

## In this Issue: Technology Integration

**This issue explores how teachers can use technology to bring primary sources into their classrooms to enhance learning.**

Definitions of technology integration have shifted from merely increasing technological capacity and online access in schools to embedding technology throughout the curriculum "to enable students to approach problem solving using a range of thinking skills and learning styles" (Brooks-Young 2002). Teachers need professional development, content resources and technical support to effectively integrate technology into the curriculum.

Successful technology integration increases the learning potential of students by providing new ways to communicate and access ideas and information. Digitized primary sources, which represent history in its raw form, give students access to materials formerly available for examination by only a handful of scholars. Combining technology with appropriate pedagogical approaches allows teachers to spark students' interest and guide students toward essential learning through analysis and inquiry with primary sources.

### Reference

Brooks-Young, S. (2002). *Making Technology Standards Work for You – A Guide for School Administrators*. Eugene, OR: ISTE.

## Contents

<b>Feature Article</b>	Page 2
<b>Research &amp; Current Thinking</b>	Page 4
<b>Learning Activity - Elementary Level</b>	Page 5
<b>Learning Activity - Secondary Level</b>	Page 6
<b>Teacher Spotlight</b>	Page 7

## Teaching with Primary Sources

The Library of Congress Teaching with Primary Sources (TPS) Program works with universities and other educational organizations to offer professional development that helps teachers use the Library's digitized primary sources to deliver effective instruction. The TPS Newsletter provides information and materials that support this goal.

For more information about Teaching with Primary Sources or to identify a TPS consortium member in an area near you, please visit the web site at <http://www.loc.gov/teachers/tps>.

## Technology Integration: Linking the Learner to Learning

by Peggy O'Neill-Jones and Michelle Pearson

Teaching with primary sources is one way to enhance student learning using technology. By their nature, primary sources—the raw materials of history, such as original manuscripts, photographs, maps, and recordings—foster literacy and content knowledge. They support development of 21<sup>st</sup> Century skills, helping students build the capacity to solve problems in a constantly changing world, communicate and collaborate in a global environment, and continuously learn using various forms of media and in multiple venues.

Through technology, students and teachers have instant access to millions of digitized primary sources that represent human thought and achievement across time and geography. These are available through a number of distribution channels in a variety of formats, including manuscripts, images, audio and film. Thus, digitized primary sources are both instructionally ideal and technologically ready for integration into classroom teaching.

Technology integration blends pedagogy, content, and technology (Swan 2008). Effective technology integration requires teachers to make purposeful pedagogical decisions during the instructional design process. When designing instruction, teachers must make choices that support learning goals, objectives, and assessment outcomes. They consider what technology or blend of technologies will help students have a successful learning experience.

### Technology Integration: An Example

Imagine a middle-school history teacher planning a unit about the December 7, 1941 attack on Pearl Harbor and its immediate aftermath. While the overall learning experience will have several objectives and activities, the goal is for students to develop an understanding of why the bombing of Pearl Harbor was a turning point for the United States entering World War II (Linoff, Welsh and Williams 2009).

For the unit's introductory activity, the teacher considers facilitating a class discussion to compare and contrast two digitized primary sources: a photograph of the wreckage of the *USS Arizona* and another of the *USS West Virginia* aflame. Since students are familiar with the process of analyzing primary sources, she decides to create a *Wiki* for them to individually complete this activity and then collectively synthesize their observations.

Next, the teacher thinks about ways to help students understand the geography of Pearl Harbor in Oahu, Hawaii, and how the attack unfolded. Students could view a detailed map of Pearl Harbor in textbooks, but the teacher wants them to identify the U.S. ships' locations and trace the Japanese flight path. She develops an activity in which students will first view *Remembering Pearl Harbor: Multimedia Map and Timeline* (National Geographic Society, 2001), then use *Google Earth* to plot the positions of the ships and planes and create their own interactive maps.

**Pearl Harbor, Hawaii. USS West Virginia aflame.** Disregarding the dangerous possibilities of explosions, United States sailors man their boats at the side of the burning battleship, USS West Virginia, to better fight the flames started by Japanese torpedoes and bombs. Note the national colors flying against the smoke-blackened sky. (1941) *Library of Congress. Prints and Photographs.*



Assigned readings, a documentary film and individual research throughout the unit will provide students with the historical context for the attack on Pearl Harbor; however, the teacher also wants them to consider the event itself from an individual's perspective. She considers having students write a diary entry of a seaman stationed on one of the ships during the attacks in which they incorporate historical facts into descriptions of imagined experiences of individual sailors. She knows, however, that many students have difficulty sharing their own work and providing feedback to others when face to face in class. To address this, the teacher plans to invite students to use a *blog* for writing diary entries and posting comments.

Students will develop research questions about the Pearl Harbor attack and its aftermath based on their own curiosity and interests. The teacher prepares a list of online resources and library databases for students' use in gathering evidence to support responses. For example, a student might research reactions of the American public to news of the bombing. To conduct research, this student could access more than twelve hours of audio recordings capturing 200 individuals' opinions using the Library of Congress digitized collection, *After the Day of Infamy: "Man-on-the-Street" Interviews Following the Attack on Pearl Harbor*.

### Current Information and Communication Technologies (ICT)

While not absolutely essential to 21st century learning, technology greatly enhances the acquisition of these skills. (American Association of School Librarians, 2007; Partnership for 21st Century Skills, 2008). Pedagogically-sound activities and assessments can be purposefully integrated with ICT to leverage the type of thinking that primary sources cultivate, encourage new and emerging literacies, and promote inquiry and 21<sup>st</sup> century learning skills. The following table describes ways in which some types of technology can contribute to the learning process:

Technology	Contributions to the Learning Process <sup>1</sup>
Wiki <sup>2</sup>	<ul style="list-style-type: none"> <li>• Use the writing process and technology skills to gather sources to display perspective, points of view, misconceptions and conflicting information.</li> <li>• Collaborate with others to broaden and deepen understanding.</li> <li>• Use collaborative technology to communicate and display new understandings in ways that others can view, use, and assess.</li> <li>• Participate and collaborate as an intellectual network of learners. Connect the learning to community issues. Be open and responsive to new and diverse perspectives.</li> <li>• Reflect on the learning.</li> </ul>
Blog	<ul style="list-style-type: none"> <li>• Use the writing process to articulate thoughts and ideas and express new understandings.</li> <li>• Communicate and display new understandings in ways that others can view, use, and assess.</li> <li>• Reflect on the learning.</li> </ul>
Information/ Library Database, Online Resource	<ul style="list-style-type: none"> <li>• Use information searching processes to seek and find additional resources.</li> <li>• Understand the ethical and legal issues surrounding the access and use of information.</li> </ul>
Interactive Map	<ul style="list-style-type: none"> <li>• Use technology, information, and visual literacy skills to make sense of gathered information.</li> <li>• Identify and ask questions that clarify various points of view and lead to better solutions.</li> </ul>

The descriptions are drawn from the AASL *Standards for the 21<sup>st</sup>-Century Learner* and the Partnership for 21st Century Skills *21<sup>st</sup> Century Skills and Social Studies Map*.

<sup>2</sup>Technology-integration wiki, blog and interactive map examples developed by TPS-Metropolitan State College of Denver staff members: Eric Brown, Taylor Kendal, Keith Patterson, Diane Watkins, and Todd Wolfe.

### Conclusion

Technology integration provides excellent opportunities for learners to gain and express knowledge using digitized primary sources. When carefully integrated during instructional design, technology and primary sources together can support learning goals while building students' critical thinking and other 21<sup>st</sup> century skills.

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### References

AASL Standards for the 21st-Century Learner (2006). Chicago, Illinois: American Library Association. Available: <http://www.ala.org/ala/mgrps/divs/aasl/guidelinesandstandards/learningstandards/standards.cfm>

Linoff, L., Welsh, T., & Williams, K. (2009). Pearl Harbor Annotated Resource Set. Teaching with Primary Sources-Mountain Plains Regional Center. Available: <http://www.mscedu/tpsmountainplains/region/arizona.shtml>

National Geographic Society (2001). Remembering Pearl Harbor: Multimedia Map and Timeline. Available: <http://plasma.nationalgeographic.com/pearlharbor/>

21st Century Skills and Social Studies Map (2008). Tucson, Arizona: Partnership for 21st Century Skills. Available: <http://www.21stcenturyskills.org>

Swan, K. L. (2008, June). Evaluating alignment of technology and primary source use within a history classroom. CITE Journal. Available: <http://www.citejournal.org/vol8/iss2/currentpractice/article1.cfm>

## Research and Current Thinking

For each issue, TPS partners submit summaries of and links to online resources—articles, research reports, Web sites, and white papers—that provide research and current thinking relating to the theme. This Research & Current Thinking focuses on technology integration.

**Evaluating Alignment of Technology and Primary Source Use Within a History Classroom** (Swan, K. & Locascio, D., 2008) Researchers in the social studies have encouraged classroom use of primary sources as support for historical inquiry. The authors note, "Although primary sources have become accessible via the Internet, simply using digital primary sources does not automatically translate into historical thinking or technology best practice. Consequently, an evaluation was constructed to gauge the fidelity of primary source use according to three domains, curriculum content, instructional processes and student products or outcomes."



*Grammar school children gathered around a table doing woodworking projects while teachers watch nearby in a classroom. Library of Congress. Photographs from the Chicago Daily News, 1902-1933. American Memory.*

**Research: Fostering Historical Thinking with Digitized Primary Sources** (Tally, B. & Goldenberg, L., 2005) This study examined middle and high school student performance on an online historical thinking assessment task. After teachers received training in the use of digital historical archives, students engaged in historical thinking behaviors in response to an open-ended document analysis exercise. Challenges faced in developing students' historical thinking around visual documents are discussed.

**Pursuing E-Opportunities in the History Classroom** (Tebeau, M. 2003) This article examines promises and challenges inherent in using online materials for teaching American history, particularly digitized primary sources. Tebeau discusses how information technology has "transformed how and when our students learn" and how teachers can "reorient our pedagogy to develop in our students an ability not just to read but also to do history." He states that e-opportunities facilitate active learning, which draws students into the process of historical reasoning and critical thinking.

**Is Technology Producing A Decline In Critical Thinking And Analysis?** (Science Daily, 2009) A report on a study of how technology alters students' learning which states that computers, video games and multitasking may improve visual skills, but appear to have contributed to the erosion of critical-thinking and analysis skills. Reading, however, develops imagination as well as deductive, reflection and critical-thinking skills, said researcher and UCLA psychology professor Patricia Greenfield, director of the Children's Digital Media Center of Los Angeles. "No one medium is good for everything," she said. "If we want to develop a variety of skills, we need a balanced media diet."

**At School, Technology Starts to Turn a Corner** (New York Times, 2008) The article focuses on project learning through technology, arguing that it "encourages active learning and produces better performance in class and on standardized tests. The educational bottom line, it seems, is that while computer technology has matured and become more affordable, the most significant development has been a deeper understanding of how to use the technology." One administrator observes, "advances in computing, combined with improved understanding of how to tailor the technology to different students, can help transform education."

**Internet Explorers: Virtual Field Trips Are More Than Just Money Savers** (Platoni, K., 2008) Online adventures – virtual field trips – have evolved from entertainment to instructionally sound tools merging "highly interactive Web sites with engaging storytelling, vibrant art, and curricula tied to national standards."

**Congress Launches the First National Research Program Focused on Technology and Learning** (Press Release, 8/18/2008) Congress authorized a federal research center, The National Center for Research in Advanced Information and Digital Technologies, charged with helping to develop innovative ways to use digital technology at schools and universities. The center will support research and development of new education technologies, including internet-based technologies. It will also help adapt techniques widely used in other sectors, such as advertising and the military, to classroom instruction.

To access links to articles cited above please visit the Teaching with Primary Sources Newsletter online at <http://www.loc.gov/teachers/tps/quarterly>.

## Learning Activity - Elementary Level

### THOMAS JEFFERSON'S LIBRARY: CONNECTING THE BOOKS TO THE LIFE ACTIVITY

#### Overview

The purpose of this activity is to introduce students to Thomas Jefferson by examining some of the books from his personal library. Students, working individually or in pairs, will draw connections between Jefferson's reading and his life's work. Students will match Jefferson's books to different roles he played (scientist, builder, leader, and scholar), select the book they believe Jefferson would have used most often, and later defend their decisions in class discussion.

#### Objectives

After completing this learning activity, students will be able to:

- Identify some of Thomas Jefferson's many roles in life;
- Explain the importance of books to 18th century people, including Thomas Jefferson;
- and evaluate some of Jefferson's books and speculate about how they might have influenced him.

#### Time Required

One class periods

#### Grade Level

4 - 6

#### Topic/s

United States History/Government

#### Subject/Sub-subject

Social Studies, Language Arts (Reading)

#### Standards

McREL 4th Edition Standards and Benchmarks

Grades K-4 History

Standard 4. Understands how democratic values came to be, and how they have been exemplified by people, events, and symbols

Historical Understanding

Standard 2. Understands the historical perspective.

Language Arts: Reading

Standard 5. Uses the general skills and strategies of the reading process.

Thinking and Reasoning

Standard 3. Effectively uses mental processes that are based on identifying similarities and differences.



*The Builder's Dictionary; or, Gentleman and Architect's Companion.* The Builder's Dictionary Interactive at myLOC [http://myloc.gov/Exhibitions/jeffersonslibrary/Imagination/ExhibitObjects/INT\\_BuildersDictionary.aspx](http://myloc.gov/Exhibitions/jeffersonslibrary/Imagination/ExhibitObjects/INT_BuildersDictionary.aspx)

#### View and Print the complete learning activity:

[http://www.loc.gov/teachers/tps/quarterly/technology/pdf/elementary\\_activity.pdf](http://www.loc.gov/teachers/tps/quarterly/technology/pdf/elementary_activity.pdf)



## Learning Activity - Secondary Level

### MAPS AND MAPMAKERS: SEEING WHAT'S ON THE MAP ACTIVITY

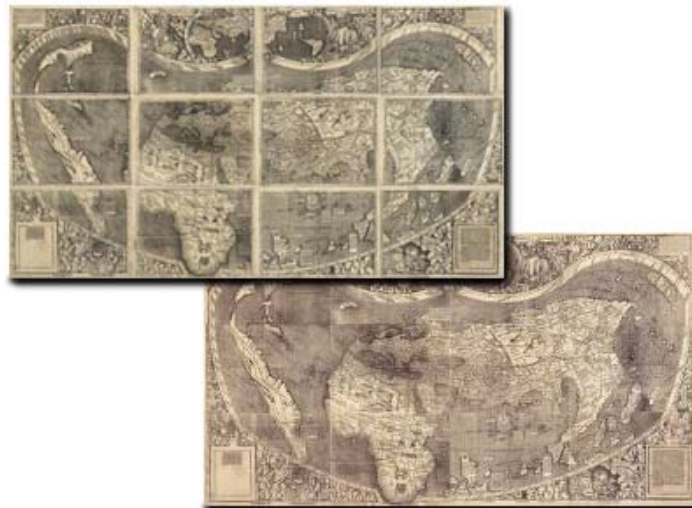
#### Overview

In this activity, students examine Martin Waldseemüller's 1507 map of the world to discover a new way of thinking about what was important to the mapmaker. Students, working individually or in pairs, will look closely at different types of information on the map to consider choices the mapmaker made about what to put on the map, and what to leave off. They will hypothesize about what would have been the most important information to the mapmaker, consider the types of information they consider to be most important on the map, and later defend their conclusions in class discussion

#### Objectives

After completing this learning activity, students will be able to:

- Describe how mapmakers work to create maps (i.e., adding different layers of information);
- analyze the details of a map to speculate about the map's intended audience and use;
- and explain how a mapmaker's choices about what information to include and highlight on a map are influenced by perspective.



#### Time Required

One class periods

#### Grade level

7 - 8

#### Topic/s

Geography

#### Subject/Sub-subject

Pre-contact America, 1500s

#### Standards

McREL 4th Edition Standards and Benchmarks

[www.mcrel.org/compendium/browse.asp](http://www.mcrel.org/compendium/browse.asp)

Geography

Standard 1. (The World in Spatial Terms) Understands the characteristics and uses of maps, globes, and other geographic tools and technologies

Standard 6. (Places and Regions) Understands that culture and experience influence people's perceptions of places and regions

Standard 17. (Uses of Geography) Understands how geography is used to interpret the past  
Language Arts

Standard 1. (Writing) Uses the general skills and strategies of the writing process

Standard 9. (Viewing) Uses viewing skills and strategies to understand and interpret visual media

#### View and Print the complete learning activity:

[http://www.loc.gov/teachers/tps/quarterly/technology/pdf/secondary\\_activity.pdf](http://www.loc.gov/teachers/tps/quarterly/technology/pdf/secondary_activity.pdf)

## Teacher Spotlight

**Lisa Brose**



**In each issue, we introduce a teacher who participated in Teaching with Primary Sources (TPS) professional development and successfully uses Library of Congress primary sources to support effective instructional practices.**

This issue's Teacher Spotlight features Lisa Brose, elementary teacher at Lopez Elementary School in Fort Collins, Colorado. University of Northern Colorado TPS in Greeley, Colorado, nominated Lisa for her effective classroom use of primary sources to integrate technology. During her 16-year career, Lisa taught art, Title One reading and math (K-6) and general classes (2-5). In this interview Lisa discusses teaching strategies and her favorite Library of Congress online resources.

**How did you learn about the Library of Congress TPS Program?** I first learned about TPS when looking for resources on communication during the Civil War. I saw a workshop advertised, but it was right before I moved from Pennsylvania to Colorado so I could not attend.

**What motivated you to participate in the TPS program in your local area?** After moving, I discovered the TPS program at the University of Northern Colorado and signed up for a workshop. The Library of Congress has amazing online collections, but I needed help navigating the Web site.

**Tell us about the first time you tried using primary sources in the classroom.** The first time I tried using my classroom's new interactive whiteboard to analyze digitized primary sources, the technology was temperamental and we ended up frustrated at what wasn't working rather than tracing Columbus's sailing routes on a historical map. I became more comfortable teaching with primary sources with or without technology after my TPS workshop experience. Primary sources came alive in my classroom. Students are more engaged when primary sources are used in a lesson. They generate theories in response to questions such as why a particular object was important to the people who used it and do research to support their ideas.

**How have you used technology to bring primary sources into the classroom to enhance learning for students?** Only accountants used computers when I was a new teacher; my great joy was my overhead projector that let me face my students instead of writing on a blackboard with my back to them. Now I'm able to teach and learn with my students using resources from all over the world if computers with internet access are available. Resolution capabilities of digitized primary sources offer more teaching opportunities than ever before. For example, the ability to zoom in and check details allows students to analyze historical documents and photographs as if they were actually handling them.

My students embrace combining technology and primary sources. I can print images for groups working at tables, but the class still wants images projected while working for clarity and detail. Using presentation software or online tools to share information with classmates is as natural to students as using a pencil to draw a diagram or picture. The media

motivates today's students and yet they don't even think about technology since they have never been without it. The range of collections available online through the Library of Congress makes it easier than ever to motivate and guide students to look deeper and find out how and why people may have done what they did in the past. I want students to experience history with empathy and to understand the implications of an event at a particular point in time. Primary sources make this happen.

**What are your favorite resources available on the Library of Congress Web site? Why?** My favorites thus far are Abraham Lincoln's writings. When I stumbled upon correspondence to the President regarding Robert E. Lee's entry into Pennsylvania (within days of the start of the Battle of Gettysburg), complete with troop and artillery numbers, near our former home of Chambersburg, Pennsylvania, it gave me chills. Literally, it felt like I was being sucked back in time.

**What advice do you have for teachers who have never tried teaching with primary sources?** Just do it! Resources are endless as are possibilities. Try searching American Memory collections or use an artifact or map from a Library exhibition. Start small with one activity and enlist technology specialist help if you should have difficulty.

Teaching with primary sources involves students in reading, writing, decision-making and critical thinking. Even experienced teachers can benefit as the TPS program methods incorporate 21st century thinking skills and differentiation of lesson components. Your students will thank you and you will enjoy teaching motivated, curious students.