idea that there needed to be more consistent communication between the mentors and the teachers. Rose offered a concrete recommendation, "Each teacher needs to send in what days

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[3] Midway through the simulation "justices" are selected from the middle-school student players as well as from the university mentors. These justices lobby other participants for "votes of confidence" until they receive the requisite number in order to make a "ruling" in the case.

[4] In Jane and Anna's classes, students teamed up in groups of 2 or 3 to play different characters.

they meet, how many students and the ages of the students, to let the mentors know the expectations of what students can handle." These venues afforded teachers a platform to voice their needs about how others can support their teaching, and thereby student learning.

Discussion

In this section, we discuss how the two professional development online spaces appeared to facilitate the kinds of reflection we describe above. We identify some of the similarities and differences in teachers' use of and preferences for the spaces. We then discuss implications of the findings, focusing on the clarification of our roles as teacher educators.

Teachers' uses and preferences. Since the natures of the asynchronous and synchronous spaces are distinct, our original research purpose intended to identify differences in the ways that teachers reflected in these spaces. However, the data did not reveal clear cut distinctions. Instead, we observe that both spaces provided opportunities for teachers to reflect on their teaching practices and students' learning, as well as clarify their understanding of the game, all of which facilitate the integration of JCAT in the curriculum. Both spaces offered opportunities to explore key thematic strands concerning teaching practice such as the teachers' role and responsibility, character choices, student-mentor relationships, and teaching challenges that they confronted. We are struck with the themes that emerged when teachers discussed student learning. The aspects discussed, such as supporting argumentation skills, supporting relationships, and issues of character, are the very elements that are crucial to ensuring meaningful learning within JCAT. The teachers used both spaces to work out their understanding of the game, reflect on the successes and challenges in its' implementation, and to learn from others in the community.

Since we found that both spaces elicited powerful reflection, it may lead one to conclude that only one space was necessary. However, we want to emphasize that the complementary

nature of the dual spaces created multiple access points for reflective opportunities for participating teachers. Having both spaces allowed for teachers' individual preferences and preferred learning modalities. For example, while Samuel spoke sparingly in the Connect discussions, his participation was plentiful and thoughtful in Talk. Dorian and Anna both found the Connect discussions redundant and felt that all the conversations could be held in Talk. Conversely, Barry did not choose to actively participate in Talk, but was a frequent and lively contributor in the Connect calls. Rose commented that she enjoyed the "face to face," "back and forth" nature of the conversation, while Samuel appreciated the "direct feedback." Jane commented that she liked "hearing others' voice inflections" in contributing to a greater sense of being present with one another. These comments support our initial selection of a voice-enabled synchronous space to promote a feeling of presence and immediacy among the community. Using two different spaces allowed teachers more opportunity to share their voices in the ways they felt most comfortable.

We did notice, however, that the synchronous nature of Connect did yield some unique patterns. For instance, we observed that the teachers tended to discuss the challenges that they experienced with JCAT (such as technical issues, time management, and challenges supporting students). In line with the findings of Duncan-Howell (2009), perhaps teachers came to the conversations with problems to be solved; both problems and solutions were generated more in Connect. Teachers also asked many logistical and global questions about the simulation game to the project directors. Perhaps it is the immediacy of Connect that helped foster such a context. At least one project director participated in each call, offering immediate feedback and clarification (while the project directors were enrolled in Talk, they did not participate frequently). Guidance was offered by "experts" – the project directors, teacher educators, and a

veteran teacher. For example, when Diana shared that she was concerned about how well the students were able to maintain character voice, Miriam suggested concrete in-class activities that might help them get into character, and a project director suggested unique strategies for researching their characters. Tamar also gave suggestions from her experiences with the simulation and Rose offered her advice on what worked in her classroom. The "this worked for me" discourse pervaded the Connect calls.

These findings complicate Chen et al.'s (2009) suggestion that synchronous spaces may not be optimal for reflective opportunities. However, we also agree with their assertion that attention must be clearly focused in order to elicit reflection with professional development, and that this is a challenge with synchronous spaces. The advantage of using an asynchronous space in addition to Connect is that it provides the teacher multiple opportunities to think, re-articulate, and edit their responses.

Implications. From this study, we walk away with a clearer understanding of teachers' needs concerning the integration of simulation games in teaching and learning. This bears implications on our roles as teacher educators, such as the careful selection of online spaces for professional development aimed at supporting teachers work in this endeavor. Most centrally, when selecting an online space to support professional development learning communities, teacher educators must pay careful attention to the professional development objectives, and consider how the specific affordances of the online spaces support the goals. Based on our experiences, we recommend the use of dual or multiple spaces, in order to address multiple learning needs, technological skills and comforts, and different demands on teachers' times. We recommend that the spaces exist in a complementary fashion, but caution that requiring too much interaction in every space can lead to teachers feeling "stretched thin" that week.

Conclusion

The significance of the research discussed in this article resides in the findings that address some gaps and limitations in past research. First, we fulfill the call for more teacher-centered research regarding technology integration by examining how teachers integrate JCAT in their classrooms, and consider the effects on teaching practice and student learning. We approached the study of professional development from the standpoints of the teachers, preserving their voices within the Talk and Connect transcripts. Second, while most studies address one online modality for professional development, we examine the influence of two coexisting modalities on participants and each other. Carefully documenting the ways teachers used multiple online spaces to learn exemplifies their complementary relationship, and also informs our future instructional design decisions, such as forming discussion prompts and structuring Connect calls. In addition, conducting a systematic analysis of online synchronous spaces also generates insights not frequently realized in research. Finally, our focus on professional development regarding technology integration – on simulation games in particular – is necessary in this age of rising technology in K-12 classrooms.

We consider this research study to be exploratory in nature. We are left with many unanswered questions in which will further drive our research agenda. Our most pressing line of inquiry involves a deeper look into the distinctions between asynchronous and synchronous spaces. We understand now how they were complementary, but we want to understand this relationship more deeply; specifically, when looking at a type of reflection (teacher responsibility, or student interaction), was one type more prevalent? Understanding this may better allow us to appreciate the fluidity of reflection in these learning spaces. Also, while we have some hunches about how our facilitation influenced teachers' interaction and reflection in

the online spaces, we want to take a deeper look at how our choices directly influenced what happened with teachers. These insights will help drive the next iteration of JCAT, but also generate some techniques that facilitators in other online learning communities can incorporate. Finally, next steps include more deeply exploring the ways in which teachers interacted with each other in and across the spaces, since each member drives the direction of the community (Lock, 2006).

As an exploratory study on the nature of reflection in which the teachers engaged, as well as the environments which this reflection was articulated, we are poised for the next step of the research. If, as Kegan argues, adult professional practice is transformed by an "ingenious balance" of challenge and support, (1994, p. 45) we are similarly challenged to understand what this kind of balance looks like in online synchronous and asynchronous spaces. We are grateful to the JCAT teachers for teaching us so well, and for inspiring us to learn much more.

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