

# Can Embedded Annotations Help High School Students Perform Problem Solving Tasks Using A Web-Based Historical Document?

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## Abstract

*Two versions of a Web site on the United States Constitution were used by students in separate high school history classes to solve problems that emerged from four constitutional scenarios. One site contained embedded conceptual scaffolding devices in the form of textual annotations; the other did not. The results of our study demonstrated the situational importance of the annotations as well as the need for instructional Web designers to make their design intentions transparent. A holistic approach to examining annotational content is recommended in which teachers and designers consider how Web-based annotational content might function in instructional settings. An initial topology is also proposed for the annotations on the Web site used in this study. (Keywords: annotations, instructional Web design, social studies.)*

Authentic resources for social studies and history are widely available online, but most of these resources do not take advantage of the unique hypermedia capabilities of the Web. The instructional use of emerging technologies such as the Web represents a unique opportunity to alter dramatically the character of social studies instruction (Whiteworth & Berson, 2003). Despite this potential, the use of online resources in social studies and history classrooms has to date been limited (Becker, 2000; Lee & Hicks, 2003).

The Web and other hypermedia environments allow students to choose which information they would like to access and when they would like to access it (Becker & Dwyer, 1994). This characteristic can be useful for certain types of learners and learning activities (Jonassen & Grabinger, 1992). The complexity of hypermedia links and the regularity with which they appear throughout Web-based documents, however, can be overwhelming and distracting. When users become disoriented and/or sidetracked while trying to work in hypermedia environments, they can lose mental power needed for learning (Jonassen, 1989; Kenny, 1993; Romiszowski, 1990). Furthermore, "Content that is unfamiliar or organized in an unfamiliar fashion will be learned poorly unless the individual is provided with or develops concepts or organizing principles that aid the acquisition process" (Clark & Bean, 1980, pp. 2–3).

Instructional designers are therefore presented with the problem of how to relieve the cognitive stress of learning with hypermedia, while not eliminating apparent advantages of non-linearity. Organizational or structural aids embedded in hypermedia can demonstrate patterns in linked nodes or suggest to learners

the framework of a body of information (Tripp & Roby, 1990). They can further be used for the dual purpose of providing knowledge structures on which those learners can build their understanding of a body of information. Rather than using help devices that focus solely on computer-user interaction (e.g., search engines or navigational aids), Tricot, Pierre-DeMarcy, and El Boussarghini (2000) have suggested that help devices such as scaffolding resources must initially assist students with their learning activity (i.e., student-content interaction).

Land (2000) called for explicit attention to be paid to learner guidance, especially now that more technologically advanced means of representing information (such as hypermedia) are prevalent. There is a large body of literature on hypermedia learning—too large to describe in any sort of reasonable depth in this article (See Shapiro & Niederhauser, 2004). Although at times the research has produced studies with questionable results (Chen & Dwyer, 2003), some have argued that aspects of hypermedia and the Web can be used to facilitate scaffolding of disciplined inquiry, especially in more open-ended learning environments (Hannafin, Land, & Oliver, 1999; Jacobsen & Spiro, 1995; Land, 2000; McLoughlin, 1999).

Some research has described the use of embedded scaffolding as one component of an effective open-ended learning environment (Jakobsen et al., 1996; Land, 2000; Saye & Brush, 2002). Scaffolding in this case refers to how learners' efforts can be supported while working in a learning environment. Hannafin et al. (1999) classified types of scaffolding that can be included in open learning environments. These classifications include: (a) conceptual scaffolding that guides a learner in what content to consider, (b) metacognitive scaffolding that guides a learner in how to think during learning, (c) procedural scaffolding that guides a learner in how to utilize available features of an environment, and (d) strategic scaffolding that guides a learner in how to analyze and approach a given learning task or problem.

Jakobsen, Maori, Mishra, and Kolar (1996), for example, used hypertext in order to provide scaffolding to students in the form of conceptual links between information within an instructional program. As compared to a control group who explored the same program more freely, those students in the Jakobsen et al. study, who were provided scaffolding, were able to gain a better understanding of the instructional content. Saye and Brush (2002) investigated how scaffolding functions in a problem-based hypermedia instructional unit (Decision Point!) with 11th grade U.S. history students. They found that expert guidance should be embedded into hypermedia learning environments to give students conceptual and strategic road maps that assist them in understanding how to conduct problem-based inquiry in social studies.

Hill and Hannafin (2001) noted that designers need to ground the design of digital learning environments in theory and practice. For example, as students rely more and more on the Web and multimedia educational tools, designers must begin to create resources that infuse pedagogy into their design. If they do not take these factors into consideration, teachers can end up having to develop over-structured activities that may limit students' interaction with those digital resources (Lee, 2002).

In accordance with this idea, *The Semantic Constitution* (<http://msit.gsu.edu/socialstudies/constitution>) was made available to 50 high school students in two United States history classes during the fall semester of 2002, to enable them to explore the United States Constitution through its conceptual or semantic structure. The resource was created by means of an in-depth analysis of the Constitution directed at finding recurring concepts and themes within the document. One hundred and seventeen total concepts and themes were uncovered. Added conceptual scaffolding devices in the form of textual annotations were developed for each concept to assist users by providing context and schema related to the material at hand. A parallel version of the Semantic Constitution site was created without annotations. This site is available at <http://msit.gsu.edu/socialstudies/constitution2>.

## METHOD

This study involved the analysis of 50 high school U.S. history students' work with the Semantic Constitution Web site. The student participants in this study were enrolled in two 11<sup>th</sup> grade U.S. history classes at a suburban high school in the southeast United States. The school enrolled almost 2,000 students. The student body at the school was approximately 80% white, 10% Hispanic, and 10% black. The suburban area served by the school was primarily middle class. Overall, the school's student standardized test scores were about the same as the average state scores. Both of the classes used in this study were regular sections of a required U.S. history course and the students were representative of the student body as a whole. Twenty three participants were female and 27 were male.

Students in these courses were generally adept at using computers to access information on the Web. All the students in the study expressed comfort with the technology in a brief survey we administered in advance of the study. Students completed their work individually in a computer lab. All students were able to get help from their teacher if their computers did not work or they were unable to operate the Web browser software (Internet Explorer). Students were provided a 10-minute overview of the task, the general structure of the Web site, and the computer hardware and Web browser software. No students reported difficulty in accessing the site or operating the computer or the browser.

One class (N=23 students) worked with the version of the Semantic Constitution Web site that contained topical annotations. The second class (N=27 students) worked with the version of the site that did not contain the annotations. Participants in this study responded to a set of four written constitutional scenarios that explained some real or fictional event. (See Appendix One, page 79). The participants were asked to use the Semantic Constitution Web site to solve a problem that emerged from each scenario. Students' responses to the scenarios were written, and ranged from a single sentence to several paragraphs. Students worked individually and were not given a length requirement for the assignment, but were encouraged to respond in-depth. In summary, we provided students with written constitutional scenarios. (See Appendix One, page 79) and they responded in writing to questions and prompts within the scenarios.

We hypothesized that students with the annotations would be better equipped to complete the assignments. Specifically, we thought that students with access to the annotations would respond to the scenarios with more veracity, clarity, and depth. Students' responses to the scenarios were analyzed using the constant comparative method (Glasser & Strauss, 1967), which allowed for the development of emergent findings that could be grounded in the data.

The first step in analyzing the data was to develop a system for coding the data. We did this work in collaboration by identifying preliminary categories that described broad and common findings across the data. One researcher identified an initial set of categories and the second researcher confirmed or disconfirmed the existence of these initial categories. Fifteen of 20 initial categories were maintained as a result of this review. (See Appendix Two, page 80). In addition to identifying categories, we coded each category as primarily related to one of the four scenarios. This was possible given that our primary data source, students' work, was organized by their responses to the four separate scenarios. We jointly coded all data using these 15 categories. After the data were coded, we jointly compared it across the categories in order to solidify the classification by the four scenarios. We did not make any changes, and thus, no categories were reclassified. Next, we synthesized assertions drawn from the data in the categories into four separate findings, one for each scenario. These findings, one for each scenario, are presented below.

## ANALYSIS OF FINDINGS

### Scenario One

Students' responses to the first scenario supported our contention that the annotations would make a difference in the depth of student responses. The first scenario required students to indicate whether a 17-year-old would be allowed to vote and to provide the appropriate constitutional citation to support their position. Students were not directly asked to explain their answers. Despite the directions several students did offer explanations. Examples of these explanations can be found in Appendix Four, page 82.

All students in both classes responded correctly and got the citation correct, but differences emerged across the classes regarding explanations and the use of direct quotes. Sixteen of the 51 students in the study (32%) simply quoted the correct section of the Constitution. Twenty-seven students (53%) offered an explanation to go with a quote. Seven students (14%) explained their answer and had no quote. One student (2%) cited the Constitution without a quote or explanation. Of the 16 students who quoted the correct section of Constitution and offered no explanation, fourteen (87.5%) were in the class that used the site without annotations. Of the 27 students who offered an explanation with a quote, sixteen (67%) were in the class with annotations.

The actual annotation was quite simple. There was only one reference to voting age in the annotation; "the 26th Amendment lowered the minimum voting age to 18" (see Appendix Three, page 81, for the full annotation). This sentence reinforces the text of the 26<sup>th</sup> Amendment, which states, "The right of citizens of the United States, who are eighteen years of age or older, to vote shall not be denied or

abridged by the United States or by any State on account of age.” Given that all students correctly identified the 26<sup>th</sup> Amendment, they obviously did not need the annotation to respond correctly to the prompt in the scenario. Instead, we believe that the annotation on age functioned as an example to prompt students in the class who had access to annotations to write their own explanation. This finding partially confirmed our initial hypothesis by demonstrating that students who had access to annotations would respond to the prompts in the scenario with more depth. This finding did not help us understand how annotations might function when students did not understand the content in the scenario or when the annotations actually played an explanatory role. Findings from scenarios two through four did address the explanatory role of the annotations.

### Scenario Two

Students’ responses to the second scenario presented a very different picture. In the second scenario students were asked to indicate whether a law targeting a specific action would be constitutional if the law was passed after the specific action made illegal by the law had been carried out. The law suggested in the second scenario was fictitious but related to real events, namely the arrest and imprisonment of seven accused terrorists in Lackawanna, New York. Specifically, the scenario suggested that a new law be passed that would result in the accused receiving significant jail time without being charged under any existing law. The full scenario is in Appendix One. The correct response to the scenario, which asks whether this new law would be constitutional, was that the new law would be an unconstitutional bill of attainder. Students were asked to explain their answers and provide a constitutional citation.

The group with access to the Web-based annotations had an annotation on the topic “bill of attainder.” We believed that this annotation would function differently than the annotation on age, which students accessed when working on scenario one. The bill of attainder concept was much more complex than the voting age concept explained in the age annotation. Given the complexity of the bill of attainder concept, we thought the annotation on the bill of attainder would influence the veracity of students’ answers in ways that the age annotation would not. Our findings did not support our initial contention. Twenty three of 27 students (85%) in the class without the annotations referenced the correct part of the Constitution, while nineteen of 24 students (79%) in the class with annotations got it correct.

This finding was surprising given that we thought the annotations would help students get the answer correct. Although we believe the annotation functioned in an explanatory way, we found that access to other annotations enabled students in the class with the annotations to explore alternatives to the expected response. Most of the students in the class that had access to the annotations who got the answer incorrect referred to the 6<sup>th</sup> Amendment in their answer. They indicated that the constitutional problem was that the accused would not get a fair trial. There were three references to trials in the written description for scenario two. The section in which trials were referenced in the scenario is below (italics added).

Some people believed that the accused Al Qaeda members from Lackawanna should not be given a *trial*, but people who have been accused of breaking the law in the United States have a right to a public *trial*. The fear is that the accused terrorist would use the *trial* as an opportunity to recruit new members and send secret encoded messages to other terrorists.

We believe that the references to trials in the scenario served as a prompt for students to investigate this concept as a potential answer. The potential trial answer then may have competed with the bill of attainder answer. On the Web site with annotations, the terms “bill of attainder” and “trials” were both listed. The annotation on the term “trials” included the following: “The 6th Amendment clarifies a series of rights of the accused: a speedy and public trial, by an impartial jury, with assistance of counsel, and with the opportunity to confront those who have brought the accusations.” Underneath the annotations were citations and texts from two sections of the Constitution that relate to trials, including Article III, Section 3, Clause 2 and the 6<sup>th</sup> Amendment. Students without the annotations were only able to see the two relevant citations and text passages from the Constitution (Article III, Section 3, Clause 2 and the 6<sup>th</sup> Amendment). We believe the annotation on trials induced several students to focus on the right to a speedy and public trial as guaranteed in the 6<sup>th</sup> Amendment as a response to the scenario instead of focusing on the concept of a bill of attainder. Eight of the 24 students (33%) who had access to annotations mentioned the 6<sup>th</sup> Amendment. Only four of the 27 students (15%) who did not have annotations mentioned the 6<sup>th</sup> Amendment.

Even more surprising, a larger percentage of students in the class without annotations (48% of students without annotations compared to 30% of students with annotations) provided an explanation to accompany their response to scenario two. The explanations were not very long, but in some way extended the students’ answers. We determined that some of the explanations were in effect opinions and these opinions were more common among students in the class without annotations. Students were asked to explain their answer, but were not asked for an opinion. Seven of the 24 students (29%) in the class without annotations offered an opinion-based explanation, representing 50% of all the students in this class who explained their answer. Only one of the 27 students (4%) in the class with annotations offered an opinion. See Appendix Five, page 83, for example of these opinion-based comments.

We believe that some students without the annotations were less comfortable with their answer and thus less comfortable with offering explanations. Many of these students offered an opinion as a substitute for an explanation. These students had no idea why bill of attainder was the correct answer, but were able to deduce it by simply reading the scenario. The relevant text of the scenario stated the following, “...they want the United States to pass a special law called a bill of attainder that would place the men directly in jail without a trial...” Most of the students without the annotations looked up bill of attainder on the list of topics on the Semantic Constitution Web site and read the following text from



the relevant section of the Constitution: “No Bill of Attainder or ex post facto Law shall be passed.” Given this text, the correct response to scenario two was clearly that a bill of attainder is unconstitutional, but students without annotations would most likely have had no idea why the answer was correct. In order to compensate for their general lack of understanding and respond to the remainder of the scenario, which asked them to explain their answer, students offered an opinion.

This does not account for the lack of difference in the rate of non-opinionated explanations (24% for the group without annotations to 26% for the group with annotations). Put another way, why did so many of the students who got the answer correct in the class with access to annotations not offer an explanation when they had access to an example of an explanation? In seeking an answer, we considered the content of the annotation, which read, “A bill of attainder is a legislative act that singles out an individual or group for punishment without a trial. The Constitution makes the issuance of a bill of attainder by any government body in the United States illegal.” The explanation is concise, but requires knowledge of at least three potentially poorly understood concepts or terms, including legislative act, issuance, and government body. We believe some students did not understand one or more of these concepts or terms and/or required additional contextualization before they could use the annotation to explain their response. As a result of students’ discomfort with their fragmented knowledge, they did not attempt an explanation. We believe these students were somewhere between offering an explanation just for the sake of it (or offering an opinion) and understanding what they were explaining. We think this middle ground might have resulted in timidity on the part of students who felt they were close to explaining the answer, but might not want to risk being incorrect. We are also suggesting that simple opinions may not necessarily be more cognitively significant than explanations. The opinions offered by students in the no-annotation group were not grounded in a rich understanding of content. The opinions were mostly simple and pedantic, and we think they only functioned as weak substitutes for more richly contextualized explanations.

### Scenario Three

Students’ responses to the third scenario offered dramatic evidence of the positive pedagogical value of the annotations. The full scenario reads as follows:

President Bill Clinton was the second president in U.S. history to be impeached. Despite his impeachment, Clinton remained in office. Why did President Clinton remain in office after he was impeached?

Impeachment was one of the topics on the Semantic Constitution Web site. The annotation for impeachment reads as follows:

The House of Representatives has the authority to issue an impeachment. An impeachment is an indictment (or accusation of wrong doing) of a public official in the federal government. The Senate is re-

sponsible for trying impeachments and issuing punishments including removal from office. Elected officers may be impeached and convicted if found guilty of treason, bribery, or other “high crimes and misdemeanors.” Presidents Andrew Johnson and Bill Clinton were impeached, but the Senate convicted neither. Several judges have been convicted and removed from office on impeachment charges. The 25th Amendment clarifies the process for the transfer of power in the event that the president dies in office or is removed from office.

The correct response to the question in scenario three (Why did President Clinton remain in office after he was impeached?) is in the annotation. Essentially, Clinton did not leave office because when the Senate conducted its trial they found him not guilty.

Twenty of the 24 students (84%) in the class with the annotations responded correctly. None of the 27 students (0%) in the class without the annotations responded correctly. Students in the class without annotations had trouble because the text in the Constitution on impeachment is complicated. Article I, Section 2 includes the following sentence. “The House of Representatives shall chuse their Speaker and other Officers; and shall have the sole Power of Impeachment.” This sentence clearly states that the House of Representatives is responsible for impeachment, but it does not explain the concept of impeachment. The next reference to impeachment is in Section 3 of Article I.

The Senate shall have the sole Power to try all Impeachments. When sitting for that Purpose, they shall be on Oath or Affirmation. When the President of the United States is tried, the Chief Justice shall preside: And no Person shall be convicted without the Concurrence of two thirds of the Members present.

Although the information is fairly clear that the Senate will try impeachments, there is no explanation of what an impeachment involves. The impeachment concept was explained in the annotation and this allowed the students who had access to the annotations to understand the distinction between the impeachment process and the trial.

Students in the class without annotations had access to ten constitutional references (including the citation and the text of each reference). The last five references were to the 25<sup>th</sup> Amendment. Twenty four of the 27 students (89%) in the class without annotations incorrectly referred to the 25<sup>th</sup> Amendment which details the procedure for filling a vacancy in the White House. The 25<sup>th</sup> Amendment explains the procedure for filling vacancies in the presidency and describes how the office should be filled if a president were to be temporarily unable to fulfill the duties of the office. For example, if a president were to have surgery and be anesthetized, the 25<sup>th</sup> Amendment states that the vice president (who would be acting as the president) should tell the Congress that “no inability exists” after the president regains consciousness. Pending congressional approval of this official communiqué, the president can, in the words of the 25<sup>th</sup> Amendment, “resume the powers and duties of his office.” If the Congress is suspicious



of this claim, say for example if the president is mentally incapacitated and the vice president or someone else is attempting to install a puppet president, the Congress can on a 2/3 majority vote reject the vice president's request. Most students in the class without the annotations read the text of the 25<sup>th</sup> Amendment and thought that Congress had failed to declare that Clinton had an "inability" to serve and that he was allowed to "resume" in the office. Students were, of course, inferring that the impeachment had temporally removed Clinton from office.

The findings from scenario three may also demonstrate the value of brevity. Scenario three was much shorter than scenario two. Students in the class with annotations were able to focus exclusively on the concept of impeachment when working on scenario three. Because of the introduction of multiple concepts in scenario two, including bill of attainder, trials, and terrorism, students with annotations on those concepts may have been overloaded or poorly focused.

#### **Scenario Four**

Scenario four presented still another issue relating to the role of annotations. The scenario, like number two, related to terrorism. Students were asked to consider whether the suspension of the writ of habeas corpus by President Bush after the terrorist attacks of September 11 was constitutional. A writ of habeas corpus is a judicial mandate to a prison official ordering that an inmate be brought to the court so it can be determined whether that person is imprisoned lawfully and whether he should be released from custody. There is no consensus view within the legal community on whether Bush acted constitutionally when he partially suspended the writ of habeas corpus. The Constitution states that the writ of habeas corpus may be suspended in some instances. Article I, Section 9 states, "The Privilege of the Writ of Habeas Corpus shall not be suspended, unless when in Cases of Rebellion or Invasion the public Safety may require it." Civil libertarians were very concerned that President Bush limited accused terrorists' access to information regarding their incarcerations. Others tended to approve of the president's actions as necessary measures designed to protect the general public.

In this scenario, students were directly asked for their opinion. Students in both groups expressed their opinions, but there were important differences. Twenty four of the 27 students (89%) in the class without annotations thought Bush acted constitutionally when he suspended the writ of habeas corpus. Only 14 of 24 students (58%) in the class with annotations thought Bush acted constitutionally. We think students were more willing to view Bush's actions as constitutional because they had less annotational or explanatory information. The writ of habeas corpus concept was listed as a topic on the Semantic Constitution Web site. The annotation read as follows, "the Writ of Habeas Corpus may only be suspended when public safety may be in danger. Habeas Corpus is the right of a prisoner to have a judge review and, as necessary, justify continued imprisonment." The annotational reference to "right of a prisoner" may have induced more students in the class with access to the annotations to view the suspension of the writ of habeas corpus as problematic. The students in the class without the annotations were simply deciding whether the accused terror-

ist posed a threat to public safety. The students in the class with the annotations had to decide between the threat to public safety and prisoners' "rights." This added level of complexity resulted in a more varied set of responses among the students in the class with access to annotations. See Appendix Six, page 84 for examples of students' thinking on the constitutionality of Bush's action.

## DISCUSSION AND CONCLUSION

The results of our study demonstrated the situational importance of the Web-based constitutional annotations. Although our hypothesis was not fully supported, we did learn that the annotations functioned as a type of scaffold that at times helped students build unique schemas that they used to develop their responses to the scenarios. These schemas did not always develop the way we expected. We found that access to annotations sometimes influences the explanatory clarity, veracity, and depth of students' answers. We also found that multifaceted annotations may have caused students to respond with less veracity, but not necessarily with less depth or clarity.

In order to explain why annotations functioned differently in different settings we developed a classification system for the various types of annotations. This classification system was based on our research and may not represent a generalizable theory regarding annotations, but we believe this system does explain how some annotations function and thus may be useful to instructional designers and teachers. We classified all the annotations as either functional or nonfunctional. Functional annotations aided students in the construction of responses to prompts and questions in the scenarios. Nonfunctional annotations provided limited or no help or distracted students from their tasks. We discovered three types of nonfunctional annotations: simple, dependent, and restrictive.

The annotation on impeachment proved to be the best example of a functional annotation emerging from our research. Given that annotations should explain, we considered the impeachment annotation as functional, as it clearly explained the meaning of impeachment. Eighty four percent of the students in the class that had access to the impeachment annotation were able to respond to scenario three correctly, while none of the students in the class without access to the impeachment annotation responded correctly.

Simple nonfunctional annotations were nonfunctional in the sense that they provided students with little more than a restatement of a well understood constitutional idea. The annotation on the topic "age" was a simple nonfunctional annotation. Students did not need the annotation to understand and apply the constitutional reference to voting age. The correct response rate to the question in scenario one on the topic of voting age among the classes with and without access to annotations was identical. Students who had the annotation were more likely to offer explanations to accompany their citation in response to the scenario about voting age, but not because the annotation offered something unique or new. Instead, we suspect that this happened because the simple annotation prompted students by example to provide their own simple explanation. In other words, students were mimicking the simple annotation when they wrote their explanation.

When the annotation offered a partial explanation of something that was completely unknown to students, as with the annotation for bill of attainder, we considered it a dependent nonfunctional annotation. These annotations were often dependent on additional information or prior knowledge. Several students needed a contextual frame or additional explanation, the kind that can be most efficiently delivered by a teacher, in order to make use of these more limited annotations. This type of annotation encouraged students to access prior knowledge and if that was lacking, outside explanatory materials or teacher assistance. We saw this with students who had access to the annotation on bill of attainder in that they gave significant attention to the 6<sup>th</sup> Amendment as a potential answer. Although the answer was wrong, it came from a reasonable quest for explanatory information contained in other annotations. We also found that students who had the annotation were no more likely than those without annotations to offer an explanation. In this case, the annotation did not help some students develop their own explanations because the annotation was poorly understood and contextualized, as opposed to simple non-functional and functional annotations that were fully understood and thereby at least mimicable.

The restrictive nonfunctional annotation was the most complex type of annotation. An example of this type is the annotation on writ of habeas corpus, which played a restrictive role in terms of how access to the annotation influenced students' opinion. The content of the annotation offered content unrelated to the scenario and introduced a values component. The availability of the annotation positioned students to make decisions between competing concepts, namely the rights of the accused versus the need for public safety. The rights of the accused were referenced in the annotation. The issue of public safety was broached in the scenario. The contest between the rights of the accused and the need for public safety required students to clarify their own values, in that they had to decide which of these important democratic principles should, in a sense, be sacrificed for the sake of promoting the other.

The injection of values-laden content into the task proposed in scenario four was not intentional and in fact only functioned as "values oriented" given the context. Students were asked to indicate the constitutionality of Bush's suspension of the writ of habeas corpus. What students had to do was interpret the relevant text in the Constitution, which states that the "Writ of Habeas Corpus shall not be suspended, unless when in Cases of Rebellion or Invasion the public Safety may require it." Students without the annotation had to decide, given their prior knowledge and values, whether the actions of the accused terrorist were a threat to public safety. These students overwhelmingly thought the accused terrorists' actions were a threat and Bush was justified in suspending the writ of habeas corpus. The students with the annotation had a new context within which to apply their values. The annotation raised the issue of prisoners' rights. These students, who likely would not have questioned the suspension of the writ of habeas corpus, became concerned with the suspension.

We believe that one important lesson learned from our finding on scenario four is that teachers' and instructional designers' values might play a role in social studies instruction at any time and even when it is not expected or planned.

While we might argue that the annotation on the writ of habeas corpus actually functioned given that students who had access to the annotation did actually make varied decisions, the issue of how this influence played out is very important. The difference between the students who had the annotations and those that did not have it was not necessarily related to their understanding of the facts of the scenario or constitutional concepts and ideas. Instead, these differences were a product of an ideological prompt. Students were prompted to think about the rights of the accused as opposed to the need for national security. In the class with access to annotations, students were just as likely to support the rights of the accused as they were to support the need to enhance public safety, but only after they were prompted to think about the rights of the accused. When students were not prompted to think about the rights of the accused, they were overwhelmingly in support of limiting those rights for public safety reasons. The design decision to include the prompt, we think, narrows the scope of the annotation (although it broadens the scope of the students' responses) by limiting students to a dichotomous set of alternatives.

In conclusion, we believe that the complexity of the interactions that resulted from students' uses of the annotations should prompt instructional Web designers to consider carefully how they present annotational content. Pedagogical design intentions need to be transparent. Teachers need to be provided information on how Web-based annotational content might function when used in instructional settings. If the annotations need additional contextualization, teachers need to provide that context. Teachers need to consider also how ancillary content raised in annotations will function in their classrooms. Annotations can aid teachers in their efforts to help students understand related content, but only after careful consideration of the ways in which these annotations actually function.

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## APPENDIX ONE

### Constitutional Scenarios

Directions: Respond to the following situations as they relate the Constitution. You must cite the part of the Constitution which applies.

#### *Age*

A 17-year-old is standing outside a polling place on Election Day waiting to vote. She steps up to a table where two poll workers are handing out ballots to get her ballot. One of the poll workers asks for her name. The young enthusiastic citizen provides her name, but the poll worker cannot find her name on a list of registered voters. Apparently, this would-be voter has forgotten to register to vote. The next day she goes to city hall to register for the next election. The city election supervisor tells her she cannot register. Why is she not allowed to register? Provide a Constitutional citation for why this person cannot register to vote.

#### *Bill of Attainder*

Several weeks ago seven men from Lackawanna, New York (a suburb of Buffalo) were arrested and charged with being members of the Al Qaeda terrorist group. Al Qaeda is believed to be responsible for the World Trade Center attacks. Some people believe that the accused Al Qaeda members from Lackawanna should not be given a trial, but people who have been accused of breaking a law in the United States have a right to a public trial. The fear is that the accused terrorists will use a public trial as an opportunity to recruit new members and send secret encoded messages to other terrorists. To prevent this from happening they want the United States Congress to pass a special law called a bill of attainder that would place the men directly in jail without a trial and prevent them from communicating secret messages to other terrorists in the United States. Would this congressional action be Constitutional? Explain your answer and cite the part of the Constitution that applies.

#### *Impeachment*

President Bill Clinton became the second president in U.S. history to be impeached. Despite his impeachment, Clinton continued in office. Why did President Clinton remain in office after he was impeached? When writing your answer make sure you refer to the parts of the Constitution that apply.

#### *Writ of Habeas Corpus*

Last year President Bush became the first president since Abraham Lincoln to suspend the writ of habeas corpus. The order, which is being enforced by Attorney General John Ashcroft, has resulted in the imprisonment of several accused terrorists. These people are being held without being informed of the crime they committed. Is this action constitutional? Explain your answer and cite the part of the Constitution that applies.

## APPENDIX TWO

### Categories for analyzing student responses:

1. Used at least one Constitutional quote in an answer
2. Attempted to explain or apply at quote(s) or reference(s) to Constitution
3. Scenario 1: Used quote only
4. Scenario 1: Used quote and explanation
5. Scenario 1: Used explanation only
6. Scenario 1: Used no quote or explanation
7. Scenario 2: Correctly explained, extended, or applied their knowledge of ex post facto or bill of attainder in their answer
8. Scenario 2: Offered an opinion in their answer
9. Scenario 2: Used 6<sup>th</sup> Amendment
10. Scenario 3: Got scenario 3 wrong
11. Scenario 4: Explained or applied their knowledge of writ of habeas corpus in their answer
12. Scenario 4: Said yes can suspend writ of habeas corpus
13. Showed creativity or originality in argument
14. Used direct or indirect constructional references or examples not listed under the concept
15. Offered an opinion

## APPENDIX THREE

### Constitutional Annotations

#### *Age*

There are several direct references to age in the Constitution as it was drafted in 1789. These references all concern the age at which citizens can serve in federal offices. Article I specifically states the minimum ages for members of the House of Representatives and the Senate. Article II states the minimum age for president. The 14th Amendment to the Constitution set the minimum voting age at 21. The 26th Amendment lowered the minimum voting age to 18.

#### *Bill of Attainder*

A bill of attainder is a legislative act that singles out an individual or group for punishment without a trial. The Constitution makes the issuance of a bill of attainder by any government body in the United States illegal. This constitutional protection means that citizens can only be punished for a crime as a result of a court action where the guilty are assumed innocent and rules of evidence apply.

#### *Trials*

The 6th Amendment clarifies a series of rights of the accused: a speedy and public trial, by an impartial jury, with assistance of counsel, and with the opportunity to confront those who have brought the accusations.

#### *Impeachment*

The House of Representatives has the authority to issue an impeachment. An impeachment is an indictment (or accusation of wrong doing) of a public official in the federal government. The Senate is responsible for trying impeachments and issuing punishments including removal from office. Elected officers may be impeached and convicted if found guilty of treason, bribery, or other "high crimes and misdemeanors." Presidents Andrew Johnson and Bill Clinton were impeached, but the Senate convicted neither. Several judges have been convicted and removed from office on impeachment charges. The 25th Amendment clarifies the process for the transfer of power in the event that the president dies in office or is removed from office.

#### *Writ of Habeas Corpus*

States that the Writ of Habeas Corpus may only be suspended when public safety may be in danger. Habeas Corpus is the right of a prisoner to have a judge review and, as necessary, justify continued imprisonment.

## APPENDIX FOUR

### Quotes from students' responses to Scenario One on voting age

#### *Class with no annotations*

"The lady that tried to when she was 17 was not able because she was violating the Amendment 26, section 1 of the constitution that states "citizens of the United States, who are eighteen years of age..." She could not vote because she was no old enough yet. A person can only register if they are 17 they cannot vote until they are 18."

"In Amendment 26, section one it says, "The right of citizens of the US, who are eighteen years of age or older, to vote shall not be denied or abridged by the US or any other state on account of age." NO matter how enthusiastic this 17 year old person is, he/she cannot be register to vote."

#### *Class with annotations*

"Every citizen of the United States earns the right to vote when they turn eighteen years old. The girl in question is only seventeen years old. According to the constitution she won't earn the right to vote until she turns eighteen years old."

"The right of citizens of the US, who are eighteen years of age or older, to vote shall not be denied or abridged by the US or any other state on account of age. So the age was the reason why this 17 year old person was not yet allowed to register, the minor age of 18 years was not yet reached."

## APPENDIX FIVE

### Quotes from students responses to Scenario Two on terrorist rights and the bill of attainder

#### *Class with no annotations*

“No bill of attainder or ex post facto law shall be passed. I think that they should be tried secretly so nothing in that nature could happen.”

“Article 1, section 10 states that no state has the right to pass any bill of attainder. I think though, if they had proof that the citizens were part of the Al Qaeda group then I don't think they deserve a trial. There should be an exception to every rule.

“I think that putting them directly in jail shows that the U.S. is not playing around or taking chances. If they were going to try and send encoded messages they would not be allowed to.”

“I think this would be a good idea to throw anyone straight in jail who has committed a crime such as this, they need to have a trial if they are guilty.”

#### *Class with annotations*

“It depends on what crime was made, but for the Al Qaeda they should be thrown in jail this Bill should pertain to them, because of the fact the horrible crime on 9-11.”

## APPENDIX SIX

### Quotes from students' responses to Scenario Four on the suspension of writ of habeas corpus

#### *Class with no annotations*

"The presidential action is Constitutional because the privilege of the writ of habeas corpus shall not be suspended unless when in the case of rebellion or invasions. After the WTC terrorist attack, that was a rebellious group invading the U.S., therefore he was allowed to suspend the writ of habeas corpus."

"In the Constitution it states in Article 1, Section 9, Clause 2 that 'The privilege of Writ of Habeas Corpus shall not be suspended unless when in the case of rebellion or invasion the public safety may require it.' President Bush can suspend these with a good excuse. After September 11, there should be no reason why he could not because it clearly says 'invasion' in the text. The terrorist probably know why they have been imprisoned so that is not an issue, and it clearly says it can be suspended under certain circumstances, so that is what he did."

"Bush felt the country's safety was being threatened so he had to do something."

"Bush was able to suspend it due to the Rebellion of Terrorist who attacked the public safety of America. Yes it was constitutional."

"Yes it was constitutional because the accused terrorists probably belong to Al Qaeda. Al Qaeda is a rebel group that threatens public safety. Therefore the writ of habeas corpus can be suspended."

"Yes it is constitutional because it is for the public safety, but they have to prove the crime or the accused terrorist can walk free."

#### *Class with annotations*

"It is unconstitutional for Bush to suspend the writ of habeas corpus."

"It is unconstitutional what president Bush is doing by holding the accused terrorist without them knowing what crime they have committed. In the Constitution it states in Article 1, Section 9, Clause 2 that 'The privilege of Writ of Habeas Corpus shall not be suspended unless when in the case of rebellion or invasion the public safety may require it.'"

"I believe that the suspending of the Writ of Habeas Corpus is not constitutional."