Using Digital Simulations for Teaching the Constitutional Convention in Undergraduate History

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College instructors are entering a new frontier of teaching in the 21st century. Millennial students are bringing to university classrooms different experiences regarding the ways they learn and engage in critical thinking. As online universities gain more popularity across the country, higher education institutions are offering more hybrid and distance-learning courses on the Internet to match the demand for using technology for teaching and learning. This action research study evaluates how the Annenberg Media digital simulation The Constitutional Convention of 1787 effected student engagement in an undergraduate history course at a community college in a metropolitan region of the Southeast. Practical suggestions are provided for college level history instructors to adapt digital simulations for teaching curricular and content skills that foster critical thinking, digital literacy, and engaged learning.

Keywords: student engagement, active learning, digital simulations, historical thinking, technology, undergraduate history

Introduction

College instructors are entering a new frontier of teaching in the 21st century. Millennial students are bringing to university classrooms different experiences with way they learn and engage in critical thinking. The Millennial Generation is constituted of students born between 1982 and 2002 that grew up exposed to real time media coverage of the news and entertainment mainly due to the rise of computer and Internet technologies during the late 20th century (Howe & Strauss, 2000; Elam, Stratton, & Gibson, 2007). In contrast to those of the Baby Boomer Generation and Generation X who “pioneered the high tech frontier,” Millennial students grew up in a settled frontier and adapt to the new technologies (Howe & Strauss, 2000, p. 297). From television to personal computers (PCs), Smartphones, and video games, Millennial college students are digitally interacting with peers, professors, and content material as opposed to the pen and paper mediums of previous generations. As virtual Kindergarten-12 schools such as the Connections Academy (Ash, 2013) and online universities gain more popularity across the country, higher education institutions are offering more hybrid and distance-learning courses on the Internet to keep up with the demand for using technology for teaching and learning.

The familiarity Millennial students have with using technology has created new opportunities to use digital media to improve student engagement at many colleges and universities. Daily video game usage for children aged 8-18 has dramatically increased from 38% in 1999 to 60% by 2009 (Young, et al., 2012). As a result, educators are examining ways to use games to teach more effectively all levels of students and content (Tobias & Fletcher, 2011).
In social studies education, Cheryl Bolick, Michael Berson, Adam Friedman, and Erik Porfeli (2007) found a decrease in institutional barriers to the incorporation of technology by social studies teachers. Similarly, Joseph Feinberg, Audrey Schewe, Christopher Moore, and Kevin Wood (2012) argue the increased infusion of technology in education naturally allows greater access to simulation games. The focus on traditional learning products, such as standardized assessments, however prohibits a greater focus on simulation games that promote higher levels of thinking (Feinberg et al., 2012).

The goal of this study is to analyze how the usage of the digital simulation The Constitutional Convention of 1787 from the Annenberg Classroom (see Web-based references for the URL) impacted student learning and engagement in one undergraduate United States History course. The research questions framing this study were:

- How does the use of the digital simulation The Constitutional Convention of 1787 aid in fostering student learning about the drafting of the Constitution as outlined by University core curriculum guidelines in an undergraduate United States History course?
- How does the implementation of the digital simulation The Constitutional Convention of 1787 impact student engagement in an undergraduate United States History course?

Some technical issues impacted the implementation of the simulation. Therefore, this study provides instructors with practical suggestions as to how to adapt digital simulations to promote engaged learning, critical thinking, and technological literacy in undergraduate history courses.

Millennial Students and Digital Simulations

Millennial students, most of whom were “born on or after 1982” (Howe & Strauss, 2000, p. 4), have been exposed to using digital simulation for entertainment and education since childhood. As a result, the researchers concluded that the majority of students who participated in this study were digital natives. A digital native is someone who is “fluent in the digital language of computers, video games, and the Internet” (Prensky, 2005, p. 2). It is further emphasized that a digital native is usually under 30 years old and uses technology to quickly receive information (Brooks-Young, 2006).

We hypothesized that using the Annenberg Classroom’s Constitutional Convention digital simulation may benefit digital native students for several reasons. First, students may demonstrate high levels of engagement and content learning from using the simulation due to their familiarity with computer and Internet technologies. This particular simulation, moreover, has interactive features with graphics, video interludes, and voting sessions that provide students with instant feedback on their progress. These factors make social studies classrooms a natural home for simulation games and role-play activities to engage more students, especially those less involved in their learning (Devlin-Scherer & Sardone, 2010).

Second, the use of the digital simulation The Constitutional Convention of 1787 may help digital immigrant students who are not as comfortable with digital technology as are digital natives. Since digital immigrants were not born in the digital world, they tend to favor reading printed materials over information found on the Internet (Brooks-Young, 2006; Prensky, 2005). Some college students may have trepidations about using digital simulations in the classroom due to lack of familiarity with computers and Internet technology for educational purposes. While acknowledging the apprehensions some students may have towards using technology in the classroom, we theorized that the use of the this simulation about the Constitutional Convention may improve students’ technological literacy and critical thinking skills, as well as their confidence using technology in school.
Literature Review

Play, Games, and Simulations

In order for college instructors to use digital simulations to promote engaged learning, one must understand what play means, as well as the difference between games and simulations. 

Play refers to something one does for pleasure through social interaction that promotes socialization and learning (Prensky, 2001). A game is a form of organized play with rules where the player must overcome a challenge (Mitchell & Savill-Smith, 2000). A simulation models a physical or social system that does not have concrete rules or levels of achievement based on overcoming challenges. Learning through game play are central themes in the pedagogical theories of Piaget, Dewey, and Vygotsky (Games & Squire, 2011). Game play has changed drastically since the early to mid-20th century. The use of digital simulations in undergraduate history courses, however, may foster student engagement with interactive features that encourage inquiry, problem solving, and critical thinking (Kirkley, Duffy, Kirkley, & Kremer, 2011).

There are two types of simulations based on fidelity. A high-fidelity simulation, such as those used by airlines and the military, is used to demonstrate adaptations to a situation that is too costly or dangerous to recreate for training purposes (Squire, 2003). A low-fidelity game, such as a board game or online simulation, is used to simplify a situation for students where the emphasis is on understanding complex systems (Squire, 2003). The Constitutional Convention of 1787 is an example of a low-fidelity digital simulation because it models the interactions of the delegates at the Constitutional Convention through engaged deliberation and in voting sessions geared towards creating the United States Constitution.

Criteria of Effective Simulations for Instruction

Not all digital simulations are appropriate for educational purposes. A digital simulation that is best suited for academic instruction is one with clear goals, feedback mechanisms, leveled difficulties, and surprise elements that appeal to students’ skills and interests (Squire, 2003). Effective digital simulations provide students with opportunities to engage in problem solving, technological literacy, and critical thinking skills (Devlin-Scherer & Sardone, 2010; Gee & Levine, 2009). As a result, digital simulations meeting the above criteria have the potential to improve student engagement and motivate students to learn (Kincheleoe, 2001).

Digital simulations can be excellent tools for promoting learning in undergraduate history courses. According to Jeremiah McCall (2011), ideal digital simulations for history instruction are those that include historical questions that develop students’ comprehension of historical and real-world contexts. Digital simulations may strengthen historical thinking by engaging students in the historical method of identifying a source, attributing a source author’s purpose and historical context, assessing the source’s author’s socio-cultural-political positions, and judging the reliability and validity of a source (VanSledright, 2004). The Constitutional Convention of 1787 digital simulation presents historical context, questions, multiple sources, and different perspectives that engage students in the process in which the Constitution was drafted. Hence, the use of digital simulations in undergraduate history courses may enhance students’ interest, critical thinking, and acquisition of historical knowledge.

Student Engagement

Digital simulations meeting the appropriate criteria as an educational tool can foster engagement and achievement in undergraduate history courses. Some educators and researchers, however, express concerns that the use of technology has negatively affected Millennial students’ attention (Elam, Stratton, & Gibson, 2007). Teachers, similarly, express concerns that
the proliferation of digital technologies in the classroom because they may diminish students’ stamina to focus (Ritchel, 2010). It is argued that American schools are facing a student engagement crisis because teachers are not using digital media as vital resources for teaching and learning (Gee & Levine, 2009). College instructors, therefore, must understand the criteria for an effective simulation, as well as what engagement is, in order to successfully implement a digital simulation to promote engaged learning.

Engagement is a key component for learning. According to David Goslin (2003), student engagement involves attentively listening and thinking, mentally rehearsing, and practicing. Student actions, such as asking questions and discussing content material, play a significant role in determining to what extent students are engaged in learning (Doolittle & Hicks, 2003; Guthrie & Anderson, 1999; Skinner, Wellborn, & Connell, 1990). In contrast to teaching history through teacher-centered lectures that often lead to “rote memorization of information without critical analysis about why historical information is important” (Perrotta & Bohan, 2013, p. 51), the use of digital simulations can improve engagement with constructivist pedagogies and active learning strategies.

Constructivist pedagogies are rooted in the theory that students learn through a combination of connecting new experiences to prior knowledge (Ray, Faure, & Kelle, 2013). History instructors using constructivist instructional techniques, such as digital simulations, promote engagement through the implementation of active learning strategies. According to Jennifer Faust and Donald Paulson (1998), active learning strategies are those in which students apply course material to real life situations and problems. Historical role-playing and simulations “represent the ultimate in active learning techniques” because these strategies afford students an opportunity “to get into the shoes of historical people and move around in them” (Monahan, 2002, p. 74). The use of constructivist and active learning strategies with digital simulations in undergraduate history courses may create a novel instructional paradigm (Dede, 1992). Students who may not benefit from traditional college lectures, moreover, become active participants in the learning process (Tai, 2004).

**Digital Simulations and Community College Undergraduate Students**

The use of digital simulations to facilitate active and engaged learning can be particularly effective at the community college level. Community colleges tend to enroll a diverse spectrum of traditional and non-traditional students who are either digital natives or digital immigrants (Prensky, 2005). Traditional students, many of whom are digital natives, are those who enter college directly after high school graduation around the age of 18 (Munro, 2011). Non-traditional students who may be digital immigrants are typically older adults who may be just starting as a war veteran, returning to college after taking a break, and/or attending on a part-time basis, and balancing a full-time job and family obligations (Munro, 2011).

With diverse student bodies and market driven expectations for technological proficiency (Dede, 1992), community colleges have lead in “several pedagogical initiatives” (Tai, 2004, p. 32). Digital technologies have the potential for teaching students the technological, problem solving, and critical thinking skills that are in high demand in the 21st century (Aguilera & Mendiz, 2003; Dondlinger, 2007). The implementation of digital simulations in undergraduate history courses, therefore, can promote engaged learning and technological literacy that are considered essential requirements among traditional and non-traditional students for academic and professional success.

**Description of The Constitutional Convention of 1787 Simulation**
The Annenberg Classroom’s *The Constitutional Convention of 1787* simulation models the process in which delegates from the original 13 states met in Philadelphia to frame and ratify the United States Constitution. The *Constitutional Convention of 1787* simulation is an interactive experience in which students are taken through the various deliberative and voting processes that occurred at the actual convention. Teachers can enroll a class in the simulation or opt not to register the class. If the teacher decides not to enroll a class, students’ progress in the simulation is not saved. Students would have to start the simulation from the beginning if they logged out before finishing.

There are several steps students must complete in order to finish the simulation. First, students are required to choose one of the original 13 states to represent at the Constitutional Convention. After choosing their state, students are directed to video interludes that orient them to what life was like in the United States in 1787. One of the video interludes, for example, explains what the weather conditions in Philadelphia were when the Convention convened and the conflicts the states’ delegates faced when meeting at the Convention. Among the conflicts the delegates address, include compromising different states’ interests and the eclectic personalities of some of the delegates, such as the sword-wielding representatives from New York and the inebriated Luther Martin from Maryland.

Second, students must vote for three provisions to begin proceedings of the Convention. Students vote on: a) who should be elected the President of the Convention; b) whether the Convention should be held in secret; and c) if the new government should have three branches of government. Students are given the option to support, oppose, or abstain from a vote. Once a student votes on behalf of his or her state, the votes for the remaining 12 states at the actual Convention of 1787 are revealed. This voting session is followed by more video interludes featuring historians, animations, and re-enactments providing students with explanations about how and why the delegates reached their decisions at the actual Convention in 1787.

Third, students are prompted to engage in four more voting sessions to decide on constitutional resolutions at the Convention. These resolutions include the structure of the bicameral legislature, the electoral college, choosing the number of executives, electing the legislature, deciding executive veto power, determining judiciary power, and consideration of a Bill of Rights. Students are able to choose up to five issues on which to vote in each session. An interactive map is provided to help students gauge the strength of the support or opposition of other state delegates on the issues in each of the voting sessions.

At the conclusion of the simulation, students vote for or against the ratification of either the constitution they created based upon the provisions they voted or for the actual United States Constitution. Students can print a copy of the constitution they created to compare and contrast to the actual United States Constitution. The simulation concludes with a five question multiple-choice quiz assessing student knowledge and understanding of the causes and effects of the Constitutional Convention.

**Study Participants**

Our study examined the impact of the digital simulation *The Constitutional Convention of 1787* on student engagement and learning. It was conducted at a community college located in a metropolitan region of the Southeast. The students who participated in this study were enrolled in a *Survey of United States History from pre-1492 to 1865* course. The simulation aligns with the University’s core curriculum standards with relation to studies of the American Revolution,
the Articles of Confederation, and the drafting of the Constitution. There were 35 students enrolled in this course with 29 students participating in this study. The students in the class represented a sample of the demographics of the student body at the particular campus where this survey took place and the other campuses of this community college as seen in Tables 1 and Table 2:

Table 1

**Average Student Ages (Based on 2010 and 2011 data)**

<table>
<thead>
<tr>
<th>Institution</th>
<th>Average Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire College</td>
<td>24.8</td>
</tr>
<tr>
<td>Researcher’s Campus</td>
<td>23.6</td>
</tr>
<tr>
<td>Surveyed Class</td>
<td>20.4</td>
</tr>
</tbody>
</table>

*Age identification of students the surveyed class was based on total number of participants who volunteered demographic information, not the total enrolled number of students in the class.

Table 2

**Demographics (Based on 2009 data)**

<table>
<thead>
<tr>
<th>Institution</th>
<th>Total # Enrolled Students</th>
<th>% Male*</th>
<th>% Female*</th>
<th>% Asian*</th>
<th>% African American*</th>
<th>% Hispanic*</th>
<th>% Multi-ethnic*</th>
<th>% Native American*</th>
<th>% White*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire College</td>
<td>24,549</td>
<td>38.7</td>
<td>61.3</td>
<td>8.2</td>
<td>41.8</td>
<td>5.8</td>
<td>3.4</td>
<td>.3</td>
<td>29.1</td>
</tr>
<tr>
<td>Researchers’ Campus</td>
<td>6,558</td>
<td>45.5</td>
<td>54.5</td>
<td>14.2</td>
<td>22.6</td>
<td>10.5</td>
<td>3.4</td>
<td>.3</td>
<td>33.2</td>
</tr>
<tr>
<td>Surveyed Class</td>
<td>29**</td>
<td>53.84</td>
<td>46.15</td>
<td>15.38</td>
<td>15.38</td>
<td>7.6</td>
<td>7.6</td>
<td>0</td>
<td>53.84</td>
</tr>
</tbody>
</table>

*Gender and racial identification of students in surveyed class was based on total number of participants who volunteered demographic information, not the total enrolled number of students the class.

**There were 35 enrolled students in the surveyed class. 29 participated in the demographic survey above.

**Role of Researchers**

The primary researcher of this study was also the instructor of the participating class in this study. She created the research instruments, protocols and procedures, and implemented the instruments to measure how the digital simulation influenced student engagement and learning. The primary researcher provided informed consent to the class by notifying students that their participation was voluntary, anonymous, and opting out of the study would not negatively impact their grades. The secondary researcher is a history and social studies professor with a research specialty in digital simulations and technologies. He served as a consultant for this study.
The primary researcher frequently used digital media and technology for teaching and leisure. Born in the early years of the Millennial Generation, she was trained in constructivist pedagogies in universities and public schools in the Northeast. She regularly employed active learning strategies with technology to promote engagement while teaching by using apparatus such as PowerPoint® presentations, documentaries such as A Biography of America on the Annenberg Media website, and discussion boards on the learning management system Blackboard Vista. The secondary researcher was born in the Generation X era with experiences teaching social studies in public schools and universities in the Southeast. His doctoral work focused on the impact of a digital simulation on student learning. He regularly teaches graduate courses in social studies education and the implementation of digital technologies in the classroom. We share a predisposition towards the use of digital simulations to promote active learning and engagement. Our subjectivities are discussed in the limitations section of this study.

Method

The primary researcher engaged in action research in this study, employing several methods for collecting and analyzing data. She gathered data from student assessments and surveys as a means to evaluate The Constitution of 1787 simulation’s effectiveness on student learning and engagement. There were two instruments given as pre-assessments. First, a pre-test was given to the class to gauge students’ prior knowledge about the Constitutional Convention. The pre-test was a 10-question multiple-choice quiz about the Constitutional Convention students completed at the beginning of the class period (see Appendix A). The pre-test contained questions about the Articles of Confederation, the differences between the Federalists and Anti-Federalists, the purpose of the electoral college, the controversy between the New Jersey and Virginia plans, and the debate over states’ representation with the Three-Fifths Compromise or Clause. The questions on the pre-test were designed based upon the college’s core curriculum and course outline for this United States history course.

Second, a pre-survey was distributed after completion of the pre-test. The pre-survey (see Appendix B), contained 25 items aimed at garnering students’ attitudes towards using a digital simulation for learning about the Constitutional Convention. The items on the pre-survey were designed to elicit students’ beliefs about their knowledge about the Constitutional Convention, their comfort level using technology for educational purposes, and their attitudes towards the value and effectiveness of using a simulation game for educational purposes. Students were given the option to provide written feedback on the pre-survey. The study participants were explicitly instructed not to provide their names on the pre-survey or pre-test.

The primary researcher recorded field notes observing the implementation of the simulation, and students’ questions and reactions. The primary researcher triangulated her findings from the surveys and assessments with her field notes in order to detect patterns concerning students’ beliefs about using a digital simulation as a means to promote engaged learning and content knowledge.

Implementation of Simulation

The primary researcher planned two days to teach the Constitutional Convention with the participating class in this study. She reserved the computer lab at the campus library for the first day of the lesson for the students to complete the simulation. On the first day of the lesson, the primary researcher planned for the class to work in small groups of two or three students on the
simulation. The plan also involved students being placed in heterogeneous groups based upon their grades and abilities as demonstrated on formal and informal assessments.

First, the primary researcher began a brainstorming session by asking “what do you think the U.S. Constitution is?” in order to elicit students’ prior knowledge about the Constitutional Convention and purpose of the Constitution. After the brainstorming session, the pre-test and pre-survey were distributed for students to complete. Next, she delivered a mini-lecture with a PowerPoint® presentation to provide background information about the Constitutional Convention. Among the issues addressed in the mini-lecture included the strengths and weaknesses of the Articles of Confederation, the impact of Shays’ Rebellion, and the historical need for the Constitutional Convention. After the mini-lecture, the student groups started the Constitutional Convention of 1787 simulation at a desktop computer while taking notes on a teacher created activity worksheet (see Appendix C). If the students had further questions about items shown in the video interludes or voting sessions in the simulation, the original plan was for them to crosscheck information from the simulation with their course textbook. At the conclusion of the lesson, the students printed their constitutions and discussed what they learned about the complexities and process of drafting the Constitution.

Findings

On the first day of the lesson, the primary researcher began the lesson by asking students how they thought the Constitution related to issues of freedom, liberty, and democracy in United States history. Some students responded they believed the Constitution outlines the laws of the country, protects freedoms such as religion and speech in the Bill of Rights, and that it can be amended to meet the needs of society (Field Notes, February 13, 2013). Next, the primary researcher polled the class by asking how confident students felt about what they knew about the Constitutional Convention and why the Constitution was drafted. More than half of the students raised their hands indicating that they did not feel confident in their prior knowledge about the Constitutional Convention or why the document was written. When asked why they did not feel confident in their prior knowledge, some students remarked they had not studied the Constitution in many years (Field Notes, February 13, 2013). After the informal poll of the class, the students completed the pre-test. Most students did not demonstrate having strong prior knowledge about the Constitutional Convention as the mean score on the pre-test was 48%.

Next, the primary researcher distributed the pre-survey. The pre-survey results (see Table 3) provided insights about the participants’ beliefs and attitudes about a digital simulation for learning historical content and engagement. Although the students indicated they did not feel confident in their knowledge of the Constitutional Convention, they believed that the use of a simulation would help them learn about the Constitutional Convention and would promote engagement. The students agreed that they were confident in their technological skills, particularly using digital applications and simulations for educational purposes. The pre-survey indicated an overall enthusiasm about using the simulation to learn about the historical significance of the Constitutional Convention.

Table 3
Rate of Student Responses: Pre-Survey, Constitutional Convention of 1787

<table>
<thead>
<tr>
<th>Question #</th>
<th>A- Strongly Agree</th>
<th>B- Agree</th>
<th>C- Somewhat Agree</th>
<th>D- Somewhat Disagree</th>
<th>E- Disagree</th>
<th>F- Strongly Disagree</th>
<th>No Response</th>
</tr>
</thead>
</table>

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27 surveys were included in the rate of responses. Two students did not complete the survey and were excluded from the final rate of responses.

**Technical Difficulties**

The implementation of the Constitutional Convention of 1787 simulation did not occur as planned due to several technical problems. The first expected problem was that the lab did not have enough computers to accommodate all the students. As a result, students were instructed to work in small groups of two or three students, but some students who arrived late had to work in larger groups. The second implementation problem occurred when the simulation did not load on the Mozilla Firefox Internet browser. Although the primary researcher easily remediated the browser issue by directing the students to use Internet Explorer instead, she spent a few minutes announcing to the class which browser they needed to use for the simulation. The third problem involved disabled audio on the students’ computers. The simulation’s video interludes were essential to providing relevant information about the historical implications and issues at the Constitutional Convention. In other words, the students needed to hear the audio to appropriately engage in the voting sessions and complete the activity page. In retrospect, the preceding technical problems resulted from inadequate testing of the equipment, but teaching over 150 students in a semester stretched the researcher’s planning time to a minimum. More thorough preparation on the part of the primary researcher with regard to the sound and Internet.
accessibility may have remediated these problems that emerged in the implementation of this simulation.

The researcher decided to prompt the class through the voting sessions using the computer at the instructor podium because this computer had Internet connectivity and audio. She guided the class through the first steps of the simulation by choosing a state to represent and unanimously choosing George Washington as the president of the convention. The fourth problem transpired when the Internet buffered in the middle of the video interlude that segued into the voting sessions, thus pausing the game indefinitely. Realizing that the class period’s time was rapidly ending, the primary researcher referred back to her PowerPoint® presentation from the mini-lecture in order to keep the students engaged in the material they were intended to learn from completing the simulation. She delivered a lecture on the Virginia Plan, New Jersey Plan, and representation in the House of Representatives and Senate. Due to the technical problems encountered, the primary researcher did not distribute post-test and post-survey because the students never completed the simulation. As stated previously, comprehensive planning and troubleshooting in the computer lab may have prevented some of the technical problems that the primary researcher encountered while implementing this simulation.

Additional Findings

Student efficacy and motivation were impacted by the technical difficulties with the simulation. When the primary researcher distributed the pre-survey, student enthusiasm was high with regard to using the simulation for learning about the Constitutional Convention. Some students’ attitudes changed when the technical problems occurred. One student remarked that the class period was “wasted” with the time spent on attempting to fix the technical problems (Field Notes, February 13, 2013). Another student asked for his or her pre-survey at the end of the class and wrote, “I’m not paying thousands of dollars to play games in class” (Field Notes, February 13, 2013). Other students asked the primary researcher if the class was “going back to normal” for the next session (Field Notes, February 13, 2013), referring to how the primary researcher regularly balanced the use of digital technologies with discussion, lecture, and printed sources to teach her courses.

These findings highlight the need for future studies on the potential impact digital simulations may have on student efficacy and motivation. Digital simulations can positively impact a student’s self-efficacy, emotional state, and mental exertion (Lang & O’Neil, 2011). There has been a call, however, for empirical and longitudinal research to examine “the relation between playing video games, persistence in the face of failure, and subsequent ‘real-world’ success” (Granic, Robel, & Engels, 2014, p. 71-72). In agreement with Granic, Robel, and Engels (2014), the researchers call for further studies to evaluate how students’ motivation, efficacy, and emotions toward real world situations, such as problems with technology, are affected when using a digital simulation to promote engaged learning.

Limitations of the Study

There were obvious limitations to this study. The researchers should have taken appropriate measures to ensure that the simulation functioned properly in the computer lab. By consulting with a media specialist or technology staff prior to implementing the digital simulation, the students may have been able to complete the simulation as intended. Although research indicates fewer institutional and technical barriers to technology (Bolick et al., 2007), this study shows access to computers is not necessarily one-to-one and the quality of the computers is not always state of the art.
The primary researcher relied on self-study and analysis of field notes and student data to measure student engagement. Due to the primary researcher serving as the instructor who designed the research instruments and protocols, this study could be ameliorated if an outside colleague or administrator observed how she conducted the lesson. Outside feedback from other colleagues, instructors, and researchers in addition to the secondary researcher could provide insights as to how the simulation and the research instruments could be improved to promote student engagement.

The primary researcher elicited feedback on this study by presenting her findings to history faculty at a professional development workshop at the institution where this study took place. History faculty who attended this session provided constructive feedback about using The Constitutional Convention of 1787 simulation in their courses. One faculty member raised the issue of time constraints when implementing this simulation with regard to designing teacher-made instruments and testing to make sure the technology works properly. Instructors at this college teach between four to six courses a semester. As a result, time constraints could prevent instructors from testing, troubleshooting, and creating assignments to use with a digital simulation such as The Constitutional Convention of 1787 with their classes.

Virtual engagement was another issue faculty brought up at the professional development session. One faculty member asked if the simulation had the capability to allow students to virtually interact with each other during the voting sessions. The Constitutional Convention of 1787 simulation does not have virtual communication features. Although the teacher-created worksheets were designed to encourage discussion between students while playing the simulation, the simulation does not have the capacity to facilitate in real-time, synchronous virtual conversations. Designer modifications to the Constitutional Convention of 1787 that would allow students to virtually communicate during the voting sessions may model the deliberative process more effectively and further foster students’ engagement and content learning.

Conclusion

College instructors entering a new frontier using technology to promote engaged learning in undergraduate history courses face a myriad of opportunities and challenges. Digital simulations, such as the Constitutional Convention of 1787, promote active learning by modeling complex conflicts, decision-making, and human interactions that can support student engagement and learning. The Constitutional Convention of 1787 simulation contained many interactive features including video interludes and voting sessions that were designed to engage students in the processes of framing the Constitution and the United States government. The simulation met the criteria of being an appropriate educational tool by providing students with feedback based upon their progress, modeling the socio-political aspects of life in America in 1787, and delivering an element of surprise with the outcomes of voting sessions. The simulation provided clear directions for students and aligned with the college’s content and curricular standards.

We recommend that instructors take into account certain factors before implementing a digital simulation for instruction in their courses. We suggest also that teachers align the instruction with a simulation to curricular and content standards, be cognizant of the learning needs and styles of students, provide feedback to students, and anticipate technical difficulties in order to garner accurate data on the effectiveness of the simulation on student engagement and achievement.
References


Web-based References

Appendix A

Constitutional Convention Pre-Test

Directions: Read each question carefully. Place the correct letter in the spaces.

_____1. Under the Articles of Confederation, 
A) all 13 states had to approve routine decisions. 
B) 5 states had to approve war-making decisions.  
C) the president had ultimate legislative powers.  
D) each state had a single vote in Congress.

_____2. The two men instrumental in calling for the Philadelphia meeting were:  
A) Jefferson and Madison.  
B) Madison and Hamilton.  
C) Washington and Franklin.  

_____3. When the Constitution was drafted, slavery was 
A) not named, but its existence was recognized and guaranteed.  
B) the most hotly debated issue.  
C) euphemistically outlawed.  
D) explicitly named as being a landowner's liberty.

_____4. The New Jersey Plan proposed at the Constitutional Convention  
A) called for severely limiting the powers of the congress.  
B) reserved control over taxation, revenue, and commerce to individual states.  
C) featured a two-chamber legislature elected by voters.  
D) called for a one-chamber legislature in which each state would have one vote.

_____5. To create a presidency out of the reach of direct democracy, the delegates:  
A) devised the electoral college.  
B) said that the state legislatures would choose the president.  
C) provided for a popular vote to elect the president.  
D) said that the Senate and House would vote for a president.

_____6. The Bill of Rights were added to the Constitution because  
A) Of fears the state governments would suppress individual freedoms  
B) Of concerns the federal government would suppress individual liberties  
C) States expressed concerns over the loss of federalism  
D) The Judiciary wanted to review the legality of the establishment of a national bank

_____7. The proposal at the Constitutional Convention to create a two-chamber legislature with representation in both houses based on each state's population was:  
A) New Jersey Plan.  
B) Three-Fifths Plan.  
C) Connecticut Plan.  
D) Virginia Plan.

_____8. Those against the Constitution were known as  
A) Whigs  
B) Libertarians  
C) Antifederalists  
D) Anti-constitutionalists

_____9. The fundamental issue raised at the Constitutional Convention was  
A) whether the government should be more powerful  
B) whether slavery should be abolished.  
C) how to balance the interests of large and small states.  
D) whether presidential powers should be increased.
10. **Pro-Constitution forces called themselves**

   A) Antifederalists.  C) Federalists
   B) Pro-Constitutionalists.  D) Constitutional Party

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**Appendix B**

*Constitutional Convention of 1787 Digital Simulation Pre-Survey*

**Identification:** Fill in the blanks below with the appropriate information about yourself (OPTIONAL)

- Male or Female: ________  Age: _____  Semesters at this college: ________
- Intended Major: _________  Ethnic/Racial Identification: _________

**Survey:** Please place the letter of your choice for each question on the spaces provided.

   A- Strongly Agree  B- Agree  C- Somewhat Agree  D- Somewhat Disagree  E- Disagree  F- Strongly Disagree

   1) At this point, I feel confident in my knowledge about the Constitutional Convention.
   2) At this point, I think I know a substantial amount about the how and why the Constitutional Convention took place.
   3) At this point, I think playing a simulation about the Constitutional Convention will help me be more engaged in this history class.
   4) At this point, I feel my engagement in this history class will improve by playing a simulation about the Constitutional Convention.
   5) At this point, I am not comfortable using the internet or computer as learning tools in and outside of class.
   6) At this point, I do not feel comfortable learning about the Constitutional Convention with a simulation.
   7) At this point, I think playing a simulation will have educational value in my learning of the Constitutional Convention.
   8) At this point, I feel a simulation will add value to my learning about the Constitutional Convention.
   9) At this point, I do not believe that I know a significant amount of information about the Constitutional Convention.
   10) At this point, I think I am proficient in using internet and computer applications as learning tools in and outside of class.
   11) At this point, I do not believe playing a simulation about the Constitutional Convention will aid in my engagement in this history course.
   12) At this point, I do not believe playing a simulation will add educational value to my learning about the Constitutional Convention.
   13) At this point, I think playing a simulation will improve my engagement in this class.
   14) At this point, I do not think a simulation will help me understand the importance of the Constitutional Convention.
   15) At this point, I do not think I am proficient in using computer and internet applications as learning tools in and outside of class.
   16) At this point, I feel a simulation will have a significant educational value to my learning of the Constitutional Convention.
   17) At this point, I do not believe a simulation about the Constitutional Convention will impact my engagement in this history class.
____ 18) At this point, I feel confident in my abilities to use applications on the internet to aid in my understanding of the Constitutional Convention.

____ 19) At this point, I believe playing a simulation will add to my knowledge about the Constitutional Convention.

____ 20) At this point, I think a simulation will have educational value to my understanding of the Constitutional Convention.

____ 21) At this point, I think I will learn more about civics by playing a simulation game about the Constitutional Convention.

____ 22) At this point, I feel I will learn a lot about civics by playing a simulation about the Constitutional Convention.

____ 23) At this point, I do not believe I will understand civics better by playing a simulation game about the Constitutional Convention.

____ 24) At this point, I do not think I will better understand civics by playing a simulation game about the Constitutional Convention.

____ 25) At this point, I do not feel I can learn the relationship between civics and the historical events of the Constitutional Convention with a simulation.

**Additional Comments and Feedback:**

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**Appendix C**

Name: ___________________________ Course & Section #: ____________ Date: __________

**Activity Page, The Annenberg Classroom “Constitutional Convention” Simulation Game**

**Directions:** With a partner, follow the link to the Annenberg Classroom “Constitutional Convention” simulation game. [http://www.annenbergclassroom.org/page/the-constitutional-convention](http://www.annenbergclassroom.org/page/the-constitutional-convention). You will follow the steps to create your own Constitution that is to be passed in your state’s ratification convention. At the end of the game, you will compare your constitution to the actual U.S Constitution that is passed in 1787. As you go through the simulation, follow along with your textbook chapter 8 to answer the following questions:

1) What state did you choose to represent at the Constitutional Convention in the game?
2) What problems did the states face coming to the Constitutional Convention?
3) Why was the Constitutional Convention held in secret?
4) What were the two plans for state representation at the Constitutional Convention? How were they different?

5) What was Edmund Randolph’s “radical” plan for the new national government?

6) What issues did you support or oppose in your four voting sessions at the Constitutional Convention? What states supported and opposed your positions? Explain below:
   a. Session 1-
   b. Session 2-
   c. Session 3-
   d. Session 4-

7) Based on the simulation and information in chapter 8, identify the definition of the following terms:
   a. Proportional Representation:
   b. Bi-Cameral Legislature:
   c. “Stake in Society:”
   d. Three-Fifths Compromise or Clause:
   e. Federalism:
   f. Checks and balances:
   g. Nationalists (or Anti-Federalists):
   h. Federalists:
   i. Bill of Rights:

8) How did you do on the quiz at the end of the game?

9) After playing the simulation, what struggles and challenges do you think the Framers of the Constitution faced at the Constitutional Convention?

10) How did your constitution compare and contrast to the actual US Constitution at the end of the game?

11) What did you learn about the Constitutional Convention and the US Constitution that may not have known before playing this simulation? Explain.

Author Bios
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