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Your iPhone Cannot Escape History, and Neither Can You:
Self-Reflexive Design for a Mobile History Learning Game

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Fifth- to seventh-grade players of the mobile augmented reality game (ARG) *Jewish Time Jump; New York* (Gottlieb & Ash, 2013) take on the role of time-traveling reporters for the Fictional *Jewish Time Jump Gazette.* Their editor has tasked them with retrieving a story "lost to time." Players, on site in Washington Square Park, in Greenwich Village, New York "land" on site on the eve of the Uprising of 20,000 in 1909, the largest women-led strike in U.S. history. Using their iPhone or iPad, players interact with dozens of digital characters including striking workers, factory owners, labor organizers, journalists, Tammany Hall police, and thugs for hire. Later, players time jump to 1911 and are on site at the Triangle Shirtwaist factory fire in which 146 people, mostly voting Jewish and Italian women, died. During their travels, players receive photographs from the past based on their GPS location and they pick up various items into their digital inventories: newspapers of the period (some translated from Yiddish), pamphlets, ephemera, and various primary source documents. Toward the end of the game (**Spoiler Alert**), as they travel back in time to the present, they receive a recent news article revealing that the iOS device on which they have played the game is also the nexus of a labor dispute, as Apple works to address serious grievances on the part of Chinese workers at the Foxconn plant who are building the devices. It turns out that the players have been involved in a labor dispute the whole time and they did not even realize it—by using an iOS device.

GAME DESIGN FOR RESEARCH AND LEARNING

Working with a team of more than 20 engineers, historians, researchers, and educators, I designed *Jewish Time Jump: New York,* as both a learning intervention and a design-based research project.

The game was funded by The Covenant Foundation and designed and developed at ConverJent: Jewish Games for Learning, an organization I founded in New York. It was built on the ARIS platform for iOS (iPhone and iPad). My doctoral dissertation comprised design-based research conducted on *Jewish Time Jump: New York.* Design-based research is an iterative, proto-theory-testing approach to developing learning theory and design knowledge. Designer-researchers develop a learning environment or intervention over the course of a number of iterative cycles comprising prototyping, field trial, data gathering, analysis, and return to theory and redesign (see Barab & Squire, 2004: The Design-Based Research Collective, 2003; C. Hoadley, 2004; C. M. Hoadley, C. M. 2004). As I piloted and then iterated the game, I worked to gather data in the field from a series of game days with boys and girls in Jewish supplementary schools (after-school programs). I would bring a design to a game day, gather pre- and post-survey data, conduct interviews, and record video and audio observation of players. The back-end system of ARIS also gathered data about each player's moves in the game. Between iterations, I analyzed the data and made alterations to the game to work toward moving the learners' experiences closer to the learning goals; specifically, those centered on civic and democratic education goals and history education goals. The outcomes of these inquiries included a series of design techniques for helping players to belter understand the points-of-view of characters in the game with whom they disagreed. That specific research is published elsewhere (Gottlieb, 2015).

This chapter focuses on the design approach used in the finale of the game, the self-reflexive moment in which the iOS device itself and the player using it are implicated in the historical moment and theme of the game. I drew from self-reflexive traditions in theater, cinema, and nonmobile games to craft the reveal of the connection between the mobile device and the history that the learners were studying. Through centering on this particular design element, I will demonstrate how self-reflexivity can be deployed in a mobile learning experience to tie history to contemporary concerns. What does it mean to bring self-reflexive techniques to mobile learning?

What should we consider as we bring these techniques to bear on the mobile learning environment? How can we take advantage of the affordances of mobile self-reflexivity? I explore these questions, and more, through the case of attempting to bring the self-reflexive technique to mobile learning; specifically, in a mobile ARG for leaching history.

Self-Reflexivity as a Means of Tying the Past to the Immediate Present

One immediate way of engaging learners in the study of history is to tie the medium of communication for the lesson itself directly to the enduring historical themes of the subject matter being covered.[1] For issues of history involving economics and social systems, turning to the means of production can be particularly effective at implicating, and therefore involving, the learner in the historical theme. By "implication," I mean that the learners consider their own role in relationship to the enduring historical themes being covered. Perhaps they ask: "what role am I playing in this history as it happens?" The mobile device lends itself to such historical self-reflexivity, or self-reference, for a number of reasons.

The mobile device is ever-present as adults and children consistently turn to their mobile screens throughout the day. For many, smartphones are integrated into our daily living and the way we relate to one another. They are part of our interactions, whether we use them to fact-check or find a restaurant. Their presence and intimate inclusion in our lives provides numerous opportunities and touchpoints through which considering the device itself can be relevant. Used in a history lesson, the mobile device can provide digital primary and secondary sources far more easily than paper, and they can be used on-site, in the field, and outside of the classroom.

If we, as history educators, can move one step further, and tie the mobile medium, the platform of daily digital interactivity of our learners, directly to the historical theme or domain that we are exploring, we may find a different kind of line into student engagement. In such situations, we can ask "what does your smartphone tell you about your role in history?"

This self-reflexive step can provide a different set of opportunities to designers of mobile learning environments and the educators who use mobile history ARGs. As the mobile game hails or interpellates the player (see Althusser, 2006), the self-reflexive technique draws attention to the mobile form itself, as well as the players' involvement with and use of that form.

In this chapter, I argue for the use of self-reflexivity in mobile history games through the use of the case study *Jewish Time Jump: New York.* I draw from history education theory, civic and democratic education theory, and media theory including cinematic and game studies work. I explore techniques through which designers may avoid pitfalls they are likely to encounter while developing mobile ARGs, and I provide a framework by which the self-reflexive interactive design can work in broader application in technology and learning.

Three key questions arise out of the self-reflexive "turn" that can provide an opportunity for learners to engage in history as active citizens. First, how is this mobile device made and second, what economic and social systems play a role in the processes of putting the device into the hand of a learner/player? The third, and critical, question is: what role have I played, or do I play, in this process? Beyond contemporary mobile games, these provocations driven by a self-reflexive technique can be applied to any new media-based or interactive learning environment.

History: Preparing Engaged Citizens with Enduring Themes

Before addressing the question of how might we move mobile history games closer, as a genre, to their learning goals, it is important to first ask: "What is the purpose of history education?" (Gottlieb, 2015). Barton and Levstik (2004/2012) articulate a particular approach to the goals of history education in their book *Teaching History for the Common Good.* For these authors, history education is to prepare students for participation in a pluralist democracy and to help engage citizens in "collaboration toward a common good" (Preface, paragraph 4). Here, history education is understood as a critical part of civic education. It is about helping learners to

participate in a democracy through the ability to engage with political institutions and through participation in civic society (such as through religious institutions, charities, and unions).

Barton and Levstik (2004/2012) cite Turner and Dewey and note that history's goal is to better understand the present. Thus, addressing significant and "enduring themes" or "enduring debates," is essential. An "enduring" theme must speak to the importance of connecting the historic to the present day. In addition, "enduring" implies that better understanding the present day requires exploration and investigation of history (Chapter 4, para. 3). Enduring themes are more than just a connection between present and past. For Barton and Levstik, these themes can teach what it means to participate in a democracy.

Drawing on their own research; as well as research from scholars such as Walter Parker, Benjamin Barber, Shirley Engle, and Anna Ochoa: Barton and Levstik (2004/2012) note the importance of reaching beyond history education that is too often focused on patriotism. Patriotism is also highly valued in dictatorships; but, for a democracy, they argue, we must reach further. Participatory democracy for Barton and Levstik means that people "bring their differences into the open, discuss them, and move forward with mutually acceptable actions where possible" (Chapter 2, Public Education and Democratic Citizenship, para 12.).

How might educators find themes reaching beyond notions of patriotism and toward issues of participation in political institutions and civic society? They can do this by focusing more on the efforts of diverse groups of Americans to achieve full participation in the democracy through themes such as women's suffrage, emancipation, the labor movement, Jim Crow laws, and The Bill of Rights, and less on Thanksgiving and Betsy Ross. Educators can do this, Barton and Levstik (2004/2012) argue, because "Americans will never fully share a national identity so long as their earliest history lessons extol European conquest and praise slaveowners" (Chapter 3, Identification, Participation, and Pluralism, paragraph 12).

If the purpose of history is to prepare learners for citizenship in a pluralist democracy,

how might we understand the term "citizen?" Westheimer and Kahne (2004) provide a particularly helpful framework in the case of designing a game-based environment, when they characterize the actions of different kinds of citizens. Their framework includes three models of citizenship: personally responsible, participatory, and justice oriented. The personally responsible citizen obeys laws, works and pays taxes, is responsible in her/his community, and volunteers. To "solve social problems and improve society" one must be personally responsible and be law abiding (p. 240). The participatory citizen knows how government works, organizes community care efforts, and understands strategies for collectively working on tasks. In this model, solving social problems and improving society is based on citizens' active participation, including taking leadership roles within already established community systems and structures. Justice-oriented citizens critically evaluate economic, political, and social structures, looking for root causes. They address injustices and understand democratic social movements, collective and community-based action, and the process of making systemic change. In this model, solving social problems and improving society requires debate and the changing of systems that reproduce patterns of injustice. Westheimer and Kahne point out that a "personally responsible citizen" is not necessarily democratic, as totalitarian regimes also expect their citizens to work, pay taxes, and volunteer. Thus, the authors concentrate on differences in educating the participatory citizen and the justice-oriented citizen.

The authors point out the characteristics of the justice-oriented class that best demonstrated critical analysis and social critique. An educational programmer at a school they highlight, Bayside, described a good citizen in this way:

> A good citizen actively organizes with other people [to address] causes of injustice and suffering.... A good citizen understands the complexities of social issues, political issues, and economic issues, and how they are tied together, and is not always willing to accept the definition of a problem as presented to them by politicians. (Westheimer & Kahne, 2004, p. 255)

Students at this school investigated a number of topics, including child labor practices, and

eventually asked school officials to be aware of the practices of the companies from which the school purchased school T-shirts and uniforms. The students in Bayside were more likely to seek out root causes and be more interested in politics than the students in a more participatory citizenship-oriented program. They turned their sites to deep, critical questions. Through the design *of Jewish Time Jump: New York*, I sought to answer questions such as how can those designing mobile history games design promote an understanding of enduring historical themes, linking the past to the present and encouraging active democratic citizenship? How can mobile designs promote participatory and justice-oriented citizenship and learners who have the ability to make critical analyses?

Every medium provides unique affordances, or particular actions that medium facilitates or allows. Mobile devices have delivered particular affordances to teaching and learning, including the ability to use toolsets outdoors and on location. Consider the compass app for navigation, delivery of relevant media such as digital versions of primary historical sources, and recording apps for conducting interviews in the field. Just as mobile affordances have allowed for environmental science investigation on location (Klopfer & Squire, 2004, 2008), they have likewise opened up possibilities for place-based, on-location history gaming, situated documentaries (Gottlieb, 2014, Gottlieb; 2015; Gottlieb, Mathews, Schrier & Sly, 2014; Hollerer, Pavlik, & Feinman, 1999; Mathews & Squire, 2010; Schrier, 2005; Waglar & Mathews, 2012). It is important that designers and educators pay attention to the unique affordances of the medium in which they are working, especially as those affordances pertain to the subject matter at hand. Here, I wish to suggest another approach to using the mobile device for history education, which is linked not only to the device's mobility, but also linked to the materiality of the device and the attendant history of that materiality—namely, a particular kind of self-reflexive turn: turning the player/learner's attention toward the means of production of the mobile device itself and the how those who use the device are implicated in those means of production.

Self-Reflexivity, Political and Civic Engagement, and Design Choices

Dune (2014) and Kirkland (2007, 2010) have examined self-reflexive techniques in video games, drawing on the Brechtian distancing effect. Dramatist Bertolt Brecht's concept of *Verfremdungseffekt,* or alienation, refers to a designed dramatic effect of foregrounding the form of a performance to refocus the audience/observer attention away from the content and onto that form, the formal devices deployed, and the themes (Dune, 2014, p. 80). Examples of self-reflexive turns in video games, which may or may not be used in a Brechtian sense, might include references to other video games inside of a videogame narrative, or faked "bugs" inside of a game.

In order to push beyond the simple formal use of self-reflexivity in media and toward history, civic, and democratic education; I wish to turn back to Polan (1974) for analysis of Brecht's political and social engagement through art. Polan clearly draws a distinction between formal self-reflexivity and political self-reflexivity in art. He argues:

> conscious and deliberate self-reflexivity—may be nothing other than an expansion and making manifest of inherent qualities of art…. As long as such an art does not connect its formal subversion to an analysis of social situations, such art becomes little more than a further example of the disturbances that go on as we live through a day. (paragraphs 21, 21)

Further, Polan explains Brecht's attitudinal shift in the political. For Brecht, the attitudinal position of the viewing subject springs from an attitudinal position in the work—the political artwork embodies a difference between the way things are and the way they can be. "Political art compares an image of human beings as 'unalterable' to one of them as 'alterable and able to alter' (quoted from 'The Modern Theatre Is the Epic Theatre')" (paragraph 28). Following Polan's analysis, mobile designs for fostering civic engagement must move beyond self-reflexivity focused only on consciousness of the medium and toward consciousness of a citizen's role in effecting social change, such as change in a democracy.

This understanding of self-reflexivity in the service of suggesting potential civic action and change-making leads to the design rationale for self-reflexivity in *Jewish Time Jump: New York.* The rationale for these design choices draws on narrative techniques used previously in video games and cinema. Here I am referring to a narrative device of emotional, surprising, late-stage, self-reflexive reveals that implicates the player or audience member's own ethical choices—making the player or audience member complicit in the relevant action of critique. In games, this is exemplified by Warren Spector's videogame *Deus Ex* (Spector & Smith, 2000, as discussed by Gee, 2007) in which the player's complicity in actions they likely would not have sanctioned is revealed after the fact. It is also exemplified in Brenda Brathwaite's board game and meditation on the Holocaust, *Train* (2009). In *Train,* players work to move trains with cargo to their station, only to later discover where the trains are headed—to concentration camps. The realization as to where the trains are heading usually concludes the game (Brathwaite & Sharp, 2010; Brophy-Warren, 2009). Among many themes, the game is primarily about complicity. That complicity is delivered through the procedural rhetorics[2] of unaware action or action-in-denial and its potentially horrific, even evil, consequences.

Cinema is an important reference for modern mobile media self-reflexivity because filmmakers and video artists have had a long head start on innovating the self-reflexive turn in audio-visual media. The self-reflexive and political turn in cinema is exemplified by Vertov's (1929/2002) *Man With a Movie Camera,* which showed the modes of production of the film itself by showing the acts of cinematography and editing in its creation. Yet it is Block's (1973) short film *No Lies* that broke ground in terms of ethically implicating the film viewer in fraught acts of viewing and intrusion. This is because the viewing of *No Lies* itself reproduces a violation of its subject (a woman interviewed about an assault) and, as the film itself violates the audience's implicit trust, all is not what it seems. At the conclusion of the documentary, the filmmakers reveals the act of violence was in fact, staged, violating the audience. An understanding of this history of games and films making self-reflexive turns that simultaneously hail the player and audience as complicit and

implicated, paves the way for such turns in mobile ARGs and situated documentaries.

SELF-REFLEXIVE DESIGN IN THE FIELD: *JEWISH TIME JUMP: NEW YORK*

Initial Design Drawn From Theory

From the earliest pilot *of Jewish Time Jump: New York,* a design concern was to powerfully tie the history of the Uprising of 20,000 and the Triangle Shirtwaist Factory fire to the present day. I theorized, following the lead of the aforementioned models, that using a narrative self-reflexive turn to the mobile device itself would tie the historic moments to the immediate present through enduring themes and controversies. In addition, such a turn should, in theory, implicate the player personally in the historic moments, as the themes of labor disputes, employment, and production shift from the historic shirtwaist workers and factory owners in 1909-1911 into the present, the immediate, and the global. By linking the present and past through enduring themes in this way, and by involving the learners in a personalized way in the gameplay, I was reaching for pathways toward participatory and justice-oriented citizenship engagement. The method of making a personal connection for the player was originally envisioned in the finale of the game, in which it is revealed to the players that the mobile device upon which they have played the game is itself the nexus of labor disputes.

Upon returning from their reporting and investigating adventures in the early 1900s to "present day," players then have present-day encounters. These encounters include videos of a contemporary investment banker commenting on modern labor relations and a rabbi telling the story of her great grandmother who survived the Triangle Shirtwaist Factory, went on to testify in court against the owners and sent on to fight for fire-code regulations. In addition, players receive a contemporary news story discussing the workers at Foxconn in China who build iPhones and iPads, the recent disputes over worker mistreatment and unhealthy conditions, and Apple's moves to improve conditions (Reuters, 2012).

This end-game reveal was consciously paralleled with the narrative of the player's return through time travel from the past to the present day. The decision to use the self-referential turn on the device itself was intended to transcend the diegesis of play and to raise to consciousness the medium of the mobile device itself. This design decision is not intended for an end result of the breaking of the "fourth wall," creating distance between the player and game, but rather to deepen the player's personal play experience, to implicate the player in history, and to tie the action of the player in playing the game directly into the enduring themes of history.

The players' use of the game device itself also has implications and is imbricated within the power structures and struggles the player investigates and explores in the other content of the game. Just as the player meets strikers, organizers, and bosses from 1909-1911, it is clearly communicated that: (1) there are still labor clashes today and (2) that the players themselves are involved to some degree with those struggles; the device they are holding (and usually the device their family owns) is the subject of labor disputes. The device the learner is carrying may have been built in China by people working in conditions that would not be acceptable in the United States and that have been blamed as the cause of the workers' deaths.

Such a moment, developed in the pilot, I theorized, should raise questions and provide educators the opportunity to raise their own questions, such as: How is one implicated or active in history, even when unaware? How can we pay attention to where our products come from and how they are produced? The need to implicate the player in the enduring theme in history, in this case labor disputes, was a clear design goal. The intention was that a player should not finish playing the game without being confronted by such questions of player implication being raised within the game.

Learning From Implementation Challenges

Jewish Time Jump: New York contains more than 20 digital characters and dozens of events and historic artifacts. Thus, the actual process of *deploying* the self-reflexive and player-implicating game event in a sprawling, mobile, place-based game proved to be complicated. My hope is that through sharing the challenges and solutions in the context of developing and testing mobile place-based augmented reality gaming that other designer-educators will be able to benefit from what I learned, and they will have an advantage in designing other mobile self-reflexive calls for citizen action.

The study was conducted over the course of a number of game days with analysis and game iteration in between those events. Forty-three fifth- to seventh-grade learners (24 girls, 21 boys) from supplementary schools participated in gameplay over the course of six game events and three design iterations (some game days occurred within a few days of each other to allow for more players in each play session, or, in one case, close single-player observation). During the game days, the learners took presurveys, were then trained on the device, and were set into the park to play the game. Following each play session, they took a postsurvey and participated in debriefing and interview/discussion. Some players also took part in longer interviews. In between the game events, I analyzed the data, including video observation footage and server logs that recorded each player's specific moves. This chapter can only address the self-reflexive design technique (for full data sets and detailed description of the full study see Gottlieb, 2015).

In the first event, the pilot of the game, given the sprawling nature of the narrative and the ability for learners to immerse in various historical artifacts, only a few students completed the game, and therefore did not receive the Foxconn news story. In the first iteration, I tightened the game structure to reduce play time, but in addition, I added *an Afikoman,* referring to a hidden bonus or special event, based on the idea of the "Easier egg" in video games (hidden bonus material or levels). The Afikoman refers to a game played during the Passover seder in which a piece of matzah is hidden, and the seder may not be complete until it is found or returned by the children

tasked with finding it. The digital Afikoman held both contemporary videos and the news article. In this way, all players who did not reach the conclusion of the game would be granted the Afikoman by the educators at the end of play so that they could experience them as well. In order for the self-reflexive late stage reveal to work, the players must encounter it. In a place-based game with multiple routes and possible player paces, that means accounting for providing the reveal in a nonlinear fashion.

In field testing this next iteration, I found that some students picked tip, viewed, and did not read the article about Foxconn, but rather jumped ahead to complete the game. Even when presented with a second chance to read and review the article along with students who received the Afikoman, one girl's short answer in the postgame survey reveals a lack of connection to the enduring historical themes:

> [Crossed out]: I was kind of rushing to finish, but I think it had to do with the difference between Jewish rights today and 100 years ago [end cross out]. Jewish rights today are very different from 100 years ago. Human rights in general were different! Some people were so high up the hill, they thought they had more rights than other people! Bosses treated workers like scum and would do anything to earn money, even risk lives of workers!

It is possible the learner is not connecting the global present-day labor issues with those of the past. Regarding the humane treatment of workers, she writes, "human rights in general were different [than they were 100 years ago]." It is also possible that the article regarding Apple working to improve its conditions provided a contrast to owners' disregard for worker safety in the years prior to the post-Triangle fire labor laws. Given this learner's dual opportunity for exposure to the article, both during game-play and again during the Afikoman following main play, the persistent lack of connection to the enduring historical theme signals the need for a better design solution to reach the educational goal.

In the next iteration, I took a different approach, based on Levstik and Barton's (2005/2010) alternative strategies for teaching history of "start locally, connect globally" and "start globally, connect locally" (Chapter 6, Sections 2 and 3). For example, shall a teacher introduce the themes

with examples from the town the learner lives in, or with related events in a location thousands of miles away? In this case, I tried what I call a suprareveal. Rather than giving away the reveal at the end (or in the case of the Afikoman, near end) of the game, which was a local to a global strategy, I added a global starting point to frame the entire game. At the beginning of the game, the learners receive an article in the form of a clue prior to meeting their editor. It arrives in the form of a 2013 article about a recent garment factory collapse in Bangladesh and the resulting 1,100 deaths (Yardley. 2013). Learners are guided to read just the first two paragraphs of the article and then move on to find their editor.

In field testing this version of the game, the discussions of the factory collapse began immediately as players asked how this related to the game and their mission (they had watched an initial introductory video clip telling them to go to the park to meet their editor, but had not yet departed from the staging area to the park). Questions included "What does this article have to do with Jewish history? and "What is the date on the article?" Although surveys in previous iterations revealed lack of awareness of contemporary global issues of worker safety and treatment, in this latest iteration, there was no evidence in either postgame interviews or open-ended answers on postgame surveys of lack of awareness of the contemporary global issues of worker safely. Neither was there evidence of such a confusion or misunderstanding in the video footage in the Afikoman about Foxconn.

Learners read the Bangladesh article out loud prior to the game and asked questions about the article, which provided evidence of awareness of the historic theme. There was also a shift from evidence of lack of awareness regarding contemporary labor struggles, such as the girl quoted above, to an iteration devoid of disconfirming cases of awareness. Given both of these observations, it appears that the use of a suprareveal prior to or at the early stages of play in a mobile ARG can offset issues of lack of attention to contemporary cases as well as provide a conscious frame for the game to come. In addition, the suprareveal allowed for maintaining the surprise reveal either upon

reaching the conclusion of the game, or in receiving the Afikoman. In other words, by providing the Bangladesh article early in play, I could set up the historic theme while maintaining the late-stage reveal of the Foxconn article. The player could be primed with the theme and still discover that they had been unaware that, for the length of the game, they had been using a device that is at the center of labor disputes.

Beyond Iterative Game Design and Into Curriculum

Invoking the self-reflexive turn, just as any provocative learning moment generated in a game-based environment, also requires reflection and processing. Once I was assured that players on the ground encountered the self-reflexive reveal (the surprise that the iOS device itself was the subject of labor disputes), and that they could make connections between the past and present events through the enduring historic themes, I took on an additional project to extend discussion of contemporary labor practices. While the formal research study of the design-based game iterations concluded, I began a collaborative project between my games organization, ConverJent, and the Jewish Women's Archive, funded by The Covenant Foundation, to develop a modular curriculum for the game. This curriculum, made of four modules which can be used together, individually, or in various combinations, can be deployed by educators in various settings, with various time constraints, by using any number of modules covering different, yet related, subjects. In the Contemporary Labor Issues module of the curriculum, we included guiding questions about the *Reuters/New York Times* article about Foxconn as well as the Bangladeshi factory collapse. These included the following questions:

> • What situation is this article describing? What are the issues that factory
> owners and workers need to address?
> • How is this story similar to, or different from, labor issues in New York City
> in the early 20th century?
> • As American citizens, do we have a responsibility to change labor practices
> in other countries? Why or why not? (ConverJent and Jewish Women's Archive,
> 2015)

While other aspects of the Contemporary Labor Issues module address contemporary labor issues in America, one area that they do not currently address is contemporary sweatshop conditions in New York City. Were there further iterations, the inclusion of questions and issues around sweatshops in New York City would be an important addition to focus on continuing opportunities for civic engagement on the site of the game.

CONCLUSIONS

Self-reflexive techniques have a long history in other media. Among a number of goals for the wider research project, I sought to explore the affordances of self-reflexive techniques in mobile history learning. How could self-reflexive techniques provide learning opportunities that would be bolstered by the devices used to play the game? By pursuing deepened conversations about the contemporary labor practices, I aimed to leverage self-reflexivity in *Jewish Time Jump: New York* to help learners understand their personal connections to, and implication in, historical themes. I also worked to provide opportunities for discussion to lead to enhanced participatory and justice-oriented citizenship. Through the historic figures in the game, including labor organizers and manufacturers who organized around their own interests, the game emphasizes issues-based advocacy and the ways in which citizens organize. By positioning players in the role of journalists, the game suggests the connections between citizen journalists, who ask challenging questions and seek multiple sources, and historians who use similar approaches. Through the game narrative, players also encounter the alignment of political machinery (Tammany Hall) and business leaders. Through all these themes, the game works to show power structures and how civic engagement and civil institutions can make change, whether that is the end of the 1909 Uprising which led to all but a handful of garment shops becoming unionized (the Triangle Factory was one of the few that did not), or whether that meant that some of the contemporary local newspapers supported the manufacturers (*The*

New York Times) while others supported the strikers *(The New York Call, The Daily Forward).* The self-reflexive turn frames all the various themes and questions with the broader question: how are you, the player, involved in history when you use a mobile device?

While longitudinal studies would be required to determine whether players look on new participatory or justice-oriented civic engagement activities; the Foxconn and Bangladesh articles, when used together, generated discussion of contemporary labor disputes in the context of historic labor disputes. Those two articles, used in concert, also eliminated confusion and erroneous conclusions about contemporary labor disputes. This method moved learners closer to the civically engaged model of self-reflexivity that Polan (1974) points out in Brecht's work. Brecht's desire for social and political engagement aligns, in main ways, with the models of participatory and justice-oriented citizenship education, and so it is fitting that his formal techniques can lend assistance to design for mobile history learning. By building curriculum around the questions raised through self-reflexivity, educators can further guide discussion, once the provocation in the game has taken place.

What additional significance can self-reflexivity hold for mobile learning designers and educators, or future interactive media designers and educators? First, the ability to implicate a learner/player in the content through the form of the medium means that individual learners need not arrive on the scene already having a personal connection to the content, but only the form—the use of the mobile device, or other technology platform being used. The form connection is far more likely given that the learner/player must use the form to reach the content of the game or simulation, when there is no guarantee that the learner has had previous exposure to the content material. You cannot read this sentence without engaging in the process of textual production and reception. Likewise, the mobile user is implicated in mobile manufacturing, design, sales, and marketing; the virtual reality user is implicated in the means of production of the headsets, vests, visors and other devices. If our learning content can be connected to

history and economics, then so can our relationship to the medium through which we teach.

And yet, the implication of the player/user in historic themes requires further design and contextualization. The design must ensure the player's experience of the self-reflexive turn—something not so simple in a mobile game. The experience must be adequately prepared so that the notion of complicity occurs through participation in the process—a late-stage reveal. Complicity, or implication, requires participation in the text (here text refers to any piece of media) first. The frame by which to understand that context might need to be primed early, such as through foreshadowing or a suprareveal in order to clearly establish the enduring historic theme. Ideally, the implication of the player/user is also embedded in reflective discussion in a curriculum so that it can be unpacked and digested. Then educators can link Brechtian engagement to civic engagement—to work within a democracy to shift from the way things are to "the way things could be." Neither iteratively designing a game nor taking time unpacking the self-reflexive turn with learners are easy processes, yet, self-reflexive techniques for mobile media, augmented reality, virtual reality, and future forms of media mean that designers have a powerful mode for turning the medium back on itself in order to impart the player/user's position in history as an active participant and agent. With self-reflexivity, mobile devices can become mirrors.

NOTES

1. Applying the self-reflexive technique here, to this very chapter, we can consider the historical subject matter and theme at hand, for example, labor history, and then inquire: What were the means of production of the text you are reading right now? How was it written, reviewed, and edited? Were the editors or authors paid? Is it part of a different kind of economic system? How was the text published and distributed so that you are now reading it? Are you reading on a digital reader, in a paper bound copy? What role do you play as reader, consumer, or reviewer of this text? How does history play into the production of this text?

2. Procedural rhetorics (Bogost, 2007) refers to persuasion and argumentation in games constructed through the modeling of systems and procedures. As games are a procedural medium (players follow action paths and procedures through a system of rules), Bogost argues that the manner in which the systems are modeled creates a rhetoric.

REFERENCES

Althusser, L (2006). Ideology and ideological state apparatuses (notes towards an investigation). *The Anthropology of the State: A Reader, 9*(1), 86-98.

Barab, S., & Squire, K. (2004). Introduction: Design-based research: Putting a stake in the ground. *The Journal of the Learning Sciences, 13*(1), 1-14.

Barton, K. & Levstik, L. S. (2012). *Teaching history for the common good* [Kindle Keyboard version]. Retrieved from Amazon.com. (Original work published in 2004)

Block, M. (Producer & Director). (1973). *No lies* [Short film]. United States: Direct Cinema, Ltd.

Bogost, I. (2007). *Persuasive games: The expressive power of videogames.* Cambridge, MA: The MIT Press.

Brathwaite, B. (2009). Train [Board game]. Self-published.

Brathwaite, B., & Sharp, J. (2010). The mechanic is the message: A postmortem in progress. In K. Schrier & D. Gibson (Eds.), *Ethics mid game design: Teaching values through play* (pp. 311-329). Hershey, PA: IGI Global.

Brophy-Warren, J. (2009, June 24). The board game no one wants to play more than once. Retrieved from http://blogs.wsj.com/speakeasy/2009/06/24/can-you-make-a-board-game-about-the-holocaust-meet-train/

ConverJent and Jewish Women's Archive. (2015). *Jewish Time Jump: New York:* Lesson plans about Judaism and labor to accompany the mobile game (Curriculum for *Jewish Time Jump: New York).* Contemporary Labor Issues, Module #4. Retrieved from

http://jwa.org/teach/jewishtimejump

The Design-Based Research Collective. (2003). Design-based research: An emerging paradigm for educational inquiry. *Educational Researcher, 32*(1), 5-8. https://doi.org/10.3102/0013189X032001005

Dunne, D. J. (2014). Brechtian alienation in videogames. *Press Start, 1*(1). 79-99.

Gee, J. P. (2003). *What video games have to leach us about learning and literacy* (1st ed.). New York, NY: Palgrave Macmillan.

Gottlieb, O. (2014). *Jewish Time Jump: New York.* In K. Schrier (Ed.). *Learning, education, & games* (Vol. 1, pp. 210-211). Pittsburgh, PA: ETC Press. Retrieved from http://press.etc.cmu.edu/content/learning-education-and-games-volume-one-curricular-and-design-considerations

Gottlieb, O. (2015). *Mobile, location-based game design for teaching Jewish history: A design-based research study* (Doctoral dissertation). New York University, New York.

Gottlieb, O. (2017). New design principles for mobile games history games. *GLS 12 (Games Learning Society) Proceedings.* Pittsburgh, PA: ETC Press.

Gottlieb, O., & Ash, J. (2013) *Jewish Time Jump: New York*, [Video Game]. New York, NY: ConverJent.

Gottlieb, O., Mathews, J., Schrier, K., & Sly, J. (2014). Mobile history games: Challenges, frameworks, and design principles. *Proceedings GLS 10 Games + Learning + Society Conference.* Madison, WI: ETC

Hoadley, C. (2004). Fostering productive collaboration offline and online: Learning from each other. In M. Linn, E. A. Davis, & P. Bell (Eds.), *Internet environments for science education* (pp. 145-174). Mahwah, NJ: Erlbaum.

Hoadley, C. M. (2004). Methodological alignment in design-based research. *Educational Psychologist, 39,* 203-212. http://doi.org/10.1207/s15326985ep3904_2

Hollerer, T., Feiner, S., & Pavlik, J. (1999). Situated documentaries: Embedding multimedia presentations in the real world. In *The Third International Symposium on Wearable Computers, 1999. Digest of Papers* (pp. 79-86). http://doi.org/10.1109/ISWC.1999.806664

Kirkland, E. (2007). The self-reflexive funhouse of Silent Hill. *Convergence: The International Journal of Research into New Media Technologies, 13*(4). 403-415.

Kirkland, E. (2010). Discursively constructing the art of Silent Hill. *Games and Culture.* Retrieved from http://gac.sagepub.com/content/early/2010/05/11/1555412010364976.abstract

Klopfer, E. & Squire, K. (2004). Getting your socks wet: Augmented reality environmental science. In *Proceedings of the 6th international conference on Learning Sciences* (pp. 614-614). Retrieved from http://dl.acm.org/citation.cfm?id=1149126.1149238

Klopfer, E. & Squire, K. (2008). Environmental detectives—The development of an augmented reality platform for environmental simulations. *Educational Technology Research & Development, 56*(2), 203-228. https://doi.org/10.1007/s11423-007-9037-6

Levstik, L. S. & Barton. K. C. (2010). *Doing history: Investigating with children in elementary and middle schools* (4th ed.) [Kindle Keyboard version]. Retrieved from Amazon.com. (Original work published in 2005)

Mathews, J. M. & Squire, K. D. (2010). "Augmented reality gaming and game design as a new literacy practice." In K. Tyner (Ed.), *Media literacy: New agendas in communication* (pp. 209-232). Austin, TX: University of Texas at Austin.

Polan, D. B. (1974). Brecht and the politics of self-reflexive cinema. *Jump Cut, 1.* Retrieved from http://www.ejumpcut.org/archive/onlinessays/JC17folder/BrechtPolan.html

Reuters. (2012, August 22). Auditors find improved working conditions at an Apple supplier. *The New York Times.* Retrieved from http://www.nytimes.com/

2012/08/23/technology/23iht-apple23.html

Schrier, K. (2005, September). *Revolutionizing history education: Using augmented reality games to teach histories* (Master of Science, Comparative Media Studies). MIT

Schrier, K. (Ed.). (2014). Designing digital games to teach history. In *Learning, education and games* (pp. 73-91). Pittsburgh, PA: ETC Press. Retrieved from http://dl.acm.org/citation.cfm?id=2811147.2811152

Spector, W. & Smith, H. (2000). *Deus Ex* [Video game]. Austin, TX: Eidos Interactive.

Vertov, D. (Director). (2002). *Man with a movie camera* [Documentary Film]. Soviet Union: Image Entertainment. (Original work published in 1929)

Wagler, M., & Mathews, J. (2012). Up river: Place, ethnography, and design in the St. Louis River estuary. In S. Dikkers, J. Martin, & B. Coulter (Eds.), *Mobile media learning: Amazing uses of mobile devices for learning* (pp. 41-62). Lulu.com.

Westheimer, J., & Kahne, J. (2004). What kind of citizen? The politics of educating for democracy. *American Educational Research Journal, 41*(2)*,* 237-269. http://doi.org/10.3102/00028312041002237

Yardley, J. (2013, July 2). After disaster, Bangladesh lags in policing its maze of factories. *The New York Times.* Retrieved from http://www.nytimes.com/20l3/07/03/world/asia/bangladeshi-inspectors-struggle-to-avert-a-new-factory-disaster.html