Designing History: The Path to Participation Nation

Tracy Fullerton* *tfullerton@cinema.usc.edu*
Laird M. Malamed** *lairdo@activision.com*
Nahil Sharkasi* *sharkasi@usc.edu*
Jesse Vigil* *jesse@psychicbunny.com*

*University of Southern California, School of Cinematic Arts, Interactive Media Division
**Activision Blizzard

Abstract

This paper describes the iterative design process of a cross media learning environment for high school students, the heart of which is an online collectible card game centered on U.S. Constitutional issues. The method of design and iterative process undertaken by the several media, industry, technology, curriculum and content partners associated with this project is described in detail by the core game design team from the USC School of Cinematic Arts Game Innovation Lab and Activision Blizzard. The project goals were to design a game that encourages historical thinking and learning through its core mechanics and which aligns with standards for middle and high school history courses. The progress of the design against these goals is described in terms of a detailed iterative process and measured with preliminary evaluation and testing results.

Keywords: Game design, learning and games, game innovation, iterative process, prototyping, playtesting.

1. Introduction: A Call for Proposals

Games as learning environments are currently of strong interest across many important educational domains. The specific area of interest for the educational game project discussed here is the teaching of American history content, historical thinking skills and civic engagement.

These areas were defined as requiring critical attention in a 2005 call for proposals issued by the Corporation for Public Broadcasting (CPB) in which it was stated that "young people's knowledge of even the fundamentals of American history and civics has been on a steady and well-documented decline for a generation or more and, by most standards, has remained at an unacceptable level for some time." [CPB 2005] Cited as examples of this crisis were findings by the American Council of Trustees and Alumni that of students surveyed at the 55 most elite colleges only 60 percent were able to correctly place the Civil War within a fifty year spread; and 63 percent did not know what the Emancipation Proclamation actually granted. Also, according to the most recent National Assessment of Educational Progress—the "nation's report card"—only a quarter of twelfth-graders could name two ways in which the U.S. Constitution limits government power.

The Corporation for Public Broadcasting, in recognition of this crisis, established an American History and Civics Initiative with the intent to award $20 million in grants "to forge unique and sustainable partnerships to create innovative, multi-platform projects that measurably improve learning." The grants would be awarded in several stages, with up to ten prototype awards followed by a smaller number of full production awards. Eligibility for the awards was open to any partnership of public or private, non-profit, educational, or commercial entity with the stipulation that each partnership must incorporate a broadcast via public television, encouraging, though not requiring the use of "new interactive technologies … (the Web, interactive computer programs, video games, cell phones, etc.)."

2. Games and Learning

The Federation of American Scientists has suggested that educational games can provide a fundamental difference from traditional educational instruction. This difference is accentuated by the fact that games are "based on challenge, reward, learning through doing and guided discovery, in contrast to the 'tell and test' methods of traditional instruction." [Federation of American Scientists 2006]

Commercial game designers have known that games are inherently successful learning environments for some time. Even in a non-educational setting, game designers Katie Salen and Eric Zimmerman posit that games employ a model of interactivity that emphasizes several levels of cognitive thinking and interpretive participation. [Salen & Zimmerman 2004] Their model of "meaningful play" suggests that the agency provided by the player's ability to initiate and perform a range of explicit actions can be the basis for a "transformative" experience, and a potentially powerful learning experience.

As a model for educational game designers currently seeking to access this potential for transformative play, game and literacy scholar James Paul Gee presents several key learning principles used for building good computer and videogames. These learning principles can be categorized into three sections—empowering learners, problem solving, and understanding—that are embodied through various functions of games. [Gee 2007] Gee writes: "people learn skills, strategies, and ideas best when they see how they fit into an overall larger system to which they give meaning; any experience is enhanced when we understand how it fits into a larger meaningful whole."

2.1 Answering the Call

In light of the potential for games as a powerful learning environment, a partnership formed to answer the CPB call for

proposals. The companies assembled included Los Angeles public broadcasting station KCET; Activision, a premiere publisher of commercial games; the USC Game Innovation Lab, a research lab focused on developing experimental game play including learning games; noted historians Gary Nash (UCLA) and Linda Symcox (CSULB); The Center for Civics Education; Dominic Kinsley of Young Minds Inspired, creator of teaching programs and curriculum based on popular media, and several other media partners.

The partners all believed the failure of many educational games was twofold. Either they lacked good gameplay or production value, or they lacked solid instructional design. It was hoped a partnership of game design experts from both the commercial industry and curriculum side by side with experienced historians and teachers would surmount those issues and create an instructionally sound game that was also deeply engaging.

3. Methodology: "Playcentric" Design

In addition to the game design expertise provided by the Activision partners, the game team at the USC Game Innovation Lab contributed the "playcentric" design methodology, which is an iterative process of design focused on early paper playtesting to foster development of new mechanics or unique reuses of known mechanics. [Fullerton et al. 2006]

Playcentric design is design and technology at the service of the player experience. This process has been the core methodology taught at USC for a number of years and for further reference is described in detail in *Game Design Workshop: A Playcentric Approach to Creating Innovative Games* by Tracy Fullerton, one of the authors of this paper. [Fullerton 2008]

The process first stresses an understanding of how of the formal aspects of the game system supports and integrates with the dramatic aspects to create an overall aesthetic experience that is the basis of the player experience. In the experimental games created in the Game Innovation Lab, including Cloud, flOw, The Night Journey, etc., the uniqueness of player experience begins with consideration of player actions: objectives, procedures, mechanics, and uses these mechanics to develop the foundation of the emotional or learning experience. The mechanics of the game are considered an important and core function of the "message." In order to design a game, then, about American history, the mechanics of learning and practicing historical thinking would need to be at the heart of the design.

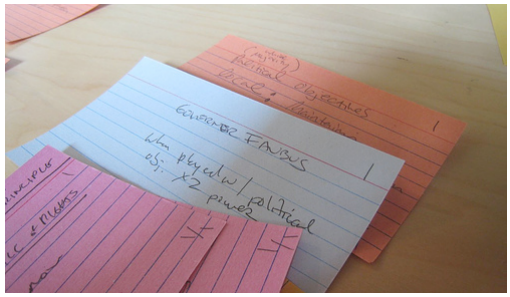

Figure 1: First paper prototype for Participation Nation

In addition, the playcentric process emphasizes repeated prototyping and playtesting of ideas throughout the design process. As part of the playcentric design process, the team typically prototypes original game systems in simple form using paper cards, storyboards, or, later in the process, simple software mock-ups. Playtesting begins the earliest stages of the project and continues throughout the entire production.

3.1 Setting Learning Goals

Another key element of the playcentric process is the idea of designing to meet user experience goals. For this project, the experience goals were deeply related to learning and engagement with historical content coupled with the needs of busy classroom teachers. Early effort, even in the proposal phase, was put into getting input from teachers who might potentially use the project in their curriculum as to exactly on what those goals should focus.

KCET, the managing partner in drafting the overall proposal, did several focus group tests among local high school teachers to pinpoint areas of American history best served by a game for learning. Overwhelmingly, the answer was 11th grade Constitutional history. The complexities of the topic, the wide range of historical moments, opinions, conflicting values and ideals, and subtleties of thought required to understand and analyze Constitutional issues were thought by all the teachers approached to be the most important subject matter we could address. If we could create a game that interested and engaged students with this topic, it would aid an important and difficult task in the school system.

Our content experts, historians Gary Nash and Linda Symcox, had, fortunately, been involved in the creation of the U.S. National Standards for history education, and were able to help us develop a matrix of key historical concepts and events surrounding Constitutional history that could serve as the learning moments for each set of concepts. These included moments ranging from the creation of the Constitution itself to important tests of its powers, such as the Civil War and the Civil Rights movement. Armed with had a general area of focus, we needed an initial game concept that would address this focus and make the best use of the special resources made available by our team, specifically, our relationship with Activision.

4. Early Game Concepts

While Activision delivered dozens of interactive entertainment titles yearly, none of its titles focused on education. However, several individuals at the company, notably VP of Communications Maryanne Lataif and VP Studios Laird Malamed, recognized the mission as outlined by CPB in the call for proposals as an important objective to support, both for Activision as a company and for the commercial game industry as a whole. The idea that new media in general, and specifically games, might serve as a key differentiator from past efforts to engage students with history and civics was important enough from a cultural point of view to justify the participation of Activision in the project even though the overall goals for the project were not specifically commercial. As a partner, Activision offered to provide game design expertise, user experience

personnel, supplementary funding, and a game engine from one of their existing products.

4.1 The Call of Duty Game Engine

An early review of Activision's titles revealed that the only games in their portfolio to have strong embedded historical content were enthusiast strategy simulations (Call to Power 1 and 2 and the Total War series). Both product lines focused on macroeconomic, nation-state resource management and continent-level conflict over hundreds of years. Given the goal of bringing civics to life in a personal manner for students, these game engines were immediately rejected.

Thinking the chances of immersion were greater with firsthand experience, a First Person engine – specifically the Call of Duty PC game engine – was selected as the platform. Past Call of Duty games place players in the middle of the some of the greatest battles in World War II. In fact, focus group participants have identified Call of Duty as being a catalyst for interest and learning about World War II. While very few of the historical events identified in the content matrix by Nash and Symcox involved battles, we believed the engine would be ideal for bringing historical moments directly to life in front of students' eyes.

Because a fundamental aspect of the partnership included the idea of Activision donating the use of one of its game engines, the concept team spent quite a bit of time trying to make this work creatively. Various realities intervened to alter this decision, including the availability of gaming hardware in schools and the suitability of first person mechanics for achieving the learning goals. Walking through our process of determining the best technology and game mechanics for the project is instructional, however, and many elements of the early designs did survive in the final prototype, so we will survey these concepts and the factors that lead us to abandon them in favor of the final mechanic and platform.

4.2 Future Imperfect

Our initial design inspiration drew upon the 1985 Infocom interactive fiction game, A Mind Forever Voyaging (AMFV) written by Steve Meretzky. In AMFV the government has decided to implement wide social and economic policies, and the player is sent into calculated "futures" to determine the impact of the proposed legislation by living within the simulated changed world. Wikipedia contains a summary of the game's content. [Wikipedia 2009]

Taking a cue from watching the impact of changes on future society, our game design envisioned a fictional town. Players play "themselves" (since the game is first person). They have to go to school, do errands, go shopping and socialize. Players have the ability to turn on and off various elements of the Constitution and its Amendments, and thus could live within a simulated world without its protections. Turning off the right to free assembly could then result in arrest if the player attends a rally or gathering. If search and seizure is eliminated, players can be harassed by police officers for no reason. The hope was that by allowing students to experience a virtual world without the protections we rely upon, they would better appreciate and understand their own rights.

Ultimately, this game mechanic was viewed as too esoteric and too removed from real "history" to meet the project's overall goals of aligning with high school curriculum. This is a very difficult issue, which continued to come up during the design process: In a game about history, how much "play" can we allow between actual events and the possibilities of the game space? Obviously, the player must be able to have some influence on the outcome of a scenario, but it was critical to our learning goals that they learn and understand where those differences occurred. Engaging this issue facilitated a shift from open-ended simulation to reproducing the historical turning points identified by our partners.

4.3 Past Imperfect

One early decision that helped focus our efforts was to use the integration of Central High School as subject matter for the playable prototype. Given the contemporary media coverage, large number of first hand photographs and voice recordings, we felt we could adequately reproduce the fateful days in of school integration in September 1957 using a first person engine In effect, we would script history using a virtual world with virtual characters. The world would still look like a game (polygonal and simplified where necessary), but recognizable as Little Rock AR. Players would be free roaming individuals within the drama and would not be able to impact the events.

At this stage, however, there was no game idea, only a history simulation – a 3D playback of what actually happened (or our interpretation and reduction of those events). To become a game concept, we developed the notion of history being lost – historical records, artifacts and knowledge of the past were simply vanishing. By turning the loss of history into a dramatic device, we sought to create an objective within the recreated simulation and instill student/players with a connection to the events.

The game scenario would report the disappearance of history and challenge the player to travel back in time to document and save history using a special time camera that could record video, audio and images. If players missed part of the event during their travels, they could return and capture the missing elements. In fact, some scenarios would require the player to travel back multiple times because various events would be happening simultaneously or in different locations.

Once the player retrieved the historical documents with their time camera, the game system would link those digital images to actual source materials. For example, if the player photographed Elizabeth Eckford being harassed by another student, the actual primary source of that event would be unlocked for the player. Players would then write historical essays/blogs combining text and media assets to demonstrate their understanding and knowledge of the events they "witnessed."

A particular goal of this version of the game concept was to create in students an understanding of primary sources as records of history. This goal strongly resonated with the team and the learning experts, and has survived into the final version of the game to become a key component of the play mechanic, even though most of the other aspects of the design have evolved and changed. This version of the game concept was detailed in a design summary document, and storyboards were commissioned to illustrate the play mechanics. It was this concept that was included in the first, written proposal to CPB in late 2005.

Figure 2: Storyboard for first person, 3D game concept

This first person 3D version of the game concept idea was re-evaluated after the initial proposal was submitted. Primary was a concern about the use of the Call of Duty game engine. In continuing to gather data, KCET found the average school in the low-income school districts we wanted to reach typically had one or two low-end computer systems available per class. The PC requirements to run the Call of Duty engine would likely be too high for the majority of these schools and exclude many of the students we were trying to reach.

The first person mechanic had several associated issues. The genre mostly appeals to experienced gamers, typically males, and for the inexperienced can be potentially disorientating. Attempting to attract non-game players (male or female), this could be a barrier to engagement. Finally, the game engine would be difficult for the envisioned student team at USC to learn and program to its fullest. To effectively use the engine, the original development team would be needed to support the effort. This was unrealistic given that team's focus on other titles.

4.4 Calling all browsers

During 2006, the CPB initiative was in a state of hiatus due to personnel changes at a decision-making level. During this time, the KCET, USC and Activision team members continued talking casually about other possible approaches to the idea, but did no detailed design work. When the CPB initiative was re-launched in January of 2007, however, we were asked to re-visit our proposed ideas and come in for a pitch meeting with revised and/or expanded concepts.

By this time, our focus had turned to developing a web-based game. Utilizing a web browser (another decision that ultimately carried through to the final design) would address our concerns about computing horsepower in the classrooms. This decision also would allow easily for a variety of platforms (PC, Mac, Linux) to be supported. And, an online product could support a new concept that became more and more important to the proposed learning environment: a social network in which students and teachers could communicate, compete, cooperate and creatively interact with the game content.

In this preliminary pitch, we envisioned a web version of the treasure hunt mechanic described above, utilizing the mission structure retained from the previous concept. Although we knew we could find a more elegant solution if we were to be funded for a full design phase, this version of the game design was presented to CPB in February 2007, as part of a full learning environment that included an online community, a graphic novel, a series of short video "webisodes" and a suite of online teacher's tools and curriculum organized and aligned with California 11th grade history standards. This presentation was well received by the rest of the partners on the project and ultimately by CPB as a research and prototyping grant was awarded in mid-2007.

5. Final Design Direction

After approval by CPB to move forward with the research and prototyping phase, all aspects of the project were opened for re-evaluation and a full team of media consultants, curriculum planners and game designers (graduate students) were brought on board to flesh out the preliminary goals. At this stage, we had the time and resources to truly address the design challenge that we had set from the standpoint of our core learning goals.

We knew we wanted students to interact with history in tangible ways, and we knew to be successful, the project would have to surpass the high educational requirements. Our evaluation consultant Richard Wainess pointed out that creative and critical thinking were key outcomes that we needed to plan for in our player experience. Otherwise, the game would not be adopted by school districts (let alone receive approval to continue from CPB). We needed to find or create a mechanic that would support not only the learning of standard facts about history, but also the ability for students to "play" with that history and form their own ideas and conclusions.

One of our team historians, Linda Symcox, had written an article about teaching the process of "thinking historically." In it, she quotes historian Tom Holt, who makes a case for the use of primary sources in K-12 classrooms. She says, "He refuses to approach history as the 'memorization of someone else's facts.' Rather, he argues that the study of history must be an experience in authentic problem solving. This can only be achieved by poring over primary sources. Holt concludes that, 'rather than teaching [students] to be consumers of stories, someone else's facts, we might better develop their critical faculties, letting them create stories of their own.'" [Symcox 2004]

The team examined a range of potential game mechanics that might support just this type of play behavior. One concept that generated traction in our discussions was that of a collectable card

game. Our own experiences with such games evoked Holt's description of students "pouring over" primary resources. Collecting, organizing and interpreting the power of cards as part of the meta experience of such game systems seemed a perfect model for students to learn about historical figures, events and laws. We envisioned an environment where students could battle each other with ideas, learning and understanding facts, applying them in game, analyzing and evaluating possible strategies as they related to history, and creating their own particular strategies. These activities also followed Bloom's Taxonomy of cognitive learning skills, which encourages a rising expectation of learning outcomes, from factual knowledge, comprehension, application, analysis, and synthesis to evaluation. [Cruz, 2009]

5.1 Choosing CCGs

In addition to the considerations mentioned above, Collectible Card Games (CCGs) seemed a better choice than virtual worlds, or role playing games because of their established popularity among our target age group (middle to high school students), the archetypal representation of characters and their attributes, and the seemingly effortless way which players absorb and memorize the game's content, characters, and rules as an effect of repeated play.

5.1.1 Prior Art

Collectible Card Games examined as prior art included *MAGIC: The Gathering, Pokemon, Harry Potter*, and *Star Trek*. *Harry Potter* and *Star Trek* were good reference examples of new content being applied to an existing mechanic, and *Star Trek*'s "timeline" mechanic held serious potential for us to adapt.

5.1.2 Advantages of CCGs

Players of CCGs have incredible knowledge of the characters, attributes, and values on each card. Like baseball fans memorizing statistics on baseball cards, CCGs players often memorize content of the cards, both general and specific, in order to formulate their strategy and defeat opponents in battle. We set out to turn these aspects of CCGs to the advantage of learning history. Our hope was apply historical content to this tiered information structure, so that a student need not know all the specific historical facts about a figure in order to know that figure's place in the system.

5.2 A Casual Mechanic with Deep Gameplay

Realizing the applicability of an online card game to our goals, work began on a simple to learn yet hard to master card game mechanic that could support many different moments in Constitutional history. It needed to be flexible to encompass more than 200 years of history, specific enough to give students a deep experience of the material, and accessible enough for inexperienced players and teachers to quickly adopt.

An iterative process beginning with index cards to internally test basic mechanics evolved into full paper prototypes and finally basic digital prototypes. These were not only tested by the team, but with groups of teachers and students. (See section 8 on Evaluation.) With each iteration, we found more specific ways to align the play experience with the learning goals.

The first challenge we addressed in early iterations was how to allow students to experience history in a non-linear, non-deterministic way. By strictly adhering to the narrative of history we risked creating a static experience, and by allowing too much freedom in the system we risked teaching false history. Applying a level of abstraction, and taking a historiographical approach to the content gave us to better way engage with primary source documents and meet the learning goals of teaching analytical and research skills. We began by seeking out reoccurring archetypal roles that could be applied to any moment in Constitutional history. This led us to see the historic content more as grouped elements with specific attributes, and less as a linear narrative. This interpretation of history was very similar to the basic character systems found in collectible card games, so we used a variation of these models to begin prototyping.

5.3 Concept driven prototypes

In the course of developing Participation Nation, we created more than a dozen paper prototypes, iterating on the basic concept of collectible card games, heavily emulating their structure. Our cast of historical figures from the civil rights movement and the 1957 school integration in Little Rock, Arkansas were given a 'Class' (Leader, Lawmaker, Citizen, etc…), numerical values for 'Strengths' (Power, Agency, and Resources), and assigned to a team (Forces of Change or Status Quo).

Historical figures (or Actors, as we named them) from opposing sides would battle over Issues, comparing their Class, Power, Agency, and Resource values based on the criteria of the issue in question. In addition to the Actors, we also included Support Cards that represented other historical events and concepts that were key to teaching this Constitutional crisis, which also added numerical values to cards in the battle.

5.3.1 Response to Early Prototypes (Problems)

The response to this prototype at the December 2007 full team meeting, including all of our content and curriculum partners, was that the mathematical system driving the game was too transparent, and a student could simply play the numbers and win the game without engaging in the historical content at all. This is indeed the shortcoming of many educational games that teach you how to play the game, rather teach you the intended subject matter.

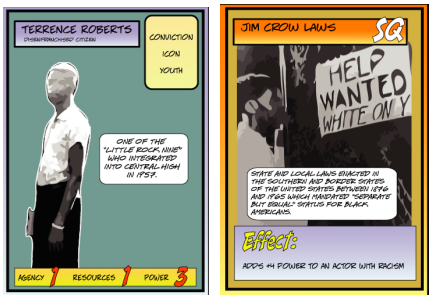

Figure 3: Cards from an early prototype; note numeric battle system on Terrence Robert's card at bottom left.

Another critique of our early prototypes involved replayability. We still struggled with the challenge of making the game system

flexible while not betraying historical facts. A major factor in this challenge was incorporating the element of time and tying figures and gameplay to a liner timeline. Our desire was to portray the idea of continually drawing on the wisdom and power of the past as we write and interpret history. We wanted some freedom in the system to 1) interpret historical events and 2) to use historical figures as archetypes anachronistically. However, our CCG-style battles had players changing history by recreating confrontations that never happened. For example, The Arkansas National Guard could defeat the NAACP in battle and render them powerless for the remainder of the game. This loose interpretation of historic events was clearly at odds with our learning goals.

5.3.2 Revisions – Hiding the Numbers

Addressing the concern that we had created a math game, rather than a history game, we decided to replace the numerical values for Power, Agency, and Resources with history keywords (later named Civic Principles). When the player sent his or her cards to battle he or she would be associating these terms with the issue (or question) at the center of the battle. The cards were still weighted according to Class, but the numeric values were completely removed from the interface. This allowed us to turn the problem of "gaming the system" to our advantage. Even if students play Participation Nation as a simple word matching game, they would still be memorizing keywords and associating them with historic figures, ultimately an activity we want to promote.

5.3.3 Revisions – Replayability

In addressing replayability, i.e. how to make a historic moment replayable without teaching false history, we relied again on abstraction. We removed any attachment to a timeline, and re-framed the issues at the center of the battle, so that the player and the opponent were both playing to the question, rather than directly against each other. The paper prototype process facilitated rapid revisions and testing of each new mechanic.

5.4 Final Revisions

In the final Participation Nation prototype, the player assumes the role of either the Forces of Change or the Status Quo in a debate over three points of argument concerning the overall constitutional issue of school integration. The player uses his or her deck of historical figures, laws and values to make a stronger, more relevant argument than his or her opponent. Each card has an inherent strength (Class) and relevancy. Matching a historical figure to its relevant point of argument generates a stronger argument in the debate. Primary sources add strength to an argument, teaching not only the importance of using facts to support an argument, but also the process of analyzing and evaluating primary sources (more information below).

5.4.1 "Battle" becomes "debate"

Debate is a time-tested classroom activity that engages students in critical thinking on history. Participation Nation, evolves this academic exercise into an innovative and challenging game mechanic. Through play, students not only to increase their knowledge of facts of history, but also to employ this knowledge in the construction of complex arguments surrounding the essential questions of constitutional crisis. The game mechanic asks students not only to recall the figures, terms and concepts of a particular point in history, but also to organize these elements, and draw connections between them, facilitating a broader understanding across different periods in history.

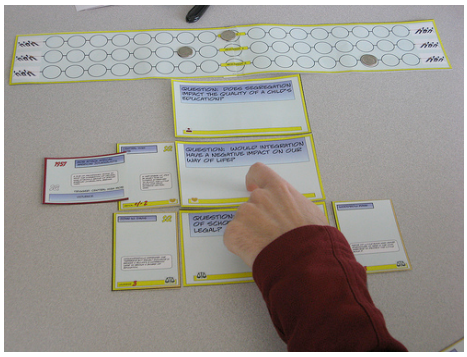

Figure 4: Debate prototype for Participation Nation

By framing a traditional collectible card game battle as a debate, the players use their deck to address a question rather than battling the opponent's deck. This helps avoid the "false history" problem The game is then not about the Arkansas National Guard directly confronting the NAACP (which may never have happened), but rather about evaluating each historical figure's influence on the Constitutional validity of school integration. Winning the game is not simply about memorizing the facts of history, but using those facts to formulate a powerful argument.

5.4.2 Mechanic of Primary Sources

In the project learning goals, there was an emphasis on historiography, critical analysis of primary sources, and research and writing skills. We introduced primary source documents (photographs, video, audio, documents, etc.) into the system as supports that would strengthen the player's argument and add more strategic game play. Primary Sources, tightly associated with key figures, laws, or values, became special wild cards that would block, unblock, add power, replace or call up the cards in play and in the decks. Primary Sources are heavily weighted in the game, and can easily change the course of the debate prompting players to learn how to access and use them to win the game. This mechanic motivates research and critical analysis, and emphasizes the importance of using appropriate support, documents, and facts in an argument.

5.4.3 Bonuses for understanding history, replicating it

The game needed to motivate interest in history without requiring prior expertise. In the game, players are not penalized for making weak arguments, but are substantially rewarded for the strength and relevancy of their argument. It rewards players for accuracy and strategy in their interpretation of history, and also gives special awards for recreating historical moments through game play.

6. Description of the Final Prototype

Participation Nation is an online-enabled, 2D digital implementation of a customizable card game. Like other games

in its genre, it focuses on testing the collection and organization of the player's cards against those of an opponent.

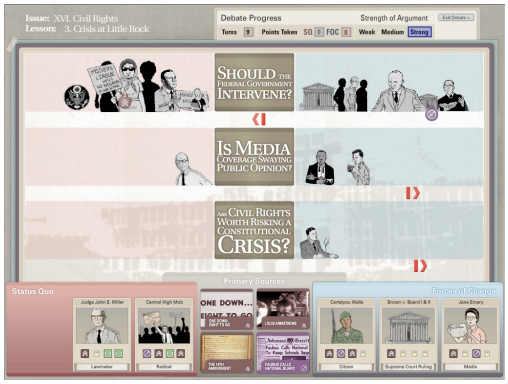

Figure 5: Final digital prototype for Participation Nation

Game "levels" focus on a central debate between the Forces of Change and the Status Quo. Each debate is comprised of three key questions central to the debate topic at hand. Those questions are each represented by a play "line," a piece of game geography that can be secured by the strategic placement of cards from the player's deck. In the metaphor of the debate, securing a line counts as being conceded a point in the debate.

Winning the game requires being awarded two of the three possible "points" in the debate, accomplished when players present evidence supporting their historical point of view from the cards in their hand. Cards are evaluated based on their relevancy to the topic at hand and the strength of the argument they make, similar to imagining a tug-of-war. The more relevant evidence introduced on one side of the debate, the closer that side gets to being awarded the point. Momentum can be reversed and ground can be recovered if the opposition renders some aspect of the argument invalid or strengthens its own argument.

Adding an additional layer of complexity, wins and losses are graded by the system based on strength of overall argument during play and the efficiency and effectiveness of the debate. This is intended to further incentivize replayability and improved performance, since a higher score and best ending await only the players with mastery of both the history and key debate skills.

6.1 History as Strategy

Primary sources are unlocked when historical concepts those sources are associated with get introduced into play. Many can block the effect of an opponent's card, refuting the argument in the metaphor of the debate. Likewise, some strengthen an argument already in play by adding additional evidence. Certain cards have even more unique abilities.

For example, Little Rock Mayor Woodrow Mann's telegram to President Eisenhower is a primary source card that brings the very powerful Eisenhower card from anywhere in the deck to the player's hand. That primary source is only unlocked when Mann's card is introduced into the debate. This sequence is furthermore part of a hidden "combo" that rewards the player for demonstrating an understanding of history by putting certain cards into play in a historically accurate sequence.

7. Integration with the Larger Project

The debate game functions as a central component of the online destination for Participation Nation. The entire initiative comprises a web portal and social networking site with content surrounding eighteen chapters of Constitutional history, each with a supporting comic book chapter, video "webisodes," an interactive database of primary source material, and three levels of the debate game for each historical chapter. Users create unique profiles that track scores in the game, progress through curriculum, rankings within a class, school, or community, and special badges earned for exemplary performance.

The various project sections reinforce and support each other. For example, the graphic novel and game share art assets and an overall artistic aesthetic. Though not implemented in the prototype, the game has been designed to award special badges and higher scores to players replicating the historical events presented in the graphic novel.

Additionally, to encourage players to explore the history behind the game and engage the material on a critical level, every card in the debate game can be improved through scholarly activity in a section of the site called "Learn and Connect, " a graphical searchable database of primary sources relating to the historical figures and values in the game debates.

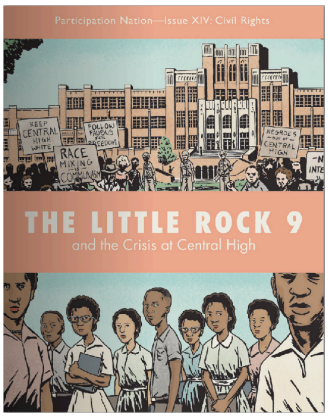

Figure 6: Graphic Novel

8. Preliminary Evaluation

The final Participation Nation prototype was piloted in several classrooms to good response. This prototype included a playable version of the debate game with content for the Little Rock level, a single chapter of the graphic novel, with aligned content from Little Rock, a working version of Learn and Connect with primary sources for the Little Rock content, webisodes and clickable mock-ups of other pages in the Little Rock chapter. The classrooms included two in Long Beach Unified School District

with 24 and 35 students respectively. Another classroom in Lake Havasu Arizona with 25 students was also a pilot site. These larger group sites were in addition to a number of individual playtests conducted at the USC Game Innovation lab as part of the ongoing development effort.

Much of the data collected from these tests is currently not publishable under confidentiality agreements; however, in general, the responses of both teachers and students to the prototype were extremely encouraging. Teachers expressed enthusiastic attitudes toward probable adoption; and felt that the content of the program was excellently aligned with their district and state curriculum standards.

Figure 7: Students playing prototype

Students also expressed enthusiasm toward adoption, but more importantly, displayed behaviors that were perfectly aligned with the learning goals for the game mechanics. For example, students read the debate cards carefully, using the knowledge they found there to consider their game strategies. One student was overheard asking his classmate, "Was Eisenhower for or against integration?" As was pointed about by the evaluator, this is an excellent question to glean from playing the debate game and reading the primary sources. In a test at the Game Innovation Lab, where the design team asked participants to "think aloud" about the choices that they were making, one player made a good move using the card "Federalism" in the debate. When asked why he had played Federalism to the question "Should the Federal government intervene in the crisis at Little Rock?" he replied that he had not know the term before playing the game, but had come to understand the idea by reading the debate cards.

Overall, both teachers and students reacted positively to the game and its learning potential. One teacher commented, "The students were thoroughly engaged and were anxious to discuss historical topics and issues. My students who normally are not very enthusiastic were sucked in to the game/debate and graphic novel." This is, of course, exactly the outcome we had hoped for with the design of the game mechanics.

9. Conclusion

The prototype of Participation Nation was delivered to CPB in November of 2008 and is awaiting a decision as to further funding for the production of the full eighteen chapters of historical content. It is the feeling of the team that preliminary evaluation upholds our design decisions and points to a positive learning effect from the use of the game within a standard history curriculum.

Watching the pilot tests and playtests has reinforced our sense that this core game mechanic, chosen after the evaluation of so many other possibilities, creates precisely the cognitive process required to engage students in the historical thinking process through gameplay. By strategizing and playing well, they in fact practice the very skills needed to learn, understand, apply, analyze and evaluate historical knowledge. Within the social network of the game and learning platform, they practice these skills on their own and with their peers, proving true a comment by Henry Jenkins and Kurt Squire that "Ultimately, educational game design is not just about creating rules or writing computer codes; it is a form of social engineering, as one tries to map out situations that will encourage learners to collaborate to solve compelling problems." [Squire and Jenkins 2003]

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