USING TECHNOLOGY SUPPORTED STRATEGIES TO IMPROVE PRE-SERVICE TEACHER PREPARATION IN SOCIAL STUDIES

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ABSTRACT
The National Assessment of Educational Progress shows that many US students are deficient in core knowledge in geography, civics and current events. In this paper, a professor of social studies methods describes an action research project developed to assess and improve teacher candidates’ knowledge in these areas. The article explains how data were collected, analyzed and interpreted to yield three concrete, easy to implement teaching strategies that substantially improved students’ knowledge in geography, civics and current events. These strategies can be used in other subject areas as well. The research method and the resulting three strategies are described in detail.

INTRODUCTION
Twenty-first century social studies for elementary students encompasses evidence based information about history, geography, citizenship, economics, anthropology and sociology. Additionally, there is a strong focus on conceptual understandings, habits of mind and effective data gathering and analysis skills for social studies content (National Council for the Social Studies, 2010). Higher standards and expectations for student learning are a global concern and a direct result of heightened awareness of the need for new skills, knowledge and perspectives in this century. Evidence lies in the collaborative efforts of the thirty-four member nations of the Organization for Economic Co-operation and Development (Organization for Economic Co-operation and Development [OECD], 2012). Along with an additional thirty nations, they participate in PISA; the Programme for International Student Assessment (OECD, 2012). Working together, they create and
administer international assessments, and also disseminate expertise in teaching and learning to benefit countries around the world.

In the United States, national standards for social studies are joined by newly configured state standards (New York State Department of Education, 2012) that raise the bar in terms of required content and skills that students need to master. Students in many nations must be able to assimilate comprehensive knowledge about their own country and make valid comparisons among other nations, appreciate intercultural understandings and recognize the political, economic, environmental and technological connections that inextricably link nations today. Governments recognize the pace of change today and are working to upgrade learning to meet 21st century needs.

More complex expectations reflect the differences between the 20th and 21st centuries. Greater and more intricate economic and political global interactions, necessary collaborations to preserve the environment and delicate negotiations to work for peace as nations undergo political and social upheaval characterize this century. The increasingly rapid growth and reliance on technology is yet another 21st century hallmark. Technology accelerates knowledge acquisition and new knowledge accelerates societal change. Teacher preparation faculty need to be acutely aware of changes and swiftly modify courses to effectively prepare teachers for 21st century classrooms.

Experience with my students in teacher preparation demonstrated critical needs that required immediate attention. This article describes my action research and details how I assessed my students’ needs and abilities, and used that information to modify my instruction. This process resulted in three strategies for course modification that any instructor of social studies or history methods courses can effectively implement to improve instruction and better prepare pre-service teachers for careers in the classroom.

**The Students**

Each academic year, I teach between six and seven classes of the Social Studies Methods for Elementary Teachers course. My students are college seniors at a unit of a state university that rates high in a variety of national rankings of higher education. Most students are twenty-one year old females, with two to three males of the same age in each course section. There are usually three to four non-traditional students, mostly parents of school-age children. Occasionally, an international student is in the mix, but that has occurred in only two of eight semesters. Nearly all students, except the international ones, are from blue collar or professional middle class families. This class plus one in literacy are the last before student teaching.

These students are tech savvy. They Twitter, Tweet, text, use Diigo, Facebook and email, for starters. They access any subject or site for our class in a matter of seconds on their cell phones, tablets or laptops. Yet despite their technological prowess, it’s clear that students don’t routinely use it to enhance learning outside of class.
Assessing the Problem at Hand

The first day of class in my pre-service social studies methods courses always begins with two self-tests: one in geography and one in current events. For the geography portion, students receive a two-sided page that contains unlabelled political maps; one of the United States and one of the Mideast. They have between twelve and fifteen minutes, working individually, to label the United States map and any ten nations in the Mideast. At the end of fifteen minutes, students put aside their maps and prepare for the current events self-test by numbering a paper from one to eleven. They are instructed to accurately identify the name or event listed next to each number on the Smart board or PowerPoint slide:

1. President of the United States
2. Vice President
3. Secretary of State
4. Secretary of the Treasury
5. Secretary of Education
6. United States Attorney General
7. One member of the Supreme Court
8. One current event this week describing local or state news
9. One current event describing national news
10. One current event describing a global issue in the news
11. The name of one leader of a foreign nation.

Students work individually and have ten minutes to determine the answers. I then bring up identical maps from www.eduplace.com. After reviewing the maps, I solicit responses to the current events quiz and write them on the Smart board or type them into a PowerPoint slide. Students’ groans are audible when I ask for hands up in response to the number of states they correctly identified. “How many have ten states correct?...Fifteen?”...and on to fifty. The results are similar as we go through responses to the current events questions. Students find the experience a sobering one.

The Data

Data from the self-tests in geography and current events reported in this paper is aggregate data from eight consecutive semesters. Enrolled student numbers varied from a low of seventeen (one semester only) to a high of thirty, with twenty-four to twenty-six as the usual class enrollment. In each semester, every student took the map and current events self tests on the first day of class. Identical maps and questions were used each semester. While students received no grade for these tests, I tabulated correct responses on a checklist. As we discussed results, I went from group to group checking papers to record the data. Since very few students were able to complete either the maps or the current events questions, I was able to gather results quickly and accurately.

Scores on self tests in geography and current events have been remarkably consistent over eight semesters. My data reveal that on average, only one in fifteen can complete a map of the United States accurately and two in a class of up to thirty students can identify and locate more than one nation in the Mideast. While one hundred percent of students during
the same eight semesters identified the current President of the United States, only half could name the Vice President. One in ten knew the name of the Secretary of State, and one in up to thirty could pinpoint one member of the Supreme Court. None could identify the Secretaries of the Treasury or Education, despite the fact that the latter has influence over the students’ chosen profession. None were able to identify the Attorney General of the United States, despite his high profile in the media during the last four semesters. Only two in thirty could name one world leader during four years of crises that saw many names in headlines.

Student response to the self tests remains consistent, too. Students are surprised at their lack of knowledge and are quick to realize they have a steep learning curve around subjects they will teach the following semester. Most rise to the challenge enthusiastically by participating in class strategies that are discussed later in this article.

**DISCUSSION**

While the results shared here are over a four year period from students in a unit of a New York State university, they reflect the condition of learning in geography and civics nationwide. NAEP scores in these subjects from 2010, the most recent administration of exams in these areas, demonstrate that in geography, twenty-one percent of fourth graders, twenty-seven percent of eighth graders and twenty percent of twelfth graders performed at or above the proficient level (National Assessment of Education Progress, 2010). That means, of course, that seventy-nine, seventy-three and eighty percent of students in the tested grade levels performed below the proficient level.

Civics results are equally disappointing. Twenty-seven percent of American fourth graders, twenty-two percent of eighth graders and twenty-four percent of twelfth graders performed at the proficient level (National Assessment of Educational Progress, 2010). These are not encouraging results for any educational stakeholders.

Further, these diminished returns are part of a clear trend since 1988. A National Geographic sponsored survey (Roper Center for Public Opinion Research, 1990) of ten nations; Canada, France, Italy, Japan, Mexico, Sweden, UK, USA, USSR and West Germany (note date of survey: Germany was not yet unified and the USSR had not yet “fallen”), demonstrated that American 18-24 year olds consistently lagged behind their international counterparts in basic geographic knowledge which included civic and cultural information. During the twenty-five years since the survey’s release, NAEP reports illustrate that learning has not improved in this arena, despite the highest per pupil expenditure for education in any industrialized nation (OECD, 2012).

**MEETING THE CHALLENGE**

My data and the research above identify a clear need to address deficits in geography, current events and civics before pre-service candidates enter elementary classrooms. The critical lack of knowledge in these topics required a deeper focus in an already crowded
pre-service curriculum. I created several simple and integrative strategies to this end that made an appreciable difference for my students. Post-test achievement in geography and current events, discussed later in this paper, was significantly higher than pre-test results after the implementation of these three strategies.

RESEQUENCING CONTENT
The first strategy was simply to move the topic of current events and media bias (an integral part of current events) to the second class of the semester. Pre-test results plainly showed that students were not aware of, or engaging with current events on a regular basis. Introducing this topic early in the semester created awareness and positioned students to incorporate new knowledge and perspectives into class activities, as appropriate, throughout the semester.

Resequencing this topic required presenting more context and content than would have been necessary later in the semester, when students had already practiced methods historians use to identify viable evidence. Integrating current events with history, anthropology and sociology by making comparisons between the past and present, helped to make up time.

Students learned why children need to know about local, state, national and global issues in the news. Simply put, they are shaped by these issues and as adults, will be able to influence some events. Creating interest in the world around them and awareness of the events and forces that shape them is critical to their growth as citizens (Parker, 2009).

Many students had questions about what was appropriate at different elementary levels and how much time could be spent on current events. By collaborating with classroom teachers and my colleagues with school-age children, we discussed what works for students and parents in elementary schools. We established useful current events categories, and clarified types of events which would not be considered age appropriate for elementary grades. This provided clear guidelines for students to follow in choosing new events for classroom discussion. We also addressed the issue of what to do when students bring up topics they heard or read about that are not appropriate.

Discussion about integrating appropriate current events into reading and science class time during student teaching, helped students to see how these issues could be taught without infringing on state mandates for reading.

During sessions on media bias, sharing less biased news media like National Public Radio, British Broadcasting Corporation and CNN, while contrasting them to outlets like Fox News, helped students to see the differences in perspectives and to be aware of them. Most found it easier to focus on critical issues when they used on-line sources that weren't one-sided. Using on-line media broadcasts in addition to text sections of each site, allowed students to see and hear the differences in presentation; including tone and emphasis to convey content. The use of technology was invaluable in developing the current events and
media bias segment. We were able to access a variety of news media on-line to follow critical stories, compare approaches to them and use archives to trace earlier reporting on stories that remained in the news throughout the semester.

**Adding Current Events and Technology to Every Class Session**
The second strategy was to incorporate current events and technology to enhance it into each class session. Students were alerted to the fact that a ten minute current events segment would be part of each session. Student pairs had to share an issue: local, state, national or global. The issue had to be appropriate for elementary grades and meaningful to young learners. Students were asked, “What’s in the news that we should know about today?” A timer was set to keep limits, a US, world map and Google earth were opened and ready to be brought up on screen, while student pairs used white boards to hold up their topic. A thumbs up or down vote signaled the appropriateness of each topic, and which would be discussed in the remaining time. The event was located on a map, and the rationale for its choice and content were shared by students. This produced a rapid-fire, game-like approach, as the ten minute segment was timed and had to be a learning experience. I began with, “Whiteboards ready, set, hold them up!” Students decided to do this in a wave, as they would at a stadium. After all twelve or thirteen boards were displayed, I walked rapidly next to each and signaled a thumbs up or down for appropriateness of topic. Students often had the same topic, so voting (also thumbs up or down) for the topic discussed was usually easily done. A volunteer pair articulated the reason why the topic was appropriate or not, and peers provided approval or disapproval with a “yes” or “no” written on the whiteboard. Other volunteers with the same topic briefly conveyed the main idea of the article. Students looked forward to this segment in each class.

**Integrating Technology into Student Lesson Plans**
During the third session, I modeled how to use a current event in a brief teaching segment for an elementary class. Students charted the steps they saw, as we would discuss their contribution to the brief lesson; and use them as a guide for an upcoming lesson plan on current events that students would develop. They noted the following steps:

1. identify the topic
2. introduce vocabulary
3. identify the location of the event using an on-line geography resource
4. show a brief broadcast clip, video or photos if available
5. read pertinent information to young children, chart and discuss it
6. distribute copies or excerpts to older students, have them engage in close reading to identify main ideas, discuss them, why the event is an important one, if they should act on it and how.

One topic I used with the format above was the aftermath of the 2011 tsunami in Japan. The goal was to show the depth and scope of the damage and the tremendous need of
survivors. Some of the major news outlets broadcast a split screen, before and after photo montage. It was both surreal and wrenching to watch. In one half of the screen was a busy town and huge nuclear reactor. On the other half of the screen, it looked like an eraser had removed all but the power plant. Even the debris was sparse in comparison to the before photos. Students watched in silence as the split screen photos showed the area in quadrants. They struggled to find words for the level of devastation, and to imagine the power of the tsunami that caused it. When discussion began, students quickly noted the role of technology in portraying the disaster. They concluded that no text could describe what they saw as well as the photos themselves. The power of technology was not lost on these pre-service teachers, and discussion ensued about how to effectively integrate technology as they planned lessons.

Students are required to write a series of lesson plans during the semester and one focused on an important current event students chose themselves. Volunteers shared their lesson introductions and used video, on-line broadcast clips and relevant on-line sites to engage students’ interest. One excellent student example focused on global warming and its effects on polar bears. The lesson introduction began with a headline on the Smart board and segued into a two minute video from The Discovery Channel’s website that showed time lapse photography of melting ice in the Arctic; and ended with a polar bear on an ice floe. It was dramatic, engaging and essentially summarized the article prepared by the student; who excerpted information from National Geographic’s website and rewrote it for fourth graders. Having seen the video, the pre-service teachers were anxious to read the article and felt fourth graders would have a similar reaction.

**Using Technology to Link Current and Historic Events**

Sometimes current events meshed with topics students were learning about in class. Government overthrows during the Arab Spring that began in 2010 helped to provide perspective on the American Revolution, which is a major topic in American elementary social studies. The devastating 2011 tsunami and nuclear meltdown in Japan brought the nation’s geography into focus, as well as its political and economic policies with regard to nuclear power. In the 2012 semester, tons of radioactive debris from the Japanese disaster reached the shores of Oregon and Washington states. This provided learning experiences in environmental challenges and the need for international cooperation to solve them. The 2012 American Presidential election complemented our sessions on U.S. government and media bias. Students were able to compare and contrast American elections with those going on abroad, and they learned to use on-line resources like www.factcheck.org to discriminate between fact and hype during the campaign.

Well before mid-semester, volunteers were taking over my role as moderator in the current events segments, asking what’s in the news, focusing discussion and using maps and other on-line resources. When tornadoes destroyed an entire town in Oklahoma in 2013, we discussed how this issue might be taught in an elementary school and considered how effective citizens react to such events.
As students learned about issues around Colonial America and the American Revolution, they were linked to current issues in the news like women’s rights, justice, equality and representative government. Connecting current events to those in history helped pre-service teachers realize that current events are today’s history and that we all live history. Using technology by visiting news media and other pertinent websites brought the study of history and current events to life for students; and even made some converts among students who began the semester dreading social studies methods.

**THE CONSISTENT USE OF TECHNOLOGY FOR TEACHING AND LEARNING**

The third strategy, which is already evident, is the use of technology for teaching and learning in each class session. In addition to carefully and meaningfully integrating social studies content areas, the *consistent* use of technology as a teaching and learning tool in each class proved indispensable to student achievement. Demonstrations and practice with interactive web resources for learning geography, current events, civics and history engaged students in ways none of us anticipated. Students were encouraged to explore online sites beyond those used in class. They did this with enthusiasm and found sites that were new to me. While we used maps or Google earth in class, students needed to put time in on their own to learn the United States and Mideast maps. They favored websites that were interactive, colorful, and used click and drag formats with light or sound that provided immediate feedback. By using these and other interactive sites, they also experienced the power of gaming as a means to learning. They reported high engagement with such websites and vowed to use them in their own classes.

Two of many sites that were demonstrated for students and with which they practiced were [www.nationalgeographic.com](http://www.nationalgeographic.com) and [www.sporcle.com](http://www.sporcle.com). Both have colorful, interactive geography games and more. National Geographic’s website offers a host of high quality history and anthropology photos, videos, and texts in addition to world class maps. Another useful site with maps, games and global information is [www.un.org](http://www.un.org), the United Nations’ website. This site is also home to vital statistics about every nation that older students find helpful as they learn about other countries.

Satellite and street level views of many places in the United States and around the world are available at [www.googleearth.com](http://www.googleearth.com). This site also features three dimensional tours of iconic global landmarks like the Coliseum in Rome, skyscrapers, palaces and sports stadiums. A newer feature is a look at galaxies in space; an innovative hook for engaging learners.

Students agreed that Google earth and National Geographic’s websites were excellent teaching tools for much more than geography. Their expertise in using these and other educational websites will serve them well in student teaching.

Sharing the use of credible media sources like [www.bbc.com](http://www.bbc.com), [www.npr.org](http://www.npr.org), [www.pbs.org](http://www.pbs.org), [www.cnn.com](http://www.cnn.com), and [www.timeforkids.com](http://www.timeforkids.com), made these sites classroom defaults that students routinely used to share a news item, showcase delivery of the news, or share
another social studies topic. Students found photos, video, broadcasts and text at these sites that were useful for elementary lessons. They also explored other useful teaching sites like www.smithsonian.org, www.edutopia.com and www.pbskids.org for ideas, articles, online exhibitions and other materials to enhance teaching and learning.

CONCLUSION
By the end of each semester during which the three strategies were used, ninety-seven to ninety-eight percent of students were able to accurately complete a map of the United States and accurately identify ten Mideast nations in the news. Ninety-three to ninety-four percent successfully identified current events topics suitable for elementary students, and created viable strategies for using them. While these are not offered as empirical findings, but rather as contextual ones; focusing on students’ needs by rearranging teaching sequences, carefully integrating areas of need with other required content, consistently building required knowledge and skills in them across the semester, and infusing technology throughout each topic, are powerful strategies that can improve pre-service teacher preparation in social studies.

REFERENCES


Using Technology Supported Strategies
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