

Maximizing the Potential of Computer-Based Technology in Secondary Social Studies Education

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Journell, W. (2009). Maximizing the potential of computer-based technology in secondary social studies education. *Social Studies Research and Practice*, 4, 55-70.

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Abstract:

This paper looks critically at the way technology is currently used in social studies education and makes the argument that technology can better serve teachers and students as a tool of engagement and inquiry rather than as a supplement to existing practices. In this paper, social studies education is characterized as a quest for reflective inquiry, as a social science, and as a medium for citizenship transmission. Technology can assist in the teaching of all three elements from a constructivist, or inquiry-oriented, perspective. Relevant examples are provided whenever possible and deemed necessary. The paper concludes with a proposal for widespread change in the way social studies teachers utilize technology by focusing on teacher education programs. Teacher educators must contradict students' perceptions of traditional social studies instruction with habits of increased technology usage in order to equip future teachers with the skills required to implement pedagogical change in their classrooms.

Article:

Introduction

Research has shown that exposure to technology can positively impact student performance in all content areas (Huang & Russell, 2006; Page, 2002; Tally & Goldenberg, 2005). Yet within social studies education, Tally (2007) contends that "digital technologies, far from making social studies and history more lively, more rigorous, and more grounded in authentic sources, seem hardly to have made a dent in what teachers and students do" (p. 309). Such a statement does not, however, dismiss the potential technology has for transforming teaching and learning within social studies. This article focuses on ways to integrate technology within social studies classroom instruction through an analysis of three interconnected themes which define social studies education (Brophy & Van-Sledright, 1997): social studies as a form of reflective inquiry, the development of social science skills, and the transmission of civic knowledge. I make a case for increased technology use within all three themes, providing relevant examples when appropriate. I conclude the article by making an argument for a renewed emphasis on technology skills within teacher education. Until the majority of teachers within public education feel comfortable with the basic habits of technology, true changes within social studies classroom instruction cannot occur.

Before proceeding, I wish to clarify parameters regarding the scope of this article. First, while a broad definition of educational technology would encompass a plethora of instructional tools, ranging from overhead projectors to movies and audio recordings (Reiser, 2001), my use of the term "technology" specifically focuses on computer-based resources. Second, any discussion of digital technologies must address issues relating to the digital divide, for without access, all other technological issues become moot. While this article precludes a detailed analysis of the digital divide¹, the arguments presented in this article will operate under the assumption that most schools in the United States can provide stable computer and Internet access to their students. Moreover, I will only focus on elements of technology that can be accessed for free via the Internet or through operating software that can be obtained at reasonable costs to districts. While innovations such as video conferencing and pod-casting have immense potential for public education, the cost associated with such technology currently limits its practical applicability. Technology offers immeasurable possibilities for

education, but we, as educators, have the responsibility to ensure that *all* students can benefit from classroom technology. If only the affluent have access to the latest educational technology, the digital divide in public education will never cease to exist, and those caught on the wrong side of the gap will perpetually lag behind (Haythornthwaite, 2007).

Social Studies as Reflective Inquiry

In the famous teen comedy, *Ferris Bueller's Day Off*, those students remaining in school are subjected to the monotone droning of their teacher who attempts to discuss economic policy by lecturing and writing notes on a blackboard. That the producers chose to depict classroom boredom by having students sit through a history class is probably not a coincidence. The scene plays into the common stereotype of history as dull and lifeless with no relevance to students' lives. A study by VanSledright (1997) reinforces this notion. When asked why they should learn history, most students could not develop a clear answer. The majority of students relied on the old adage that unless one learns from the past, one is doomed to repeat it. The advent of high-stakes testing has also contributed to this stereotype by pressuring teachers to cater their instruction to the acquisition of seemingly disconnected facts (Journell, 2007a).

In a study of secondary students, Chiodo and Byford (2004) found that the way social studies was presented in the classroom influenced students' perceptions of social studies far more than the subject matter itself. Students described active learning, such as discussion, debate, and critical thinking as salient elements which made social studies enjoyable and challenging. Moreover, in a longitudinal study on intrinsic motivation, Gottfried, Fleming, and Gottfried (2001) found that as students progressed through adolescence, their motivation toward academics declined in all subjects except social studies. Students' motivation toward social studies showed no decline and, in some cases, actually increased. Finally, historical depictions annually make money at the box office, and research has shown that students enjoy watching Hollywood epics based on historical subjects (Marcus, 2007).

If research shows that content does not turn students away from social studies, yet students still perceive social studies as boring, there appears to be a problem with the way the message is presented, rather than the message itself. Lectures and textbooks are a static way of learning history, and modern students, who are exposed to more multimedia influences than students from any previous generation, need alternative sources of information to make history vibrant and relevant. Computer technology can give life to history and make students view the past in a different light. Tally and Goldenberg (2005) found that students overwhelmingly felt as if they learned more from their history curriculum when their classes were infused with technology, often altering their stances toward history in the process. The authors report that students "did not just say they liked using computers in their classes, but they also connected their use of computers to more active, interesting assignments, resources, and activities" (p. 7).

Here we find the true value of technology within social studies: the movement from recall to inquiry. Technology can aid in the development of constructivist learning environments in which students construct their own interpretations of history through a curriculum that is fluid, collaborative, and intrinsically engaging (Fosnot & Perry, 2005; Gergen, 1995; Richardson, 2003). However, placing students in front of a computer does not guarantee active learning. For example, sites like American Rhetoric and The History Channel contain audio and visual resources which may accentuate lectures, but they do not engage students with the curriculum on their own. Teachers can, however, use Internet resources to create environments in which students can interact with the curriculum through simulations, games, and inquiry-oriented tasks. If used properly, technology can also aid in the development of multiple perspectives, which supports a critical conception of democratic education that values diversity and tolerance (Doolittle & Hicks, 2003; Miller-Lane, Howard, & Halagao, 2007).

Resources for Inquiry

One of the frustrations inherent in studying history is that no matter how hard a person tries, he or she can never fully comprehend emotional aspects of history, such as the agony of being sold into slavery or the fear of sitting

in a trench only yards away from enemy combatants. Too often, social studies educators resign themselves to that reality by simply transforming history into a collection of facts and dates. Yet, for social studies to be taught as if it truly matters, teachers should try to make their students understand history in an emotional way by removing notions of present-ism and acknowledging the common ethical ground linking past and present (Barton & Levstik, 2004; Farr Darling, 2006; Wineburg, 2001).

Technology has the capability to develop historical empathy among students like no previous educational resource. Simulations, such as this one from the British Broadcasting Corporation (BBC) on Auschwitz, have the ability to place students within a particular time and place. By having students navigate through the various stations of Auschwitz, starting with prisoners transported from labor camps to their eventual demise in gas chambers, students can begin to empathize with those who lost their lives. Although students can never truly understand the suffering which occurred at these concentration camps, viewing objects they can identify with, such as hard, narrow bunk beds and barbed wire fences, can help students to associate events like the Holocaust with human emotions which move beyond facts and figures.

Another simulation from the BBC takes placing students within a historical event to another level. This World War I simulation places students within a three-dimensional trench on the Western front and allows students to navigate their way through the trench and look out over the area known as “no man’s land.” The screen acts as the students’ eyes, and directional keys allow students to maneuver from a first-person perspective. By alternating the screen from a bird’s eye view to a view from the trench, the activity could easily complement discussions on military strategy or living conditions of soldiers along the Western front.

The World War I simulation utilizes similar graphics and functions of many first-person videogames currently on the market, such as the popular Halo combat game. While educators should avoid the graphic violence and adult content often associated with modern videogames, they can still embrace the pedagogical benefits that computer games have to offer (Gee, 2003). Videogames allow for active learning by having students test theories, make decisions, and learn from their mistakes. By delving into an ideological world, students develop and hone habits of critical thinking in a medium which offers few repercussions for taking risks, unlike in the classroom when giving an incorrect answer can result in embarrassment or ridicule (Squire, 2006).

Take, for example, the Mummy Maker game. The game places the user into a context as the assistant to the chief embalmer and assigns the user the task of correctly preserving the body of a royal officer to ensure safe passage to the afterlife. The game forces students to make decisions regarding correct processes of mummification, many of which correlate to religious beliefs of ancient Egyptians. Students can make up to three mistakes before the game declares that the officer’s soul does not recognize his body and is vulnerable to demons from the underworld. Having students experiment by trial and error creates an environment more engaging than simply reading about mummification in a textbook.

A similar approach can be found in games which place students as military commanders who make decisions on the battlefield. By recreating some of the most famous battles in history and letting students determine the outcome based on strategic decisions, these games move well beyond noting the winning side and delve into *how* seemingly overmatched armies could vanquish their enemies. One can easily see the pedagogical value of having students understand the complexities of waging war, particularly during a time when the United States is engaged in continual armed conflict throughout the world.

The Internet can also provide students with experiences normally unavailable to them. For example, public museums serve a pedagogical function as a commentary about the representation of history, and a well constructed museum can initiate discussions of heritage and social justice (Trofanenko, 2006b). A fabulous example is the National Holocaust Museum in Washington DC; however, monetary and geographic restrictions often prevent students from visiting. While nothing can fully compare to seeing exhibits in person, the next best thing is to allow students to access online exhibits sponsored by museums. The Holocaust Museum website

provides students with resources on Jewish persecution, Nazi propaganda, and primary source evidence, including video testimony from Holocaust survivors.

Other public museums, such as the Anacostia Community Museum, which preserves African American culture and history, and the National Museum of the American Indian, provide artifacts that allow teachers to use technology as a way of promoting multiculturalism in their classrooms (Sleeter & Tettegah, 2002). These resources can be used as educational tools for students throughout the United States and can be particularly useful for predominantly homogeneous areas where diversity is often overlooked as a salient pedagogical goal (de Waal-Lucas, 2007). Moreover, famous sites throughout the world, such as the Louvre and the Taj Mahal, routinely offer virtual tours which can aid in narrowing the gap between local and global spheres (Myers, 2006).

The scope of computer-based technology is not limited to discussions of history and society; other disciplines within the social studies can benefit from the bountiful resources found on the Internet. Traditionally dull activities, such as learning states and capitals, can be made interactive and challenging through the use of online games, such as USA Travel Map. The game instructs students to place the individual states onto a blank map of the United States, and it charts the difference in miles between their placement and the actual location of the state. Having students strive to achieve better scores upon repeated attempts creates an environment considerably more active than coloring paper maps and labeling state capitals.

Xpeditions, sponsored by National Geographic, offers several interactive programs for students. For example, the World Viewer allows students to match areas of the world with various physical and cultural geographic features, such as surface temperature, population growth, religion, and language. Students can use this tool alongside the less flashy, but extremely informative CIA World Factbook, which provides detailed economic, governmental, and geographic information about every nation in the world. When used in conjunction, these sites allow students to recognize patterns involving the location of first and third world countries and the possible implications of a nation's geography on its economic prosperity and standard of living.

In addition, the Internet houses several resources for understanding domestic and international economics. Many sites, such as the U.S. National Debt Clock, provide visual depictions of U.S. spending and the national debt which students could visit on a daily or weekly basis in order to help them conceptualize the monumental task of trying to balance the federal budget. In a similar vein, EconEdLink offers several interactive tools designed to help students understand federal spending and related concepts, such as interest rates.

Implementing Resources into Practice

Although these resources present history in visually stimulating and engaging ways in isolation, many of these resources lack the context for students to develop meaningful understandings. In order to make sense of history, students must make connections among historical events and, ultimately, between historical events and modern issues (Grant, 2003). As Dewey (1909) states, "The ethical value of history teaching will be measured by the extent to which past events are made the means of understanding the present" (p. 36). When students fail to make these connections, history is reduced to a collection of dates and facts.

One way to incorporate digital resources into constructivist pedagogy is through the use of webquests. A webquest is an inquiry-oriented method in which teachers use technology to develop connections by posing relevant questions, having students perform a variety of tasks using the Internet, and providing students the opportunity to synthesize and analyze their own interpretations. Unfortunately, too many teachers view webquests as instructing students to type topics into a search engine and answer questions based on their results, a method reducing the Internet to a high-tech textbook. The focus of webquests should be on the required tasks, not looking for information on the Internet (Lombard, 2004). A well-constructed webquest creates an "engaging and complex backdrop" to otherwise static content by putting students in contact with quality resources and having them embark upon a process that requires active production of knowledge (Dodge, 2001, p. 8). While terminology varies, most scholars argue that effective web-quests contain five aspects: an introduction outlines

the activity, an overall task to be achieved, a process for students to follow, a method of evaluation, and a conclusion that accentuates the overall goal of the assignment (Dodge, 1995; Milson, 2002).

An example webquest I created about medieval weapons can be seen at Middle Ages. The webquest revolves around the invention of the trebuchet, but the greater pedagogical goal of the activity is to show students that scientific innovation occurred even during an era often associated with a general lack of sophistication and culture. By looking at various trebuchet designs and discovering firsthand through a simulation how difficult it was to operate such a weapon, students can gain a deeper appreciation of the ingenuity present during the Middle Ages. Having students watch President Reagan's famous address about the *Challenger* explosion links events that occurred centuries earlier to modern questions still debated today. The exercise shows students that technological innovations and the costs associated with them are reoccurring themes throughout history. Instead of a static lesson fixed within the Middle Ages, students can use these new interpretations to formulate opinions about the role technology will play in the 21st century.

Another way to use Internet resources is to have students construct their own activities. Although schools may not have available webspace for students to create their own websites, programs like Microsoft PowerPoint have the capability to insert pictures, hyper- links, videos, and music to create modified webquests or multimedia presentations. Power- Point and other tools, such as Windows Movie Maker, allow students to develop visual presentations to showcase individual events or historical themes, which Staley (2007) argues is necessary for students to expand their creativity and ways of interpreting the past. On a similar note, the use of graphic organizers and related programs, such as Inspiration, have been documented as useful tools for organizing dates and facts into larger historical themes (Boon, Burke, Fore, & Spencer, 2006), but these programs can also be used to create visuals that represent hierarchical relationships. An example of student work on feudalism shows how students use graphics to not only explain relationships but also give those relationships meaning.

Finally, teachers always hope engaging activities will lead to student discussions, a phenomenon central to a critical conception of social studies, but one that is diminishing in the wake of high-stakes testing (Parker, 2006). Virtual chat rooms and asynchronous discussion boards offer a unique perspective on classroom discussions. In a study of secondary history students using discussion boards, Larson (2003) found that electronic discussions increased participation among introverted students and students with language difficulties. While many students did express angst over the amount of writing involved in electronic discussions, many of the electronic posts reflected well thoughtout responses. Perhaps the greatest attribute of electronic discussions is that they can extend academic conversations beyond normal school hours. Since students regularly use instant messengers and message boards to socialize with friends, the expectation of maintaining a running dialogue as part of class requirements appears a reasonable goal for teachers to implement.

Social Studies as a Social Science

Wineburg (2001) argues that thinking historically means setting aside preconceived notions about the past in order to examine history in its original context. One way to accomplish this goal is to train students in processes of historical investigation and analysis, often through the use of primary sources. However, research on teaching practices suggests that teachers rarely utilize primary sources as part of their classroom instruction. Lee, Doolittle, and Hicks (2006) surveyed secondary history teachers and found that only 41 % use primary sources more than once a week in their classes. Moreover, 26% admitted they only use primary sources a few times during the school year. Of the teachers who do use primary sources, research suggests they view primary sources as supplements to their lectures and not as tools for historical analysis (Friedman, 2006b).

The Internet has increased access to previously unattainable primary sources, which Bolick (2006) argues has democratized the discipline of history to the point that all students can partake in acts of historical investigation. Using any search engine, one can easily access digital recreations of historical documents, which allow students to utilize documents in a non-linear fashion by using hypertext and search capabilities not found in print sources (Bolick, 2006; Lee, 2002). However, written documents only constitute a fraction of primary

sources available to teachers on the Internet. The American Memory collection housed by the Library of Congress maintains online galleries on various aspects of American history including artwork, artifacts, music, and digitized oral histories. Another site maintained by the Library of Congress, *Harper's Weekly*, contains a searchable database of political cartoons from the 18th and 19th centuries. In addition, the Oyez Project run by Northwestern University offers an extensive database of Supreme Court decisions as well as dissenting and concurring opinions, justices' voting records and biographical information, and virtual tours of the court. Teachers can use these collections to highlight conflicting narratives regarding the same historical event, reinforce the effects historical events have on popular culture and society, or show change over time by having students look at multiple sources from a constant institution.

Increased access to primary sources, however, does not ensure that teachers will use them effectively (Trofanenko, 2006a). Simply giving students primary sources to justify claims made in the classroom is a poor utilization of resources. Primary sources are designed to present multiple perspectives or show change over time, yet research on students' understanding of historical texts shows that students often view a single text as fully explaining the entirety of a historical event rather than as a snapshot of a much larger picture (Wineburg, 1991a; 1991b).

Another issue when dealing with primary sources is the language which is often archaic and hard for students to understand. In addition, historical texts often utilize a structure students are unfamiliar with and do not adapt to easily (Wineburg, 1991a). Digitized primary sources do not assuage these problems, and reading the *Federalist Papers* will be challenging for students regardless of what medium they choose. However, technology can be used to manipulate primary sources, so students can navigate through them with greater ease.

Mitchell (2007) describes a study in which she observed students trying to make sense of primary source material. When students came to a word they did not understand, they often just skipped the word, regardless of the importance the word may have had to the context underlying surrounding words and phrases. Consequently, students gained minimal appreciation for the sources. Then Mitchell provided students with digitized sources containing hyperlinks to definitions of challenging words and phrases. The students utilized the hyperlinks, took longer to read the sources, and seemed to gain a better understanding of the material. However, Mitchell did find the hyperlinks actually created *more* reading for the students, which they soon realized and rebelled against. Therefore, she suggests that teachers parse primary source documents prior to adding hyperlinks.

Using Mitchell's (2007) guidelines, I created a short example using the Preamble to the Constitution using the Preamble to the Constitution. For years, students have been required to memorize the Preamble using mnemonic exercises or through activities like Schoolhouse Rocks, which simply repeat the words ad nauseum. While these methods may infuse the words into students' memories, they do little to explain what the words actually mean. Words such as "tranquility" and "posterity" may prove difficult for students, and ignoring them drastically changes the meaning of the document. With the hyperlinked document, students can click on the words they do not understand and read the short accompanying definition. When taken together, the definitions create a comprehensive understanding of the goals set forth in the Constitution and can act as a starting point for further study.

Lastly, technology can aid projects of historical investigation by providing classrooms with unlimited storage capacity for archival documents. Hicks, Tlou, Lee, Parry, and Doolittle (2002) give the example of the Bland County Historical Archives operated by Rocky Gap High School in Virginia. Students collect artifacts and oral histories about the history of Bland County and subsequently upload them to an online archive containing a searchable database available to members of the community. Besides contributing to an ongoing project that provides a unique service to their local community, students at Rocky Gap High School are learning the tools and processes historians use to collect evidence. Clearly, such an activity accentuates the scientific nature of history and moves the curriculum beyond knowledge of salient dates and facts.

Social Studies as Citizenship Transmission

A common belief exists within educational circles that the primary function of public schooling is to perpetuate democratic values in order to produce citizens that can contribute to society (Dewey, 1916; Gutmann, 1987). However, scholars rarely agree on what information is necessary to function as a democratic citizen in the United States. In perhaps the leading work on civic knowledge in the United States, Delli Carpini and Keeter (1996) argue that all citizens should possess a basic understanding of three interconnected topics in order to competently live within our democratic society: democratic processes, current events, and politics. Social studies teachers can use technology in all three areas to engage students, promote student agency, and highlight political biases.

Technology and Democratic Processes

Few would argue that learning the intricacies of how American democracy works is a riveting topic, particularly for high school students too young to vote. However, technology can transform traditionally dull information into a format that engages students and increases their political efficacy (Forrest & Weseley, 2007). Take, for example, the concept of the Electoral College. Most students have a hard time grasping the idea that individuals do not directly vote for Presidential candidates, but rather electors chosen by states. Even more confusing is the idea that the total number of votes in a Presidential election means less than where those votes come from.

The Internet is full of interactive sites that can better explain complex concepts like the Electoral College. One example is 270towin, which allows students to look at elections throughout history and manipulate the electoral map to show the value specific states have on the outcome of elections when compared to others. Such an activity can springboard into conversations on media coverage and representation.ⁱⁱ Other sites offer maps, like this one from ESRI, and can visually explain how a state, such as Illinois, can be overwhelmingly Republican geographically, yet have the Democratic candidate still carry the state. Images have the ability to place information into a context students understand, often more effectively than reading about concepts like representation and population density.

A common criticism among political scientists, however, is that public education often teaches students about government without teaching the necessary skills to become active citizens themselves (Macedo, Alex-Assensoh, Berry, Brintnall, Campbell, Fraga et al., 2005). Technology is a natural resource for student agency, particularly considering ways that the Internet is changing how society, including government, operates (Crowe, 2006; Friedman, 2006a; Vanfossen, 2006). For example, most state and federal legislators maintain websites that include contact information. Gone are the days of writing letters to elected officials to petition for one's personal causes; electronic communication is how officials correspond with their constituents, and students need to be aware of how to find and utilize these resources.

Interest groups and non-governmental organizations also maintain websites students can access and join. Voluntary associations are often an overlooked aspect of democracy and one that has waned considerably over the past few decades (Putnam, 2000). Exposing students to these organizations may encourage students to become more active within their communities. Many of these groups also fight for global causes; therefore, student participation within these groups works to show how actions within students' local communities can impact a much larger sphere (Hicks et al., 2002).

Technology and Current Events

Research has shown that most Americans are woefully uninformed about current events (Delli Carpini & Keeter, 1996). Reading newspapers, both electronically and in print, has been found to increase levels of political awareness (Bennett, Rhine, & Flickinger, 2000). Many students may not have access to newspapers at home, and if they do, may not take the time to read anything beyond the major headlines. Teachers can expose their students to a variety of significant national and international newspapers via the Internet, many of which most likely contain deeper analysis than students' local newspapers. Teachers can then move into lessons on media bias by choosing a current event and looking at it through various liberal and conservative associated newspapers. For students to see the *New York Times* and the *Wall Street Journal* cover a single event in multiple

ways speaks volumes about the nature of media in the United States. The same can also be said for comparing stories using the websites of the major television news networks. Both newspaper and network sites also contain interactive content teachers can use to engage students.

Many students are also unaware of how the United States is portrayed internationally. The Internet provides teachers with the opportunity to compare news from American media outlets with media in nations throughout the world. While the potential American resentment found in foreign nations may surprise many American students, such lessons may lead into discussions of globalization, economic interdependence, and cultural tolerance (Merryfield, 2007). Further, a critical social studies curriculum encourages students to question American prominence in world affairs and actions of our elected leaders (Miller-Lane et al., 2007). Critically monitoring current events as part of the social studies curriculum can train students to take an active interest in American policies, both foreign and domestic.

Technology and Politics

Research has shown that Americans, particularly those under 25 years of age, distrust politics and seek to avoid political discussions at all costs (Hibbing & Theiss-Morse, 2002). Exposing young people to politics has the potential to change those attitudes, but teaching politics in public schools is often a futile endeavor since many students view politics as unimportant because they lack the ability to make themselves heard in the political arena. Moreover, the way teachers approach politics can actually contribute to students' feelings of political distrust. In a study of New York social studies teachers, Niemi and Niemi (2007) found that most teachers could not separate their own political beliefs from the information they gave their students. Many of these beliefs came across through derogatory methods such as name-calling, which highlighted the teachers' personal frustrations with the system. Such attitudes can often repel people away from politics entirely.

Therefore, a preferred method of teaching politics is to let students develop their own sense of political awareness, and technology can aid in that process of self-discovery. Discussions about liberal and conservative ideologies often present the two sides as polar opposites rather than as a continuum of political thought. However, online quizzes (e.g., political quiz) have students answer questions based on their personal beliefs and then assigns them a score corresponding to their ideology. This type of exercise conveys to students that people often contain a mixture of beliefs, and politicians, even from the same political party, rarely agree on every issue.

When covering elections, teachers should underscore the importance of making well-informed decisions. There are multiple Internet sites that provide insight on candidates. One of the more reliable is Project Vote Smart, which provides issue stances and voting records of candidates. Other sites (e.g., using a candidate calculator) have students answer questions based on their political beliefs and matches them to the candidates who closely align with those beliefs. What set this particular site apart from others in this vein are the issues hyper-linked to definitions explaining the issues in greater detail. Therefore, if students did not know about, for example, the Kyoto Protocol, they could read about the pros and cons before choosing an opinion. Even if students are too young to vote, teaching them the value of being politically informed will hopefully encourage them to seek unbiased information before casting votes as adults.

How to Increase Technology in Social Studies Education

That technology has not played a greater role in shaping social studies education is somewhat surprising considering the ubiquitous nature of the Internet. The examples given in this paper are readily available, easily accessible, and largely cost free. There is also considerable pressure from federal and state governments to infuse technology within classroom instruction, as technical proficiency is a goal repeated throughout No Child Left Behind (Culp, Honey, & Mandinach, 2005). Yet technology remains merely an additive to existing classroom practice rather than a revolutionizing force that can transform social studies into a discipline of critical thinking and exploration (DeWitt, 2007). Part of the problem stems from teachers who either hold adverse attitudes toward technology or lack the skills necessary to implement technological change in their

classrooms. Both issues suggest that teacher education must play a critical role in preparing future social studies teachers to utilize technology within their classroom instruction.

The question, then, becomes one of habits, which Dewey (1938) describes as “every experience enacted and undergone modifies the one who acts or undergoes, while this modification affects, whether we wish it or not, the quality of subsequent experiences” (p. 35). Most students enter teacher education programs having been subjected to traditional social studies instruction (Ross, 2000) defined by lectures and textbooks. These experiences have instilled habits within these future teachers on how social studies should be taught. Dewey (1922/1988) reminds us that habits often become ingrained within the character of individuals and are extremely hard to change. It is the responsibility of teacher educators to break these habits by instilling new ideas about social studies to future teachers through repeated practical applications of classroom practice.

Most teacher education programs require courses on instructional technology and design as part of the curriculum. These courses usually involve students exhibiting proficiency on a variety of technical benchmarks that often result in a polished product, such as a webquest or video presentation. However, these skills do not always transfer to students’ methods courses. When skills are performed in isolation under the guise of a “technology” course, it is hard for students to see the practical applicability of those skills for classroom practice. Social studies methods courses should reinforce these skills by requiring students to make content-specific lessons that utilize technology. However, simply writing in a lesson plan that students are to perform a webquest as part of a plan of study does not reinforce previously learned habits. Only by using digital resources themselves on a regular basis, either to create instructional materials or simulate instructional outcomes, will teachers begin to perceive the internet as a tool equal to textbooks and teaching manuals.

One may question the need to constantly reinforce technical skills to current and future cohorts of education students since they will have matriculated through an era defined by the Internet. However, proficiency with the commercial web does not always translate to success in navigating the academic web (Tally, 2007). In a study of secondary social studies students, Scott and O’Sullivan (2000) found that only 25% of students used the Internet daily, and only 42% knew how to use the Internet for academic purposes, most of which was done through using commercial search engines. The students also reported they often could not tell substantive versus unreliable websites when doing research online. In other words, future teachers may think they are adept at using technology because they spend recreational time on the Internet, but when it comes to using technology as a tool for inquiry, they may well be venturing into uncharted territory.

Finally, teacher education programs should cater their use of technology to practical applications that students “will encounter in the field,” as Tettegah (2005) writes:

If technologies, as tools, are to become an important aspect of K-12 and higher education, we need to provide examples that can be applied to practice and theory that mimic real situations that occur in the classroom, and not hypothetical situations. (p. 386)

Technological advancements may capture the imaginations of teacher educators, but they should not dwell on cutting edge innovations at the expense of less flashy tools readily available to most public schools. For example, many commercial web-making software programs contain tools which allow users to develop visually stimulating projects, but these programs also come with considerable cost. Students can be exposed to these programs, but only after they have developed mastery of open-source software, such as KompoZer or OpenOffice, which they can use anywhere they find employment. In order for students to develop the habits necessary to integrate technology in meaningful ways, social studies teacher educators need to provide multiple opportunities for students to acquire and practice skills that can be directly applied to their future classrooms.

Conclusion

The resources given in this paper represent a fraction of the ways the Internet and technologies have the potential to transform social studies into a vibrant discipline. However, it is important to remember technology

acts only as a tool and not a panacea. Social studies educators must continue to revolt against traditional social studies instruction and push for a critical pedagogy that emphasizes historical inquiry and student discovery. Technology can assist in this transformation by providing educators with resources which place students within the curriculum like never before. As society grows accustomed to the ever-evolving nature of technology, it is easy to forget that the Internet, as an educational tool, has only gained prominence over the past two decades. It is safe to say that the Internet revolution will continue well into the 21st century, and we have yet to experience everything technology has to offer public education.

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Notes:

- i For a detailed analysis of the digital divide and its impact on public education, refer to Journell (2007b)
- ii For an example of how 270twin can lead to discussions about democratic processes, go to the site and select "2004 Actual Results" as the map's starting view, and then change Iowa and Ohio from Republican to Democrat and Minnesota from Democrat to Republican and look at the total number of electoral votes.

Websites Listed:

270twin

<http://www.270twin.com>

American Memory

<http://memory.loc.gov/ammem/index.html>

American Rhetoric

<http://www.americanrhetoric.com/>

Anacostia Community Museum

<http://anacostia.si.edu/>

Auschwitz

http://www.bbc.co.uk/history/worldwars/genocide/launch_ani_auschwitz_map.shtml

Bland County Historical Archives

<http://www.bland.k12.va.us/bland/rocky/gap.html>

British Broadcasting Corporation (BBC)

<http://www.bbc.co.uk/history/>

Candidate Calculator

http://www.vajoe.com/candidate_calculator.html

CIA World Factbook

<https://www.cia.gov/library/publications/the-world-factbook/>

EconEdLink

<http://www.econedlink.org/cyberteach/tools.cfm>

Electoral College 270toWin

<http://www.270towin.com/>

Example Using Preamble to the Constitution

<https://netfiles.uiuc.edu/ajourne2/www/psource/index.html?uniq=-5erxw1>

Famous Battles

http://www.bbc.co.uk/history/british/empire_seapower/launch_gms_battle_waterloo.shtml

Harper's Weekly

<http://loc.harpweek.com/default.asp>

Holocaust Museum

<http://www.ushmm.org/>

Inspiration

<http://inspiration.com/>

Interest Rates

<http://www.econedlink.org/interactives/interest.html>

Kompozer

<http://www.kompozer.net/>

Louvre

http://www.louvre.fr/llv/musee/visite_virtuelle.jsp?bmLocale=en

Middle Ages

<https://netfiles.uiuc.edu/ajourne2/www/webquest/index.html>

Mummy Maker

http://www.bbc.co.uk/history/ancient/egyptians/launch_gms_mummy_maker.shtml

National Museum of the American Indian

<http://www.nmai.si.edu/>

New York Times

<http://www.nytimes.com/>

OpenOffice

<http://www.openoffice.org/>

Oyez Project

<http://www.oyez.org/>

Political Quiz

<http://franz.org/quiz.htm>

Project Vote Smart

<http://www.vote-smart.org/>

Schoolhouse Rocks

http://www.youtube.com/watch?v=Q_TXJRZ4CFc

Student Work on Feudalism

<https://netfiles.uiuc.edu/ajourne2/www/inspiration.pdf>

Taj Mahal

http://www.taj-mahal.net/augEng/main_screen.htm

The History Channel

<http://www.history.com/>

U.S. National Debt Clock

http://www.babylontoday.com/national_debt_clock.htm

USA Travel Map

http://www.sheppardsoftware.com/USA_Geography/USA_G2_1280_800.html

Wall Street Journal

<http://online.wsj.com/public/us>

Worldviewer

<http://www.nationalgeographic.com/xpeditions/hall/1/x3/xpedition3b.html>

World War I

http://www.bbc.co.uk/history/worldwars/wwone/launch_vt_wwone_trench.shtml

Xpeditions

<http://www.nationalgeographic.com/xpeditions/hall/>