

By Maureen Brown Yoder

Adventures

IN ELECTRONIC CONSTRUCTIVISM

You cannot teach a man anything; you can only help him find it within himself.
—Galileo Galilei (1564–1642)

Igniting students' curiosity and building an environment that encourages and supports their creativity can also invigorate your teaching. We know that a constructivist approach involving project-based, student-centered activities can result in students taking an active role in their own learning and engaging in thought-provoking challenges. When accomplished with collaborative activities, students develop skills that will serve them well in the future in any group project.

Critical to this approach is the articulation of the challenge, often one or more questions and scenarios. This article provides a context, and then proceeds to demonstrate how you can modify already good curriculum to create engaging and motivating challenges for your students. Exciting results occur when existing technologies and the emerging Web 2.0 applications are integral aspects of information gathering, data analysis, and presentation possibilities.

WebQuests, originated by Bernie Dodge and Tom March, exemplify electronic constructivism and incorporate scenarios and tasks that go far beyond fact finding and reporting. When tackling WebQuest challenges, students engage in transformative thinking, combining their innate creativity and curiosity with the vast array of resources on the Internet, to create an original product to demonstrate their new knowledge. The examples that follow are meant to provide inspiration for practitioners to write the Introduction and Task portions of WebQuests.

Constructivism in the Present using Personalities from the Past

Throughout the history of education, students have been asked to report on influential and inspiring people and events. World history classes are punctuated with explorers and their discoveries, monarchs and political leaders, philosophers and rebels. American history instruction includes biographies of generals and presidents, educators and civil rights leaders. When a language arts curriculum focuses on literature, students learn about novelists, poets, and non-fiction writers. Science and mathematics students learn about inventors, theorists, and their contributions. The great composers, painters, dancers, actors, and other artists have inspired students of the arts.

Much of the traditional curriculum involving these individuals consist of fact finding and reporting, with attention given to their contributions. Although useful and interesting, a teacher can enhance these assignments to incorporate more extensive information gathering, reflection, and analysis, and an original, culminating project. A traditional approach could be transformed into a constructivist learning experience often with only a minor revision of the assignment.

The following examples are models of practice, meant to be modified and customized so that they are relevant to specific classroom situations and curricula. Any of these could be used as the basis of the Introduction and Task in a WebQuest. (*Editor's Note:* Activity details are available on the L&L Web site, <http://www.iste.org/ll>.)



Using information about famous individuals throughout history, help your students go beyond fact finding by creating motivating and challenging collaborative learning experiences and intriguing WebQuest tasks



Juxtaposition: Conversations across the Centuries

A Tale of Two Georges. When I was in grade school, I was asked to “write a report about George Washington.” We had an encyclopedia at home, and I turned to the “W” volume. On 3×5 cards, I copied down information about Washington’s background, his involvement in the Revolutionary War, and his ultimate legacy as our first president. On lined paper, I transferred my notes into sentences, using my very best handwriting. I convincingly articulated the facts in my own words, and my penmanship was legible. I was given a good grade.

There was no analysis, however, no collaboration with my classmates who basically went through exactly the same process I went through, and unless we read the papers in front of the class, no one heard my words except for my teacher.

Imagine, though, how different the experience would have been if the assignment were:

“Compare President George Washington’s foreign policy to

President George W. Bush’s foreign policy. Create a conversation that the two might have had if they could communicate across the centuries using e-mail, or another technology we have been exploring.”

See the activity details online for next steps.

Taking on the persona of accomplished figures in history can bring the individuals to life and remind us that they were human beings, like us, not just static characters described in black and white text. We can learn what led up to their adventure, imagine why others did or didn’t support them, and discuss how their beliefs and actions affected history.

Instead of the traditional assignment of focusing on an individual explorer and gathering information about his travels, consider the following:

Around the World—Years vs. Hours. Imagine that you are preparing to moderate a podcast discussion between two explorers, Ferdinand Magellan and John Glenn. Both depended on the accumulated knowledge of their time. First, gather the facts. Consider such questions as: Why did Magellan’s voyage span from 1519 to 1522 when he supposedly died in 1521? Second, based on the facts, what would you want to know about them? What kind of sense of adventure and fear do you think each would have? Third, relate their accomplishments to your own life. How do they inspire you? What evokes anticipation and fear in you? Are your feelings more like Magellan’s or Glenn’s? Incorporate these questions and answers into a script for the podcast.

My Trip to Mars, a WebQuest for 5th–9th grade science students, begins with the following challenge: “You and a team of explorers have recently returned from the planet Mars and everyone wants to hear about your experience. What did you see? What did you do? Did you learn anything new about this planet that will be valuable for future expeditions and colonists?”

Stories of Adventure and Discovery.

Exploration and adventure are topics often seen in WebQuest Introductions and Tasks. The following are two examples of real-life explorations, one relating to the past and the other to the future.

Each of these WebQuests involves taking on roles different from a student's everyday identity. Reflecting on what Lewis and Clark might have been thinking would inform the teams involved in creating the anniversary event. Imagining what it would be like to explore Mars would involve extrapolating current knowledge and creating a scenario based on data, experience, and conjecture. These are truly constructivist approaches, ones that ignite the imagination and require data collection, analysis, and creativity.

People Who Inspire: Learning from Courageous Individuals

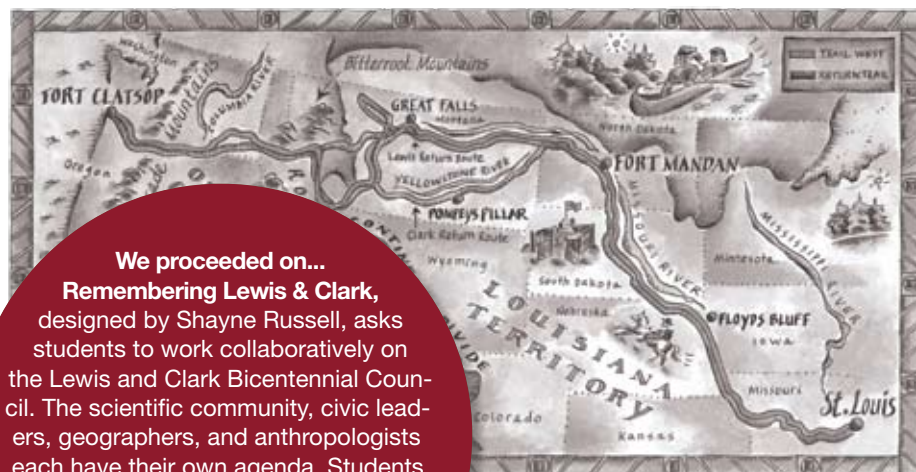
WebQuests often address issues that involve social and political change, inspired by individuals and groups who are daring and courageous. Here are some examples:

First Ladies and Other Inspiring Women.

Abigail Adams took care of the Massachusetts farm while her husband, John Adams, second president of the United States, spent time away at the Continental Congress and as a diplomat in Europe. She was an advocate for women's rights and, in particular, a vocal promoter of education for women.

Eleanor Roosevelt wrote, "No one can make you feel inferior without your consent." She was a spokesperson for those who were made to feel inferior by other people, by tradition, and by the law. She helped write the Universal Declaration of Human Rights, adopted in 1948.

The Nike advertising campaign "Just do it!" may have had its roots in something that Amelia Earhart said: "The most effective way to do it, is to do



We proceeded on...

Remembering Lewis & Clark, designed by Shayne Russell, asks students to work collaboratively on the Lewis and Clark Bicentennial Council. The scientific community, civic leaders, geographers, and anthropologists each have their own agenda. Students must research each group's viewpoint and create an event honoring the expedition that will reflect each group's interest.

it." Grace Hopper and Sally Ride were also successful in endeavors previously open only to men.

The assignment is to collaborate, possibly with another classroom, to form a panel of 10 women from various times in history, including the present and future. The format will be an online summit using Elluminate or another real-time audio or video conferencing system. There is further information in the Web supplement.

Striving for Change. In Women's Equality: A WebQuest for 11th & 12th grade, the question is "Did suffrage accomplish full equality for women?" After much research, 11th graders are asked "As a concerned citizen, submit an editorial article that answers that question. 12th graders are asked "to write a letter to your representative in Congress either asking his/her position on the issue or to vote a certain way on the bill that will affect women in the U.S.

What questions would you ask to motivate students to study influential individuals such as Mahatma Gandhi, Golda Meir, Martin Luther King, Jr., or Nelson Mandela? What kind of scenario would you create? What project would you assign to engage your students in not only fact-finding, but

analysis and reflection that would lead to a creative demonstration of what they have learned?

Digital Video: Bringing the Past to Life

It's easy to find information about famous people; when they were born and died, where they lived, what they did for a living, or what they wrote. Learning more about their lives, their personalities, what motivated them, and how they were able to achieve what they accomplished is often more difficult. Identifying these unique traits, though, can often inspire student's creativity and provide them with examples of how to overcome



An Interview

Interviewer: This is WPST, People from the Past, the premier provider of old news. Today, thanks to a new technology allowing time travel videoconferencing, I'm going to be interviewing the famous philosopher Socrates. ... Welcome to our show "Meet the Muses." I am not sure what to call you, Socrates. Do you have a last name?

Socrates: I am like Cher, Madonna, and Oprah. People know me by one name.

Interviewer: Can you please tell us about your writings?

Socrates: Writings? What writings? If you had even Googled me, my little green olive, you might have learned that it was my student Plato who wrote the Socrates dialogues.



How you ask a question and what you expect of your students can make a huge difference in how they learn.

adversity to attain their goals. Internet resources provide us with access to photographs, letters, journals, quotations, and other authentic resources that can inform our research.

Digital video capabilities make it possible to capture and edit video and audio, import clips from public domain sites, and consolidate a collection of clips into one project. An assignment that asks students to interview a person from the past can motivate students to go beyond the demographic data and re-create

the appearance, personality, and attitude of an individual, an activity that involves research, compilation and evaluation of the data, and, depending on the available information, a great deal of imagination.

The images and script below are from a digital video of an interview with “Socrates.” Most descriptions of Socrates summarize his “Socratic Method” of questioning. He encouraged the youth of Athens to continually question widely held beliefs and to form groups to discuss and debate important issues. He eventually lost his life because of his efforts. He was known as a smart aleck with a prickly personality, traits that are reflected in the interview.

Find more examples online.

Summary

Ultimately we want our students to be able to face challenges with confidence. We want them to know how to approach a task, what questions to ask, how to gather the necessary information, and how to apply their experience and skills to reach a solution. Those

students who have had experience developing original solutions in a variety of formats will be most likely to think creatively and consider multiple options. Those who have worked collaboratively and learned how to reach a consensus will be the ones likely to be successful working as part of a team.

Teachers are central to this process and can facilitate it by engaging their students in thought-provoking activities that inspire them to think deeply and encourage them to demonstrate their imagination and creativity. How you ask a question and what you expect of your students can make a huge difference in how they learn.

Acknowledgements

Photos provided by and used with permission from the U.S. Department of State, Bridgeman Art Library, NASA, Library of Congress, Lyndon Baines Johnson Library, and Maureen Yoder.

Resources

Find Resources and Web sites used in this article in the Web supplement at <http://www.iste.org/ll>.



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with Socrates

Interviewer: There is a famous quote attributed to you: “An unexamined life is not worth living.”



Socrates: Yes, but if you had done your homework, my little grape leaf, you would have known that except for that one famous quote, I was known more for my questions than my answers. ... (questions about the Internet, primary sources, his work in Athens) ...

Interviewer: Is there one parting thought you would like to leave with us before you drink the hemlock?

Socrates: Yes, I would like to tell all the teachers and students out there to make sure that you go beyond fact-finding questions and ask probing, open-ended questions that will make them think and come up with something original. Farewell.



WebQuest: Adventures in Electronic Constructivism Web Supplement
A Tale of Two Georges: Next Steps

	
George Washington 1732-1799	George W. Bush 1946-




Assuming we were working in a group, we could divide up the necessary tasks. First we would need to understand what a foreign policy entailed. We could then divide up and research both presidents, looking for evidence of their views and practices relating to other countries. Artifacts such as Washington's Farewell Address would provide information about his beliefs. Once we gathered a sufficient amount of material, we would analyze it, find patterns, and articulate statements representing each president. We would then create a script of a dialogue the two might have had and decide on what available technology would be most appropriate.

The United State government Web sites are some of the best sources of information. The Farewell Address of President George Washington, given on September 17, 1796, provides some of the information that would be helpful with this activity:

"It is our true policy to steer clear of permanent alliances with any portion of the foreign world; ...I hold the maxim no less applicable to public than to private affairs, that honesty is always the best policy. ... Taking care always to keep ourselves, by suitable establishments, on a respectable defensive posture, we may safely trust to temporary alliances for extraordinary emergencies."

<http://usinfo.state.gov/usa/infousa/facts/democrac/49.htm>

First Ladies and Other Inspiring Women

		
<p>Abigail Adams 1744 – 1818 First Lady 1797–1801</p> <p>“If particular care and attention is not paid to the ladies, we are determined to foment a rebellion, and will not hold ourselves bound by any laws in which we have no voice or representation.”</p>	<p>Amelia Earhart 1887-1937 1928; First woman to pilot a plane across the Atlantic</p> <p>“The most difficult thing is the decision to act, the rest is merely tenacity. You can do anything you decide to do. You can act to change and control your life; and the procedure, the process, is its own reward.</p>	<p>Eleanor Roosevelt 1884 – 1962 First Lady 1933–1945</p> <p>“We gain strength, and courage, and confidence by each experience in which we really stop to look fear in the face... we must do that which we think we cannot.”</p>

Abigail Adams and Eleanor Roosevelt were public figures married to powerful men. Amelia Earhart, Grace Hopper, and Sally Ride became famous because of their achievements. Identify other women who did not start out as public figures but who faced similar challenges. Include an imaginary woman to represent the future.

List questions that you would ask the women and topics that you would like them to debate. Assign roles to groups of students in class. Research the Internet for information, images, legislation, and anecdotes. Determine a format for the panel and prepare what each woman will contribute. Allow each to briefly tell their story then talk about their rights as women and the struggles and challenges they’ve faced, socially and legally. End the summit with plans for the future.

Find out what might have led to their achievements. Were they brought up in homes of privilege? Who or what inspired them? What obstacles do you think they faced? What can you learn from them that could impact your life? What did these accomplished women have in common that may have

influenced their choices in life? Imagine other groupings of men and women who accomplished something that took intelligence, creativity, persistence, and courage.

Resources

- Becker, H. J. & Riel, M. (2000). *Teacher professional engagement and constructivist—Compatible computer use*. Available:
http://www.crito.uci.edu/tlc/findings/report_7/startpage.html
- Bransford, J., Brown, A. L., & Cocking, R. R. (2000). *How people learn: Brain, mind, experience, and school* (expanded edition). Washington, DC: National Academies Press.
Available: <http://fermat.nap.edu/html/howpeople1/>
- McKenzie, J. (2004). *Learning to question to wonder to learn*. Bellingham, MA: FNO Press.
- Papert, S. (1980). *Mindstorms: Children, computers, and powerful ideas*. New York: Basic Books.
- Sprague, D., & Dede, C. (1999). Constructivism in the classroom: If I teach this way, am I doing my job? *Learning & Leading with Technology*, 27(1), 6–17.
- Vygotsky, L. S. (1978). *Mind in society: The development of psychological processes*. Cambridge, MA: Harvard University Press.

Web Sites

- Bernie Dodge's WebQuest sites:
<http://webquest.sdsu.edu/>
<http://webquest.org/>
- Annette Lamb's Information Inquiry for Teachers:
<http://eduscapes.com/info/models.htm>
- Tom March's sites:
<http://online.com/webquests/question.html>
<http://bestwebquests.com/>
- Jamie McKenzie's Five Types of Slam Dunk Digital Lessons:
<http://www.fno.org/sum04/fivekinds.html>

Web Sites for people mentioned in the print article

- The Encyclopedia of Informal Education site:
<http://www.infed.org/thinkers/>
- Abigail Adams:
http://womenshistory.about.com/cs/quotes/a/qu_abigailadams.htm
- Amelia Earhart:
<http://www.ameliaearhart.com>
- Grace Hopper:
<http://web.mit.edu/Invent/iow/hopper.html>

Sally Ride:

<http://quest.nasa.gov/space/frontiers/ride.html>

Eleanor Roosevelt:

http://womenshistory.about.com/cs/quotes/a/qu_e_roosevelt.htm

[Need sites for Magellan/Glenn, Gandhi/Meir/King/Mandela, and Socrates]

WebQuests

George Washington Lives!—On the Internet

http://www.education-world.com/a_lesson/lesson051.shtml

My Trip to Mars by Benjamin Hughes:

<http://eprintice.sdsu.edu/J03OP/hughes/wq/s-trip2mars.htm>

We Proceeded On—Remembering Lewis and Clark by Shayne Russell

<http://home.earthlink.net/~s.russell/LC/webquest2.html>

Women's Equality:

<http://www.pslearning.org/teach/wq/018/>