

The “Starving Time” Wikinquiry: Using a Wiki to Foster Historical Inquiry

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During our careers as teachers, professional development specialists, and teacher educators, we have made perpetual attempts to develop instructional strategies and tools for engaging students in historical inquiry. Emphasis in recent years in the field of social studies education has been on the development and use of digitized historical documents in facilitating the inquiry process and developing skills in historical thinking, and to a lesser degree on models of web inquiry including Web Inquiry Projects (WIPS) and WebQuests.¹ These models often promote student construction of new historical knowledge and can be powerful examples of teaching and learning, but don't necessarily instill in students an understanding of the nature of history and how it is commonly encapsulated in various historical texts (e.g., textbooks, films, or journal articles).² In other words, these models help students to approximate the work of historians, but do not necessarily help them to develop an understanding of how history is constructed in commonly accessed historical texts. In this article, we promote a model of historical inquiry utilizing a wiki as a tool for collaboration, communication, and construction of knowledge.

Historical Inquiry

Historical inquiry, in this case, refers to the process of teaching students “how to find information, how to evaluate sources, how to reconcile conflicting accounts, how to create an interpretive account.”³ There are many models of teaching historical inquiry, but most include two basic tenets: (1) students are engaged in assessing the validity and trustworthiness of historical primary and secondary sources and identifying the perspective of the author, with the goal that students are able to separate a “warranted belief from that which is not” and the bias present in that belief;⁴ and (2) students are able to separate out what is significant about an event and place it within historical context. The overall goal is for students to develop critical

researching skills in assessing and interpreting historical sources and the ability to articulate a well-warranted argument or historical account. Although the emphasis in recent years has been on the interpretation of primary sources, students also need to critically evaluate secondary sources such as historical accounts, textbooks, and media (e.g., television and film), as skills in historiography are essential for thinking critically about the past.⁵

The Historical “Wikinquiry”

As part of this instructional model, dubbed Wikinquiry, we have students evaluate primary and secondary sources—not to construct a new historical account, but to edit an existing historical account in a medium that they know all too well,

their textbooks. The objectives for the Wikinquiry are: (1) to engage students in developing skills in historical inquiry through reconciling incomplete and conflicting accounts of the past with primary and secondary sources; (2) to utilize the collaborative nature of a wiki for Papert's idea of “constructionism” by having students reconstruct textbook accounts into more detailed, comprehensive, nuanced, and often accurate historical accounts;⁶ and (3) to help students understand the nature of historical work and the ways in which history is encapsulated in media such as textbooks, digital documents, and video. The Wikinquiry model forces students to evaluate sources while also helping them gain an understanding of the nature and limits of history textbooks. In addition, the Wikinquiry emphasizes reading and writing, both fundamental in social studies education.⁷ The wiki site allows greater collaboration during the inquiry between students within and across classes in addition to easy access to media sources. This model can be used successfully in both middle and high school with varying levels of difficulty based on the inquiry problems and sources selected.

What is a Wiki?

A wiki is essentially a web-based publishing tool that enables multiple contributors to quickly add or edit content on the web without any software or knowledge of

web page authoring. Wikipedia expands on this definition noting that a Wiki is a “type of website that allows the visitors themselves to easily add, remove and otherwise edit and change some available content, sometimes without the need for registration. This ease of interaction and operation makes a wiki an effective tool for collaborative authoring.”⁸ While many wikis are “democratic” in nature (i.e., they are designed to be edited by anyone), it is also possible to configure them in a way that restricts who can edit or view wiki content.

Why a Wiki?

Wiki sites are based on the belief that collaborative knowledge building will lead to greater access to information (both quality and quantity); however, because of its open nature, public wikis, such as Wikipedia, have come under fire for allowing non-experts to edit content--some of which is not all that accurate or is purposefully misleading.⁹ Despite these concerns, we recognize the benefit of wikis because of the easy accessibility (both economically and logistically) to wiki sites and because of their relative ease of use. One feature of

a wiki is that the site administrator (a.k.a. the teacher) can access the previously saved versions of the text from the various periods and revert to previously saved drafts if anything is lost or inadvertently altered. Additionally, the administrator can view contributions of specific authors over time, increasing accountability for student work. For the reasons identified above, and many others, we have found wikis to be powerful tools for engaging students in collaborative inquiry.

The Model: Historical Wikingquiry

There are four steps to a Wikingquiry: (1) Posing the problem, (2) Exploring Sources, (3) Analysis and Re-Construction, and (4) Debriefing and Comparison of Accounts. They are discussed below using an example Wikingquiry on the Jamestown colony’s “starving time.”

Posing the Problem

With any inquiry activity, it is essential to have a powerful and engaging inquiry question. For this example, we chose the timely topic of “What caused the ‘starving time’ in the Jamestown colony?”¹⁰ The starving time refers to the winter of 1609-1610 when the vast population of colonists in Jamestown was reduced from around 500 to 60. There are varying accounts of the exact number of colonists who died and competing interpretations as to why so many settlers perished. We chose this topic because of our campus’s proximity to the historic site (it is five miles away) and because of the recent 400th anniversary of Jamestown’s establishment as the first permanent English colony in North America. Other Wikingquiry examples include “Who fired the ‘shot heard ‘round the world’?” on Lexington Green and “What caused the Great Depression?” These questions share several key attributes: (1) they are questions that have multiple and competing legitimate answers or perspectives, (2) all have readily available primary and secondary artifacts and accounts to draw on, and (3) they relate to events or topics traditionally included in textbooks in a narrow, closed, or neutral way.

Table 1. Wiki Sites and Features

	Wikispaces wikispaces.com	PB Wiki pbwiki.com	Seed Wiki www.seedwiki.com
Description	Straight-forward tool to develop a wiki quickly, with a minor learning curve	PB’s (short for peanut butter) pledge is that you can create a wiki in the time it takes to make a peanut butter sandwich	Customizable wiki space that allows creators to design the look and feel using a Word-like user interface
Fee	Free, ad-free space for K-12 educators	Free account has ads; \$5/month for ad free, more permission control.	Free account is ad free; \$10/month for more control over the permissions.
User Control	With free K-12 account, the creator can set up different level viewing and editing permissions	Limited user control with free account—all pages are public, but editing can be password protected	No user control with free account—all pages are public and editable by anyone
Ease of Use	Very user friendly—simple word-like toolbar allows users to edit the font size, style (e.g., bold), alignment, images, hyperlinks, etc.	Basic editing is straight-forward, but creating links requires a basic understanding of wiki commands	Editing of pages is very easy using a full-featured Word-like editor, but creating and linking to new pages is slightly more complicated
Flexibility	Excellent in terms of uploading a variety of files to link to, but limited in terms of customizing the look and feel of the site	Very flexible—ability to incorporate various kinds of images; templates for educational uses are available	Extremely flexible and customizable--the most of the three wiki services reviewed here
Best For ...	Quick and easy creation of web pages with a high level of permissions control	A well-designed, clean and robust site for people who don’t mind dealing with some basic coding	Users that wish to customize their sites and are not as concerned with controlling access and editing

The actual inquiry could be structured in a variety of ways. We place students in the roles of “expert” historians hired to make the textbook more interesting, in-depth, and hopefully, more accurate. Our site consists of a front page that poses the inquiry question and provides some instructions (most will be given by the teacher in class), includes the textbook passage, and provides links for the different “history departments.” The links for each team of student historians leads to a second page which includes the same information as above with the addition of detailed instructions on how to edit the textbook section and annotated links to the various sources for the inquiry and re-construction of the textbook account. As students come into class, we group them into their teams of historians and then use a hook to introduce the lesson. For this lesson, we first use a short video clip as the hook to engage the students in the inquiry and to provide some context for the origins of the settlement and the starving time.¹¹

Exploring Sources

Once the problem or question is established, the students read through the textbook account. For the example activity, we used the following excerpt from *Creating America: A History of the United States*, published by McDougall Littell.¹²

By January 1608, only 38 colonists remained alive. Later that year, John Smith, a soldier and adventurer, took control. To make sure the colonists worked, Smith announced, “He that will not work shall not eat.” Smith’s methods worked. He ordered an existing wall extended around Jamestown. He also persuaded the Powhatan tribe to trade their corn to the colonists. In 1609, Smith was injured in a gunpowder explosion and returned to England. That same year, 800 more English settlers arrived in Jamestown.

Because of growing tensions between settlers and Native Americans, the Powhatan stopped trading food and attacked the

settlers. The settlers did not dare leave the fort. During the “starving time,” the colonists ate rats, mice, and snakes. Only 60 of the colonists were still alive when two ships arrived in 1610. Lord De La Warr, the new governor, imposed discipline, and the “starving time” ended.

After establishing our question and reading the text, the students are engaged in reading, interpreting, and analyzing the primary and secondary sources selected for the inquiry. Outside of establishing a good question, the selection of sources is the most difficult part, as many available sources are at a reading level too difficult for many of the students or are written in older styles of English that are difficult for students to break down. These sources should prompt students to question the textbook account or provide more depth of information than the textbook account. The new information should also be from a variety of sources (e.g., first person, secondary) or from a variety of perspectives (e.g., colonial and British—in the case of the Lexington Green example).

For our sample Wikipquiry, we use four sources that present competing hypotheses of what caused the starving time, or more in-depth accounts of the starving time from which causes could be inferred with teacher scaffolding (web addresses for sources are located in the notes).

1. A video clip (and the available transcript) from the PBS series *Death at Jamestown*, which features archeologists who have been excavating the Jamestown historical site and offer alternative hypotheses for the starving time--particularly drought, in this clip.
2. An excerpt from the *Travels and Works of Captain John Smith* (1610), in which Smith provides an account of the often rocky relationship between the English and the local tribe of natives under the leadership of Powhatan, from which students will hopefully infer that there may be more nuanced reasons for the

English to hide in their fort beyond the simplified explanation of “aggressive Native Americans.”

3. A list of the early settlers of the colony and their occupations, which introduces the somewhat longstanding interpretation that the type of men in the colony (primarily “gentlemen,” i.e., of higher social class) were not interested in, or equipped to, produce their own food for survival.
4. A second textbook style account from the online textbook *Digital History*, so that students engage in comparing the two accounts and interpret the reasons for the discrepancies—for example, in the number of settlers they report in 1609 Jamestown (800 in *Creating America*; 500 in *Digital History*).¹³

We often use between three to five different sources depending on the time allowed for the lesson, the depth or length of the source, and the number of legitimate competing hypotheses or data sets for the particular inquiry question. The annotated links to the sources can be used as scaffolding, depending on the needs of the students engaging in the exercise. For example, we include “pay particular attention to how Smith writes about the relationship between the English and Powhatan” in the annotation as a scaffold for that particular source.

Analysis and Re-Construction

Before students begin the analysis of the sources, the teacher must introduce the students to the particulars of the wiki site and how to edit the textbook excerpt. We emphasize that they should make the excerpt more engaging, detailed, and rich, and that they should use data from the sources. They should also cite the sources that they use in some way, either directly into the narrative (e.g., John Smith claimed that...) or in the format of citation used in the class or school (e.g., Chicago, MLA, APA).

continued on page 158

education. Much of the online journal's content is now free. I also enjoy their free weekly and monthly newsletters.

American Memory (Library of Congress)

<http://memory.loc.gov/learn/>

This website provides some of best resources, and recommendations for usage, of any of the websites on my Favorites list.

Digital History

www.digitalhistory.uh.edu/

I wrote about this site last month. If you haven't tried it, please do so.

Mid-Continent Research for Education and Learning (McREL)

www.mcrel.org/standards/

I think this is the best site related to national and state standards and has some wonderful research reports on effective teaching methods. I use it all the time.

Awesome Library

www.awesomelibrary.org/

This site provides 35,000 lesson plans and links to resources for all subject areas. The plans and resources have been carefully selected and represent the best in each field.

These are some of the sites that I view and recommend frequently. Send me some of the sites that you think should be on every teacher's Favorites list. I'll review them, and sometime in the future, I'll write a column featuring your recommendations. 📧

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HISTORICAL THINKING *from page 143*

and the District of Columbia, more than half of the eighth graders tested failed to reach even the basic level on the NAEP. Only 35 percent of twelfth graders reached the proficient level, down from 40 percent in 1992. See nces.ed.gov/nationsreportcard/reading/ for complete data.

3. Robert B. Bain, "They Thought the World Was Flat?": Applying the Principles of How People Learn in Teaching High School History," in *How Students Learn: History, Mathematics, and Science in the Classroom*, eds. John Bransford and Suzanne Donovan (Washington, D.C.: National Academies Press, 2005), 179-213; Sam Wineburg, *Historical Thinking and Other Unnatural Acts: Charting the Future of Teaching the Past* (Philadelphia, Penn.: Temple University Press, 2001).
4. Primary investigators on historicalthinkingmatters.org/ are Professors Sam Wineburg at Stanford University and Roy Rosenzweig at George Mason University's Center for History and New Media. Thanks go to the William and Flora Hewlett Foundation for their support of this project and for additional support from the Carnegie Corporation of New York. Important contributions to the site's development and production were made by Brad Fogo, Daisy Martin, Chauncey Monte-Sano, Julie Park, and Avishag Reisman at Stanford University and Jeremy Boggs, Josh Greenberg, Stephanie Hurter, Sharon Leon, and Mike O'Malley at George Mason University.
5. Four of the best-selling textbooks are represented here as well as a fifth that is prepared primarily for the California market.
6. On the intermediate processes of historical reading, see Wineburg, 2001, especially Chapter 3.

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We deeply mourn the death of our collaborator, Roy Rosenzweig.

See thanksroy.org/about.

USING A WIKI *from page 146*

In order to help develop good collaborative skills, groups are allowed to decide how they want to proceed with the analysis of sources and re-construction of the text (this may be more structured, based on individual classes). Some groups decide to split up the sources and then come back together as a group to do the synthesis, while others prefer to work together for the duration of the project. How students choose to proceed may be limited either by the number of computers that the group can access or by how the teacher chooses to structure the work. Ideally, each group would have access to a computer. If there is only one computer, groups could be rotated as part of a stations activity or collaborate on incorporating different sources into one common classroom textbook account.

As the groups read the sources, the teacher goes from group to group encouraging the students to contextualize the sources and to compare the differing accounts with one another and with the textbook account. It is also important to provide time reminders so that students do not become too enthralled in one particular source. These kinds of "soft scaffolding" are essential to the success of the exercise.¹⁴ The most powerful aspects of critical thinking and inquiry occur while students discuss the sources within their groups and compare them to the textbook account.

As students work their way through the sources, they need to decide what should be included in their revised text and often which sources should be trusted most. This kind of discussion within groups should be encouraged or introduced by the teacher since



Student-historians collaborate on their textbook account.

most students will focus on the rewriting of the text and not analysis of the accuracy and authenticity of the documents. The nature of interactions among the group will depend to some degree on the inquiry question and data sources. For example, with the Lexington Green Wikipquiry, students often spend time deliberating which of the opposing accounts had more validity (i.e., British soldiers or Massachusetts militiamen). The heart of this activity lies in these group discussions over the validity of sources or prominence of hypotheses and the data supporting them. Because only one student in a group can add to the wiki textbook entry at a time, it forces students to discuss and negotiate the editing of the text.

Debrief and Comparison of Accounts

After students complete their revisions of the textbook account, they are asked to read other groups' revisions and discuss as a whole class why they came to different conclusions. This step allows the teacher to bring the whole group back together and really discuss reasons why groups might have differences in their accounts based on the same evidence, highlighting the subjective nature of historical work and limitations of space and style in textbooks.

If class time is an issue or the purpose is to encourage deliberation and individual

accountability, students could contribute to the revised wiki entry over time, adding to, or refining, each other's work. As long as each student in a group has an identifiable username, the teacher can track specific contributions from each student during the project. While this limits the collaborative analysis described above, it does encourage each student to contribute in substantive ways and provides more time for students to let ideas germinate before contributing them to the wiki.

In another variation, groups within the same period or groups from different periods could be provided with different sources, adding an additional layer to the debriefing. In this variation of the model, the students discuss both the difference in accounts and gain a sense of why different historical accounts might diverge depending on the sources that are available. This variation would take more time, both in teacher preparation and in the activity and debrief itself, but could be especially powerful for upper level middle or high school students.

Assessment

Assessment of a Wikipquiry should focus primarily on the collaboration of the group members (through self and group evaluations) and the ability to construct a warranted account, including the interpretation and use of sources to enrich and

Annotated Jamestown Sources

Jamestown Rediscovery

www.apva.org/jr.html

This site, created by the Association for the Preservation of Virginia Antiquities, provides detailed accounts of findings at Jamestown during the archeological digs, including pictures of artifacts such as a Scottish pistol or a hammer used by the settlers in Jamestown.

Historic Jamestown

www.nps.gov/jame/

This site is powered by the National Park Service and provides primary documents and information about visiting Jamestown that teachers can utilize to plan field trips and allow students to "go back in time."

Jamestown, The Buried Truth, by William M. Kelso

In this book, Kelso takes the reader to the start of the Jamestown colony and unveils his discovery of the James Fort and the artifacts that help describe the lives of the Jamestown settlers. (Charlottesville, Va.; University of Virginia Press, 2006).

Jamestown 2007

www.jamestown2007.org

This site details the events of the 400th Anniversary of America celebration including Jamestown Live!, an online educational program for 4th through 11th grade students across the nation.

The Secrets of the Dead

www.pbs.org/wnet/secrets/case_jamestown/index.html

This site provides lesson plans for teachers and also opportunities for students to "explore Jamestown" on their own through an interactive excavation; in addition, there are informative, interesting videos that a class can engage in.


Virginia Center for Digital History's "Virtual Jamestown"

www.virtualjamestown.org

This site grants access to many primary documents and provides an online resource for teachers to bring such documents and projects into the classroom.

enliven the textbook passage. We use a rubric structured around the larger goals listed above, along with some aspects of writing conventions. Students are provided with the rubric at the onset of the project. In addition, the wiki site allows for peer assessment if the teacher would like groups to assess and provide feedback on others' wiki pages.

Conclusions

We have presented a model for instruction that we believe promotes powerful and authentic social studies learning.¹⁵ The Wikinquiry requires students to evaluate, interpret, and synthesize historical texts, both primary and secondary. It also asks students to interrogate textbook accounts of historical events and deliberate on the nature of historical accounts and how they are constructed. Finally, it asks them to not only read and discuss the event and sources in their group, but also to collaborate with their peers in writing a detailed and cohesive re-constructed textbook account. The Wikinquiry extends previous inquiry models through the added power of the wiki to enable greater collaboration between students within and across classes and allow teachers to easily access, store, view, and retrieve the groups' reconstructed accounts. Finally, the Wikinquiry is flexible and constantly changing based on the questions and sources available, and readers of this article are encouraged to take these ideas and make them their own. Wikis have great potential for use in the classroom and for professional collaboration and communication. 

Notes

1. Kelly Schrum, "Making History on the Web Matter in Your Classroom," *The History Teacher* 34 (2001): 327-338; Andrew J. Milson and Portia Downey, "Webquest: Using Internet Resources for Cooperative Inquiry," *Social Education* 65, no. 3 (2001): 144; David Hicks, Peter E. Doolittle, and E. Thomas Ewing, "The SCIM-C Strategy: Expert Historians, Historical Inquiry, and Multimedia," *Social Education* 68, no. 3 (2004): 221; John W. Saye and Thomas Brush, "The Persistent Issues in History Network: Using Technology to Support Historical Inquiry and Civic Reasoning," *Social Education* 69, no. 3 (2005): 168; Philip Molebash, "Web Historical Inquiry Projects," *Social Education* 68, no. 3 (2004): 226; Philip Molebash and Bernie Dodge, "Kickstarting Inquiry with Webquests and Web Inquiry Projects," *Social Education* 67, no. 3 (2003): 158.
2. Sam Wineburg and Daisy Martin, "Reading and Rewriting History," *Educational Leadership* 62 (2004): 41-45; Bruce A. VanSledright, "What Does It Mean to Think Historically and How Do You Teach It?" *Social Education* 68, no. 3 (2004): 230-233.
3. Linda Levstik and Keith Barton, *Doing History: Investigating with Children in Elementary and Middle Schools* (Mahwah, N.J.: Lawrence Erlbaum Associates, 1997), 14.
4. Peter Seixas, "Conceptualizing Growth in Historical Understanding," in *Handbook of Education and Human Development: New Models of Learning, Teaching, and Schooling*, eds. David Olson and Nancy Torrance (Oxford, UK: Blackwell, 1996), 765-783.
5. James Loewen, "Patriotism, Nationalism, and Our Jobs as Americans," in *Pledging Allegiance: The Politics of Patriotism in America's Schools*, ed. Joel Westheimer (New York: Teacher's College Press, 2007), 61-64.
6. Seymour Papert, *Mindstorms: Children, Computers and Powerful Ideas* (New York: Basic Book, Inc., 1980).
7. Wineburg and Martin describe a similar model of inquiry that was used as part of their Promoting Argumentation Through History and Science (PATHS) project, but without the wiki component.
8. Wikipedia Foundation, Inc., "Wiki," Wikipedia: The Free Encyclopedia, (accessed September, 2006) www.wikipedia.org/wiki.
9. Roy Rosenzweig, "Can History Be an Open Source? Wikipedia and the Future of the Past," *The Journal of American History* 93 (2006): 117-146.
10. You can find our sample Wikinquiry at wm-methods.wikispaces.com/StarvingTime.

11. Jamestown 1607 "Stories of a Nation: Surviving Jamestown. Episode 1: The Starving Time" (Richmond, Va.: Virginia Tourism Corporation), www.jamestown1607.org/storiesnation.asp?ver=episode1.
12. McDougall Littell, *Creating America: A History of the United States* (Evanston, Ill.: McDougall Littell, Inc., 2002): 87-88.
13. Thirteen/WNET New York "Secrets of the Dead. Lesson Plans. What Really Happened at Jamestown," (New York: Educational Broadcasting Corporation, 2006) www.pbs.org/wnet/secrets/index.html; Historical Scene Investigation, "Document G," (Williamsburg, Va.: College of William and Mary and University of Kentucky), www.wm.edu/hsi/index.html; Historical Scene Investigation, "Document K," (Williamsburg, Va.: College of William and Mary and University of Kentucky), www.wm.edu/hsi/index.html; Digital History, "England's First Enduring North American Settlement," (Houston, Tex.: University of Houston, 2006), www.digitalhistory.uh.edu.
14. Saye and Brush, 2005.
15. Michigan State Dept. of Education, Powerful and Authentic Social Studies (PASS): Standards for Teaching (Washington, D.C.: ERIC ED 415 147, 1996).

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