

**Digital history in an afterschool learning environment:
Developing preservice teachers' pedagogical content knowledge
and the historical thinking skills of youth**

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Abstract

The Digital History Project at the University of Missouri-St. Louis is an attempt to better prepare future teachers of secondary history and improve the historical thinking skills of high school students. Through a technology-rich after school program, students in a social studies methods class and high school youth explored the history of the high school's neighborhood in an open-ended inquiry project. In this paper, we describe the design of this learning environment and report on the first year of research into the results of this effort. Case study research in the after school club demonstrates how youth driven by questions of commonality and differences between generations moved towards chronological thinking; youth driven by a desire to understand why African-Americans would want to move to a segregated city moved toward deeper historical comprehension based on contextualized thinking; and youth driven by the challenges of formulating their identities looked to the past as a resource for understanding the complexity of human motivation as well as how individuals can fit into their own social environments. It further exemplifies how preservice teachers' knowledge of history related to their pedagogical content knowledge, and their ability to facilitate inquiry by youth whose history content knowledge was limited.

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Over the past few years, there has been considerable explication of what it means to think historically (e.g., Carretero & Voss, 1994; Davis, Yeager, & Foster, 2001; Epstein, 2003; Holt, 1990; Leinhardt & Young, 1996; Wertsch & Polman, 2001; Wineburg, 2001). According to this research literature, expert historians think about such issues as placing historical events within context and chronology, considering the differing perspectives of participants in events, and taking the bias and intention of different source documents into account. The teaching of history has turned toward instructional models involving young learners in genuine historical inquiry (e.g., Brophy & VanSledright, 1997; Holt, 1990; Levstik & Barton, 1997; Wiley & Voss, 1996), in order to meet more demanding standards for historical thinking (National Center for History in the Schools(NCHS), 1996). At the same time, technological aids to the teaching and learning of history, most often through some sort of "authentic" historical inquiry involving source documents accessed through hypertext and on the Internet, have increasingly been used (Britt & Aglinskas, 2002; Britt, Rouet, & Perfetti, 1994; Lipscomb, 2002; Polman, 2001, 2002; Spoehr, 1994). Within the context of these developments, future teachers of history face considerable challenges to develop their own content knowledge of history and their pedagogical content knowledge (Shulman, 1987) of how to help youth develop more expert historical thinking. The Digital History Project at the University of Missouri-St. Louis is an attempt to better prepare future teachers of secondary history, through their involvement in open-ended inquiry with youth into the history of their neighborhood during a technology-rich after school program. In this paper, we aim to describe a learning environment meant to foster the development of future

teachers' pedagogical content knowledge and high school students' historical thinking, and to report on the first year of research into the results of this effort.

Overview of Digital History Project

The Digital History Project seeks to engage high school-aged youth and preservice teachers in after-school activities during which they construct web sites about the cultural history of their neighborhood. The design of the learning environment was based on related literature and experience in after school inquiry-oriented and technology-rich learning environments (e.g., Cole, 1996), as well as the research on historical thinking and learning. Prior to the school year, the team developed a website meant to scaffold investigation of the neighborhood's history through a set of teaser questions, overviews, and digitized primary source documents about five themes: "where we live," "where we play," "where we learn," "where we work," and "how we change our community." These themes were carefully chosen as ingredients of an urban community's institutions and social practices. We hoped that they would be recognizable to and resonate with students. They were further chosen to facilitate students' awareness of historians' concerns with continuity and change and contextualization. The on-going significance of such topics point out continuities between the past and the present. At the same time, changes in the individual's experiences within each of these institutions and traditions—leisure, school, work, and activism—illustrate the different contexts of the past and the present. Under the direction of one the faculty members (Westhoff), a graduate research assistant combed through local archives, newspapers, museums and secondary sources to gather primary source materials and write historical overviews. We sought sources that lended themselves to multiple perspectives, variety of presentations (text, images, graphs, newspapers, etc.) and were likely to be of high interest to students. Overviews linked the local experience with broader issues in American

history. Thus a sit-in at a local bank connected to the Civil Rights movement of the 1960s and the story of a local baseball hero was described in the context of the Negro Leagues and baseball history.

By the time the youth used it, the website for the project consisted of an opening page, linked to one of the five major topics, "where we live," "where we play," "where we learn," "where we work," and "how we change our community." Each one of these areas of the site had an opening "splash page" (see Figure 1), which was linked to one or more information pages (see Figure 2). For instance, the splash page for "How we change our community", shown in Figure 1, previews some interesting, and potentially surprising, aspects of the community's history of activism and change. In this case, high schoolers might not know that banks where African-Americans could open accounts would not hire African-Americans, or that protests had taken place right in their neighborhood. By continuing on to the details page on the Jefferson Bank protests (see Figure 2), the youth could learn a bit more about the organization behind the protests, the Congress on Racial Equality (CORE), and their activities, by reading the overview text along the left-hand side. Along the right-hand side of the page were links to historic documents related to the topics (see Figure 2). In this case, a reprint of a document created by CORE, several newspaper articles about the protests, and a picture from a newspaper, were available for viewing. These documents were scanned and stored as Adobe PDF™ files, and in order to follow copyright restrictions, stored in a password protected area for the educational use of the project members only.

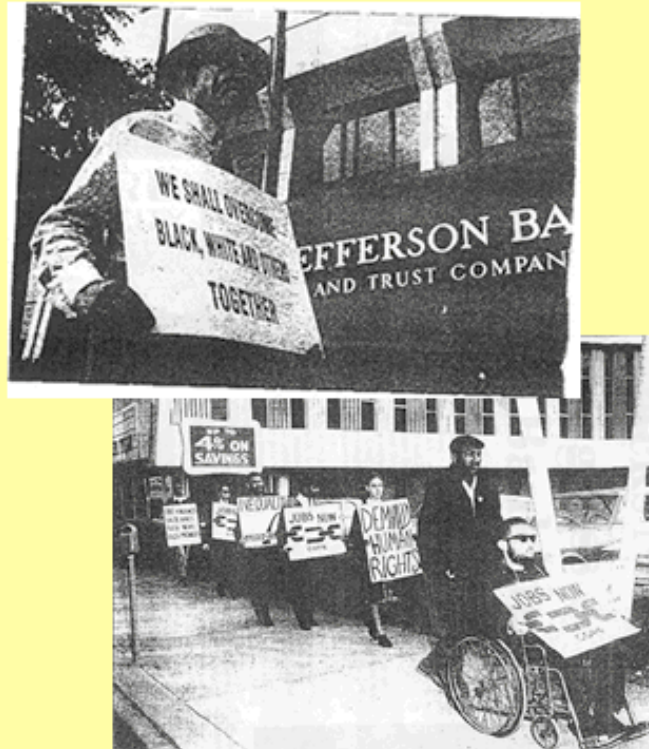
Sit-down Strike

Injunction

How We Change

Did You Know?

- African-Americans were not hired at banks where they had accounts?
- A bank still in existence was the site of a sit-down strike in 1963?
- An integrated group of protesters was arrested for their participation in the strike?



Power

Jobs

Money

Figure 2: Splash page for "How we change our community"

The Congress on Racial Equality (CORE) and the Jefferson Bank Demonstrations



In 1947 at the University City apartment of Irv and Maggie Dagen, a group called Humanity, Inc. met to hear Bernice Fisher speak about the activities of a Chicago based group called CORE (The Congress on Racial Equality). Humanity, Inc. was interested in hearing Ms. Fisher speak because both Humanity, Inc. and CORE-Chicago were organizations committed to seeking solutions to inequality in America. Humanity, Inc.,

was comprised mainly of students from Washington University who sought to integrate the then segregated, all white college.

Bernice Fisher's speech to Humanity, Inc. stressed the need for citizens (white and black) to actively participate in efforts, which sought to bring to an end to prejudice and segregation in America. Fisher's message stressed peaceful, non-violent activities, which were designed to raise the community's awareness of the injustice resulting from racial prejudice. Fisher's message to Humanity, Inc., however, challenged its members to do more than just talk about racial prejudice. She instead spoke of the need for action to challenge the existing discriminatory practices.

Historical Documents

- CORE Precedent Sheet, Picket Lines, reprinted in Mary Kimbrough and Margaret W. Dagen, *Victory without Violence: The First Ten Years of the St. Louis Committee of Racial Equality 1947-1957* (Columbia: University of Missouri Press, 2000), 39

- "Firms Here Tell CORE Job Quota Demands Will Be Turned Down" *St. Louis Globe-Democrat*, August 28, 1963

- "Pickets Push Past Deputies into Lobby" *St. Louis Globe-Democrat*, September 1, 1963


- "Reverend King Defends Injunction Violations" *St. Louis Globe-Democrat*, September 21, 1963

Figure 2: Details Jefferson Bank demonstrations, part of "How we change our community"

As we were developing the web-based resources, we cultivated a partnership with a local public high school and a community-based organization working together to improve educational opportunities for youth in the same neighborhood as our historical focus. In the Fall of 2002, after school sessions began at the high school, with meetings taking place once a week for eight weeks a semester in rooms outfitted with computers on the Internet. In addition to Westhoff and Polman, who led the sessions, a history teacher from the high school and university students enrolled in a secondary social studies methods course acted as facilitators in the program. During the semester, the preservice teachers (PSTs) worked with youth at the neighborhood high school to decide on a focus of their inquiry in the neighborhood, inspect digitized source documents on the website, formulate questions for oral history interviews, and conduct videotaped interviews with community members from different generations. The oral history interviews were recorded on digital video, and the video clips, divided by question, were added to the website so the youth could refer back to the interviewees' responses (see Figure 3).

The youth then worked with the PSTs to come to conclusions about their research questions based on historical analysis, and present their findings on web pages incorporating text, images, quotes, and video clips. As part of their participation in the university course, the PSTs wrote field notes and a final paper reflecting on the implications of the experience on their views of teaching and learning history.

Normay Seay Interview Clips



[Interview Transcript](#)

- [1. How would you compare the way African-Americans are treated now as compared to before the Civil Rights Movement?](#)
- [2. How has your life changed as a result of the civil rights movement?](#)
- [3. Can you explain a little bit about how you went to the bank \(Jefferson Bank\)?](#)
- [4. Do you think that racial profiling still exists now?](#)

Figure 3: Sample of questions high school student asked one interviewee

The project had a multitude of goals for institutions and individuals. The local non-profit community organization sought to support school-university partnerships that would benefit the community and its members, as did each of those institutions. We hoped that the youth would understand their community's history, use technology to develop creative historical products, reinforce basic literacy skills, and develop leadership. Finally, we hoped that preservice teachers

would experience a learning environment that promotes inquiry-based learning, enhance their ability to integrate technology in their teaching, introduce them to high schoolers' historical thought, and familiarize them with the educational needs and potential of the youth.

Theoretical Perspective

Our perspective on learning is informed by cognitive (e.g., Bruer, 1993; Bransford, Brown, & Cocking, 2000) and sociocultural (e.g., Cole, 1996; Vygotsky, 1978; Wertsch, 1998) theory and research. We view learning as an active, social process mediated by the cultural and material tools available to learners. In this view, learning is fostered by authentic participation in a community of practice (Lave & Wenger, 1991), and evidence for that learning is seen by increasingly sophisticated participation by the individual learner in those practices, as exemplified in conversation and action (Cazden, 2000; Rogoff, 1990). This general view of learning has specific implications for the development of what Shulman (e.g., 1987) refers to as the content knowledge and the pedagogical content knowledge of history. As its name implies, pedagogical content knowledge integrates subject matter with pedagogy, and is attentive to discipline specific rules of inquiry and organization and the particular challenges of teaching presented by each subject. For example, a history teacher with a commanding grasp of pedagogical content knowledge will understand history's rules of evidence and argumentation, and especially how to read primary sources, and they will be able to convey those skills to students in the context of teaching historical content. Our view privileges ways of thinking and doing practiced by historians as the most important goals of history instruction (Holt, 1990; Levstik & Barton, 1997), and implies that participation in genuine historical inquiry, conducted in a social context with the technological tools of the information age, could be one of the more

successful means of reaching those goals (Lipscomb, 2002). In addition, this view implies that preservice teachers need to learn how to put the model of inquiry facilitation into practice, with actual learners, in order to best learn the pedagogical content knowledge this vision of history learning requires.

Our framework for historical thinking by youth is the National Standards for History (NCHS, 1996), which concur with various elements of the cognitive research on expert historical thinking (e.g., Carretero & Voss, 1994; Leinhardt & Young, 1996; Wineburg, 2001). The standards lay out five related aspects of historical thinking important to grades 5-12:

1. Chronological Thinking, which includes temporal thinking and recognizing change over time.
2. Historical Comprehension, which includes comprehending a variety of historical sources, differentiating between fact and interpretation, and understanding historical context.
3. Historical Analysis and Interpretation, which includes the ability to compare and contrast, understand multiple perspectives, analyze cause and effect, particularly multiple causations, and understanding the nature of historiography and the tentativeness of historical interpretation.
4. Historical Research Capabilities, which includes the ability to formulate questions, obtain information from a variety of sources, and support interpretations with historical evidence.
5. Historical Issues-Analysis and Decision-Making, which includes the ability to identify issues and relevant historical antecedents, evaluate alternative courses of action, and evaluate the implementation of a decision.

In our discussion of the content knowledge and pedagogical content knowledge of the participants in these historical inquiries, we will make reference to relevant portions of these standards.

Research Setting, Data Sources and Research Methods

This project was conducted in a public high school in a large Midwestern city. In this school, 100% of the students were African-American. 99% were on free or reduced lunch, and 0% of the students performed at or above the standard in 11th grade social studies standardized test. The school is part of a neighborhood renewal effort involving real estate development as well as educational renewal. A not-for-profit organization has been organized to support educational reform and improvement in the neighborhood schools, while still operating within the context of the large urban district. That organization provided contact with the high school principal, who recruited the social studies department chair and another teacher to moderate the after school club. The club meetings took place in rooms equipped with computers and internet connections; there were eight meetings a semester for 1.5 to 2 hours each. Students were recruited by teachers and through flyers distributed at the school; in this first year, attendance was a challenge, with 20 youth coming at least once, but only five who participated in at least five sessions.

The data sources for this research were field notes and videotapes of club activity and the interviews conducted by participants, artifacts created by youth (notes, webpages) and by PSTs (fieldnotes, papers). The research methods were case studies focused on the development of content knowledge and historical thinking of the youth, and the pedagogical content knowledge of the PSTs.

Results: Case Studies of the Development of History Content Knowledge and Pedagogical Content Knowledge

Moving North and Living in Segregation

Kamisha and Elissa were 10th graders who regularly attended the Digital History club meetings in the second semester of the school year. During the first session, when they participated in a group trying to imagine what the neighborhood might have been like fifty years ago, Kamisha and Elissa required a good deal of prompting to engage in the question; their group with three adults and three youth was dominated by adult talk. During the second session, the girls browsed through the website and decided to focus on the theme “Where We Live.” In this section of the website, they encountered newspapers, maps, and pamphlets regarding a 1916 referendum to legislate segregated neighborhoods. A newspaper account and map of the city outlined their neighborhood as one of the four overwhelmingly African American neighborhoods that resulted from the successful referendum. The section also presented information on the migration of African Americans from the south to cities like St. Louis. The incongruence of a city legislating segregation and African Americans from the South moving to that city to escape segregation particularly struck Elissa. She and her partner Kamisha, with the support and input of Steve, a PST, then formulated their research question: "Why did African-Americans who moved to St. Louis to escape the hardships that they faced in the Deep South choose to stay in St. Louis even though they faced segregation and discrimination?"

Having such a well-formulated question led the group naturally to look at various sources of information as evidence. On their website, they make reference to migration of African Americans to the North which was presented in the overview, to oral histories, and interviews

conducted during the course of the semester. While they did not reference primary sources from the website, the girls' first encounter with the primary sources in Week 2 shaped their historical question. Kamisha and Elissa demonstrated growing skills in Historical Research Capabilities, which included formulating questions from encounters with sources and obtaining data from a variety of sources (Standard 4A and 4B). With Steven's help, they took important steps toward interrogating historical data and seeking to understand multiple causations and interpretations for past events (Historical Analysis and Interpretation, Standard 3C, Analyze cause-and-effect relationships bearing in mind multiple causation). In Week 5, the girls listened to an oral history of an 82 year-old man (who was unable to make the trip to the high school for the youth to interview him). The interviewer [an African American teacher at the high school] prompted him "Can you talk about segregation, going to an all-black school." He responded, "That was back in the 30s, and there wasn't no segregation in the schools then."

Kamisha was startled by this response. She had read that St. Louis had imposed housing segregation in 1916, and she knew that her high school was a historically black high school. The disparity between her prior knowledge and the octogenarian's recollection of his experience was clearly troubling and needed some explanation. In Week 7 when the girls began to sift through their notes to outline their narrative, Steve reminded them of the discrepancy in the sources: "One of the things that I thought was really interesting, that would fit in with this [discussion of the community] is that he said, he was asked if there was segregation, what the schools were like back then. And he said that they didn't have segregation, which is not true." He went on, reinforcing what they had previously learned, "You know, there was segregation. But to his memory, the way he remembered it, . . ." Kamisha interjected, "[her high school and two others] were the only schools that allowed blacks." As they moved on from there, the troubling

discrepancy between the sources remained in the back of their minds. The girls also looked carefully at the interviews they had conducted themselves, and found two patterns emerging—lack of violence and sense of community. Indeed three interviewees recalled that the neighborhood was close-knit, a theme that fascinated the girls and which they specifically asked about in the second and third interviews. Mrs. S. reported that “everybody knew about everybody, and everybody took part in everybody’s family.” Mr. B. recalled that “A lot of families knew each other. So, like, I couldn’t do much, because the next door neighbor was going to tell.” Dr. J. explained that:

We had more of a *community* than they do have now. I lived in an area in a place called [his street name], and everybody knew everybody. Families and the entire school community. . . The teachers even lived in the area. . . My fourth grade teacher lived in the area. My second grade teacher lived in the area. So it was really a community.

Confirmed by three sources, the positive experience of living in a close-knit neighborhood impressed the girls and offered them a way to explain the 82 year-old’s mysterious assertion that there was no segregation. Making a plausible, if unconfirmed leap, Kamisha and Elissa noted in their website text that the neighborhood was close knit and and “Some people felt that even though schools were segregated, they didn’t feel like they were being treated unfairly.” Indeed, their site recognized multiple causations for human action (Standard 3E) as it sought to answer their original questions of why African Americans moved North when they would still face segregation. "Job opportunities", a chance to "improve their lifestyles", and relative freedom within a supportive, "close knit" community were all reasons, they posited, based on their work over the semester.

Steve supported their inquiry in a number of ways that illustrated his pedagogical content knowledge. He recognized opportunities for the students to ask follow-up questions of their

sources, in this case interviewees, when they hinted that they might be able to provide additional information. When Ms. S. told the girls that her parents had moved from Mississippi, they failed to ask why. Steve pointed this out to them, and when in a later interview, Dr. J. mentioned his parents had come from Louisiana and Arkansas, Kamisha immediately asked for more information. His understanding of the importance of asking the right questions of sources—in this case interviewees—was critical. He was further attentive to the lessons that working with primary sources provide historians and the challenges such sources pose for students who are unsure what to do with discrepancies in documents or are likely to discard evidence as “wrong” rather than ask the more complicated questions of what different and conflicting evidence can tell us about the past (Standard 3H). His careful questions facilitated the students’ success in these areas, though he did not find it easy. “There were times when I really struggled to let my students struggle with the material. Whenever they encountered something difficult or came to a point where they didn’t know where to go, I tried to encourage them by asking them questions that [helped] them focus in on where they need[ed] to go with something or find the appropriate answer.” He connected his own learning process here back to a classroom textbook:

I’m reminded of one of the examples . . . where a student was struggling to understand a sculptor’s meaning. Rather than just telling the student what it was about, the teacher asked the students questions in order to help him rule out what the sculpture wasn’t about . . . Most of my involvement consisted of prodding and encouraging them in the direction that I felt that they wanted to go. There were certain times that the girls needed either some redirection or simply a reformulation of ideas in order for them to take the next step, and I tried to be available for them to use as a resource.

Finally, Steve's comfort with using multiple sources for research was evident, and he was able to model and encourage Kamisha and Elissa at the outset to consult a variety of materials and keep notes on them. His role in this process was more significant than he realized, and his satisfaction justified: “By the second to last session, when we began writing our text, Elissa and

Kamisha were able to process through all of our notes with an almost professional acuity for that which was relevant, easily discarding that which did not fit into our topic.” Steve helped them in this process by asking often, “Is that important?” to their argument, as they commented upon their notes. “Tracking this growth was one of the most exciting and impressive things that I encountered during the course of the semester.” he said.

Kamisha and Elissa engaged in the historical challenges of using the evidence from oral histories, cartoons, maps, and newspaper articles to make sense of previous generations' experiences. Steve developed his role as a facilitator who asks questions, and has the patience to let learners struggle, while simultaneously supporting their skills at making sense of source materials.

Changing the Community

Carlos was a tenth grader who participated in both semesters of the after school club, although he missed meetings periodically and worked with a wide variety of pre-service teachers. Carlos came upon our after school club by happenstance—during the third session he happened to come into the room to ask his English teacher, whose room we met in, a question. He was interested in what we were doing, and we invited him to stay. On that day, he began working with a PST named Shannon in order to focus in on an issue of interest. Carlos was not born in St. Louis, and did not live in the neighborhood we were studying and the school was in, so he had some interest in the differences between other cities he had lived and that part of St. Louis. He was also interested in businesses, so was intrigued when he and Shannon looked at a 1924 article in a black-owned newspaper mentioning there were no black-owned hat or clothing

stores, banks, or pawnshops. They discussed focusing on black-owned businesses in the neighborhood.

Carlos missed the following session of the after school club, but attended for the second time at the fifth meeting of the group during the first semester. That was the session at which the youth conducted oral history interviews of two couples and an individual. The individual was Norman Seay, whom Carlos interviewed. Shannon informed Carlos Mr. Seay had "participated in the Civil Rights movement in St. Louis, was arrested for his activities, and met Dr. [Martin Luther] King." Another student noticed how "Carlos' eyes got large as he asked in disbelief, 'Who? Which one? That man right there?'" A PST named Matthew, who had worked on the historical research as a graduate student and was thus very familiar with the Civil Rights history, helped Carlos briefly prepare questions for Mr. Seay. Carlos stated an interest in how African-Americans were treated now as compared to before the Civil Rights Movement, and he carefully wrote out the question. Matthew suggested he could be more specific about whether he meant social life, family life, business, or school, but Carlos insisted he was interested in Mr. Seay's response to the general question. Based on Matthew's explanation, Carlos also wrote a note to himself to ask about the organization to which Seay belonged, the Congress on Racial Equality (CORE). Then it was time for the interview. In response to the question about how life had changed, Mr. Seay described how laws as well as traditions that enforced segregation had been changed. Carlos then asked, "How has your life changed as a result of the civil rights movement?" and Mr. Seay spoke of his satisfaction at fighting discrimination. Mr. Seay spoke of it as a continuing wound, however, and that he still evaluates whether he is being discriminated against when he goes into a new restaurant. He took obvious delight when Carlos asked him

about the protests at the bank, and described how he and other protesters picketed, spent time in jail, and eventually achieved fair hiring practices for African-Americans in the city's banks.

Near the end of the interview, Carlos asked about the topic he had planned to be his main focus, black-owned businesses. He asked, "How do you feel about black-owned businesses in the community? Do you feel we are rising above?" Despite Carlos' focus on the present in the question, Mr. Seay mentioned that there were many Jewish-owned businesses previously in the neighborhood, before talking about the general lack of black-owned stores in the neighborhood today. Carlos' question did not necessarily reflect a "present-minded" comprehension of the past, so much as a preoccupation with how to judge and act in the present, but nonetheless it gave him little information to shed light on the changes in black-owned businesses over time, and he did not end up incorporating this topic into his web pages.

Instead of focusing on black-owned businesses, Carlos was inspired by the experience of interviewing Norman Seay to focus on "segregation, protests, and demonstrations." Two PSTs worked with him the following week to make sense of the interview, and plan his next stages. He reviewed portions of his interview, as well as another that had mentioned the Jefferson Bank protests. Despite repeated encouragement from the PSTs, Carlos did not take notes as he was reviewing the interview and a related newspaper article the PSTs shared with him. He was either unwilling, or unsure, of how to go about selecting material to be noted. One of the PSTs wrote down some of the ideas that he stated verbally, but they were initially unable to successfully use guiding questions to draw him out much. As one of them said, "it was like pulling teeth to get him to make a response about his own ideas." They began making progress when they moved from higher-level interpretation issues to more concrete questions about the pictorial content of his web pages. Deciding on a specific image to include led to more discussion and decisions on

the content and layout for his webpages. Carlos decided on an introductory page, with links to a page about his interview with Mr. Seay, a page about the Jefferson Bank protests, and a page on "What can you do to change the neighborhood?" When one PST asked him what he found interesting about the interview, he said it was a "once in a lifetime experience," and he included this reaction on the web page text. With much encouragement from the PSTs to build on and elaborate each statement, he composed the following text:

I think that this interview is a once in a lifetime experience, because he is knowledgeable and you don't get to talk with someone with those experiences. In the 1960's he met Martin Luther King. He met a long time resident of this neighborhood at every protest during this time period. He talked about the Jefferson Bank Protest.

In addition to the possibility of shyness and unwillingness to be judged by relative strangers contributing to Carlos' difficulties in working on an interpretation of Mr. Seay's interview, a number of historical thinking issues may have interfered; specifically, a lack of factual knowledge about the chronology of events related to the Civil Rights Movement, as well as the perspectives and experiences of the participants in such historical events. Nonetheless, the PSTs strove to help Carlos make sense of various sources, recognizing that Carlos found the interview responses—and specifically those to the questions *he* asked—easier to use than the newspaper and other written sources. In addition, the concrete specifics of involvement—Mr. Seay met Dr. King, and he spent time in jail—were more salient to students than the broad sweep of the social groups involved in the movement. With encouragement from Matthew, Carlos included two quotes from the interview with Mr. Seay on his web pages, and a quote from a newspaper as well. This first quote from a print source itself quoted Mr. Seay ("they hadn't expected that we would be that well organized"), perhaps making it more accessible than other print sources. Thus, one individual's perspective on history provided a bridge for the youth to

understand how historical research is done utilizing other sources that quote people and provide their perspective.

In addition to information on his interview with Norman Seay, Carlos put a page in his website about "What could you do to help your neighborhood." Interestingly, thinking about the impact of decisions within different historical contexts, an aspect of "historical issues-analysis and decision-making" (NCHS, 1996), played a role from Carlos' first day at the club. When he and Shannon looked at the newspaper article from 1924 mentioning a lack of black-owned clothing stores and banks, they noticed the article suggested that African-American youth of 1924 consider changing that state of affairs. Later, he asked Norman Seay how *his life had changed* as a result of the Civil Rights Movement, not just what role he had played in the movement. During the second semester, Carlos would ask Dr. J, "How did you stick with your views and beliefs when you went out into society?" In addition, he asked "What do you think that black people can do to, you know, kind of get back on track?" Carlos was interested in how the enduring concern with taking direct action to improve the community, which Norman Seay exemplified so dramatically during the Jefferson Bank protests, could be applied to the different context of the neighborhood in the early twenty-first century. But he had difficulty in expressing his ideas on this, and especially making them actions students could do. In the second to last session of the first semester, Carlos finally made some progress on this page about "what you could do." Westhoff encouraged him, saying "you should think big here ... and I bet Norman Seay didn't think small or think things were impossible before he began his activities at CORE." Matthew followed this by asking Carlos, "What did Norman Seay do? That might give you ideas, even if they don't apply today." Carlos replied, "complain if you don't agree with the government." He then began writing bullet points down, including " get involved in community

service, joining school clubs, voting, protesting unfair government actions, and supporting local business."

Using the past as a tool to think about acting within the context of the present is especially dangerous when you have ill-formed ideas or misconceptions about the past. As Carlos' ideas emerged within the course of his inquiry, the PSTs were able to challenge his misconceptions or hasty conclusions. For instance, Matthew took the opportunity to push Carlos to clarify his idea of "complaining if you don't agree with the government." Carlos saw this as what Mr. Seay was doing before discrimination in hiring based on race was made illegal. This idea manifested a lack of historical comprehension to Matthew. The PST asked Carlos if the Jefferson Bank was owned by the government, and Carlos said "yes." The after school club was too brief to make up for all Carlos' gaps in understanding the historical context of the Civil Rights Movement, but this was one opportunity the inquiry offered for correcting a "monocausal" misconceptions of historical analysis and interpretation. In this case, the PST sought to help Carlos see how government did not act alone in practicing discrimination; instead, discrimination was carried out in many cases by business owners, and simply allowed to exist until protesters such as those in CORE pressured those businesses as well as the legislative and judicial branches of government to stop discrimination.

During the second semester, Carlos worked with Jo, an aspiring museum professional who was enrolled in the methods of teaching social studies course. Jo had a year's worth of experience as a research assistant working on historical and archaeological research about another neighborhood in the city. Her facilitation of Carlos' work suffered to some degree because she sometimes had unrealistic expectations of his interest (for instance wondering why he didn't go to the library between sessions to work on this free-choice, out-of-school activity),

but her familiarity with how to work with primary sources benefitted their work together. She brought in several apt sources that Carlos worked with, and he built on the foundation he had gained in the previous semester to successfully incorporate this important aspect of historical research (Historical Research Capabilities, Standard 4B, obtain data from a variety of sources, NCHE, 1996). He added a page about the neighborhood redevelopment group's history over the past forty years, using quotes from Mr. Seay as well as three different newspaper articles and a book. Carlos also filled out the previously planned page on the Jefferson Bank protests with a narrative explanation, supported by quotes from participants:

From August 30, 1963, until March 31, 1964, Jefferson Bank and Trust Company was the scene of a seven-month-long demonstration, organized by the St. Louis Chapter of the Congress of Racial Equality (CORE). The demonstration was aimed at forcing the bank to hire four black clerical workers. Among those taking part in the protests were community leaders such as Robert Curtis, Core president and activist Norman R. Seay. The demonstrations finally ended when the bank hired five black clerical employees.

“The papers were calling them agitators, so we decided to picket to show that professional people supported them.... The midnight rallies went on for a month or so. It was an effort of the whole community,” said Dr. R Jerome Williams, one of the later picketers.

“I believe we have to fight with the same type of weapons as the man with his foot on our neck. We were concerned with jobs, not promises. Promises haven't got us anywhere.”- Robert Curtis –St. Louis President of CORE.

In these texts, Carlos demonstrated aspects of chronological thinking (Standard 1F, historical succession, continuity and change, NCHS, 1996), historical comprehension (Standard 2F, historical perspectives), historical analysis and interpretation (Standard 3D, drawing comparisons across eras in order to define enduring issues, in this case redevelopment of a struggling community), and historical research capabilities (Standard 4B, obtaining historical data from a variety of sources). Some of his insights in the second half of the year showed development in his historical thinking. One day, he reviewed data on the website about businesses in the neighborhood, and noticed that the number had decreased from 1935 to 1970.

Rather than taking this as an isolated fact, he realized that his understanding of the Civil Rights Movement would imply that more of the primarily African-American citizens of the neighborhood should own businesses, but this was not the case. So he raised questions in an oral history interview about the relationship of black-owned businesses and the Civil Rights movement. A frustration Carlos expressed in the penultimate club meeting also exemplified the progress he had made as a historical thinker. He said to one of the authors [Westhoff], "I just wish I had more information." She told him, "I understand your frustration. But you have what you have, and you've got to use what you have. That's all that historians [can] ever do ... it's the hardest thing in the world, because you have high standards for yourself, and you want to know as much as you can." Carlos' frustration came from his growing recognition of an aspect of historical analysis and interpretation. Since he understood interpretations of history are tentative, subject to changes as new information is uncovered (Standard 3H), he wanted to have more information before taking a stand. His experience in the club pointed out to him the necessity of another aspect of historical thinking, "identify[ing] the gaps in the available records and marshal[ing] contextual knowledge and perspectives of the time and place in order to elaborate imaginatively upon the evidence, fill in the gaps deductively, and construct a sound historical interpretation" (Standard 4D, NCHS, 1996).

Throughout the two semesters, the PSTs' work with Carlos reveals important aspects of pedagogical content knowledge. All the PSTs had to be careful to not yield to Carlos' appeals to tell him what he should write, but the kind of guiding questions that were effective in working with him changed over time. At the beginning, he made more progress when guided to make concrete decisions about content such as what picture to include, but then he made increasingly sophisticated use of the Seay interview, and finally other historical sources, under the guidance

of the PSTs. In addition, the PSTs' content knowledge about sourcing related directly to their ability to facilitate Carlos' use of sources. Matthew and Jo, who had experience as research assistants in history using a variety of sources, were much more able to guide Carlos in the use of print sources than the other PSTs with whom he worked. All of the quotations from print sources he included were added during sessions when he was working with Matthew and Jo, the PSTs more experienced at conducting historical research.

Understanding Changes in Leisure Time Activities

May was an eleventh grader who participated both semesters in the after school clubs. Initially she seemed most interested in using the technology to display her interest in music, social life, and pop culture; she needed prodding to include a historical dimension. May's knowledge of one of the most basic historical principals, chronology and change over time was limited, and thus the PSTs who worked with her focused on helping her understand that leisure time activities and teen culture were different in the 1920s, 1950s, 60s, and 80s. They also tried to help her use a number of different sources—oral histories, text-based primary documents, materials available on the internet—to construct her knowledge of the past.

May's path into historical thinking was driven by her desire to compare and contrast her leisure time and interests with those of the particular individuals from previous generations whom she was able to interview. In the second meeting, May interviewed Ms. J., a teacher at her school who had grown up in the neighborhood in the 1940s and 1950s. May's questions revealed her interest in teen culture. She asked questions such as "Was there TV or Radio?" "What was the type of clothes that you wore?" "Did you eat fast food?" "Were there any clubs where you grew up?" These questions provided her with a basis from which to compare her life

and Ms. J's teen years, though her chronological thinking was still simplistic (Standard 1, NCHS 1996). Elizabeth, the PST who worked closely with May over the semester, observed how she struggled at the outset to understand the nature of historical change:

When I first began working with May her historical thinking skills were at a very basic level. . . In reflecting upon Ms. J's interview from the previous week, May made a 'then/now' list in her yellow notebook. She placed comments Ms. J. made about various aspects of her childhood under the 'then' column and then contrasted Ms. J.'s comments with comments of her own under a 'now' column. While doing this May made several comments that made me believe she was not placing Ms. J's comments in an historical context (on a time line of continuity and change). She seemed to believe that Ms. J's comments represented the entire history of the neighborhood and not just the time period Ms. J grew up during.

Linda, another PST working with Elizabeth that session, observed a similar tendency to see an undifferentiated past, suggesting May's limited understanding of chronological change and historical context. The two PSTs introduced May to a primary source, movie listings from the 1920s, but with little success. After spending considerable time helping May with the intricacies of reading a primary source, Linda commented "I am not quite sure if May connected very effectively with the primary document. . . I think that her sense of the past is right now primarily formed on the basis of what Ms. J. said and that she does not yet grasp the differences between the neighborhood in the 1920s, when our newspaper primary source was written, and the neighborhood Ms. J. remembers from the early 1950s."

Yet May did make progress in developing a chronological framework for displaying changes in pop culture and music uncovered through the oral history interviews. In a subsequent interview with Mr. C and Ms. G., two members of the community organization, May asked questions about leisure time similar to those she had asked Ms. J. The differences between their answers and those of Ms. J. helped her begin to process the differences of change over time, and to grasp that there is not a single "past" that is different from today. The PSTs were attentive to

this developing framework and helped facilitate it. Shannon, a career transitions PST with a previous MA in history, pointed out that “Mr. C’s and Ms. G.’s grandparents were probably close in age to Ms. Jordan.” Her fieldnotes on that session indicate that she was attentive to the need to build May’s history skills, bit by bit. Her comment was calculated to facilitate May’s chronological thinking:

Part of the process should be to provide a historical context for each person interviewed. From that they can eventually move on to asking the question do people of certain generations share similar thoughts, memories and concerns? Are there huge differences in the lives of Ms. J and Ms. G and what are they? In what ways are they similar? How do the large historical events of the time effect everyday life?”

This interview and Shannon’s careful facilitation of May’s thinking, seemed to make a difference when it came time to construct the website. Elizabeth observed “that her understanding of the comparisons between Ms. J’s, Mr. C’s and Ms. G’s, and her own childhood seemed much more clear. . . May’s historical timeline is quickly emerging. Watching May’s historical thinking skills develop and grow was one of the greatest rewards of this project.”

Elizabeth’s positive characterization of May’s progress stands in striking contrast to Peter’s experience with May a semester later. Having completed the first session, May enthusiastically returned for the second semester’s sessions, where she worked with Peter, an undergraduate PST. She was anxious to develop her interest in music during this session, announcing to Peter when she met him during the first week of the second session “that music was a real love of hers and that she wanted to know who was really popular back then.” While her reference to back then revealed her loose conception of an unspecified past, which she had struggled with the first semester, she articulated her desire to learn about music from a different time period. But rather than view her personal interest in music as a means to build May’s historical thinking skills, Peter struggled to find a way to facilitate that process. Peter

commented that May's lack of basic skills seemed to prevent her success. "She really did not have many higher order thinking skills. I believe this played a role in her inability to think in terms of a historical perspective and her inability to really research and write appropriately for the final website. Over the course of our visits I really did not see much of a change in May's outlooks on history and her skills as it relates to research and writing." Peter equated May's historical thinking with traditional performance tasks—research and writing. But he was at a loss as to how to facilitate this process in a context specific to historical inquiry. Unlike Elizabeth and Shannon who asked guiding questions about her interest in the past, offered information about context that was relevant to the high school youth, or helped find other sources, Peter found it virtually impossible to work with a student who "was not able to formulate correct sentences and other basic tasks that you would think were second nature to a junior in high school." When her product was not up to his standard, he assessed her intellect as poor. In a subsequent third semester of the project, Peter worked with Kamisha and Elissa, whom he similarly described as lacking reading and writing skills; he commented that neither "exhibited higher level thinking skills," a very different conclusion from that which Steve drew about them the previous semester. Peter's quickness to associate students' lack of skills with lack of ability to think historically compounded the limitations in his own lack of pedagogical content knowledge. Consequently, May made little progress in the second semester.

Peter's lack of attention to May's historical thinking and his inability to facilitate it in this context suggests that he and other PSTs operated with both different historical epistemologies and levels of facilitation skills. It is possible that he found May's interest in popular culture troubling in that it was not the kind of historical content he had learned or been prepared to teach. For him, it was not a tool to teach the difficult skills of historical thinking, as it had been

for Elizabeth, but was an indication that May simply was not interested in and could not learn history as he defined it. In working with Kamisha and Elissa, he also conflated their ability to think about the past with their specific content knowledge. “Both of the girls told me that they had never heard of most of the stuff we were researching.” He concluded that “they really weren’t able to think about the past. But Elizabeth, Linda, and Shannon all found her interest in teen life and popular culture promising. “It is not a surprise that high school students would be more interested in the more trivial subjects of clothes, food, clubs, school, and parties—topics that they are interested in and can relate to,” Linda wrote. She saw potential in using such interests to begin to teach chronological thinking skills. “Those subjects actually make very good reference points for observing changes over time and can be a good way for them to begin to show an interest and gain an understanding of the past.” Like Peter, Shannon observed that high school students like May “were clearly interested in knowing very concrete kinds of information.” But rather than lament the students’ lack of abstract thinking and reasoning, she found in this approach epistemological possibilities for doing history. “From the answers they received [to interview questions] they could construct a sort of ‘day in the life of. . .’ scenario which is the first step in being able to visualize every day life for teenagers in Ms. J’s day. What makes this particularly instructive is how it illustrates that all of us, not just professional historians are able to begin the process of constructing a social history of the past.” May’s development of a student of history was limited, particularly since she never did develop an understanding of using primary sources. While other students were able to engage productively with a variety of primary sources, May tended to focus on data from her own interactions with individuals, and struggled to make use of a plethora of other available data about popular music. Our observations of her experience suggests other important issues in preparing future history

teachers. The PSTs who worked with May drew very different conclusions about her ability to think historically and her potential as a learner, because of differences in the way they viewed historical content knowledge and their own levels of skill in facilitating pedagogical content knowledge. Elizabeth saw May's understanding of historical continuity and change develop, whereas Peter interpreted May's lack of basic skills as an inability to understand history.

Conclusions

The Digital History after school club was an environment that freed participants from traditional images of schooling, while challenging us to improve how teachers facilitate historical thinking. Youth had the opportunity to explore history using authentic historical inquiry practices: they "did history" by asking questions that they cared about, interrogating documents and other sources for insights, and trying to reach conclusions supported by their analysis. A year of research in this setting, detailed in the cases above, revealed a number of persistent issues at the intersection of students and teachers dealing with historical content and process. The fact that the youth came to this program with a paucity of factual knowledge about the past, including details about the Civil Rights Movement and how people lived in different time periods, put them at a disadvantage. As one PST put it:

in order for knowledge to be “constructed” individuals must both be aware of certain information and in turn react or engage with that information to really *know* it. With regard to the students [in the program], their lack of awareness pertaining to important historical events and the impact those events had on their communities precluded them from actively engaging with the information in a meaningful way.. . But to make the wider connecton to the historical context, they must have the background knowledge that can make the inquiry process complete. For the Digital History Project to be successful, the students must be expected to have some background knowledge of the time period

they are researching. In order to ask an intelligent question, students must have the benefit of a body of knowledge from which to frame those questions. When face to face with individual who not only lived through some very important events, but also were intimately involved in them, the students were relatively incapable of asking questions relating the events and their participation in them.

Thus, the PSTs who worked with these youth repeatedly ran into gaps in factual content that they had to work at "patching" in order to conduct historical research. Nonetheless, the formulation of questions that were meaningful to the youth, when supported with strong facilitation by PSTs and direct encounter with people who could report on their experience of the past, could—and did—help drive the youth to develop both their content knowledge of history and their process skills such as using sources as evidence. In contrast to much of their own schooling, the PSTs saw in this program how they could "serve as guides" rather than mere disseminators of information. Their effectiveness as guides depended strongly on their own knowledge of history—from factual knowledge about particular eras and movements, to knowledge of how to use sources. The PSTs used their history knowledge to help formulate questions tied to the history students were doing ("how does that support your argument?"), challenge assumptions ("did the government own the bank?"), and prompt for action (can you explain the discrepancy between the legal fact of segregation in the 1930s and how the community was perceived positively?). In contrast to practice teaching activities in the college classroom, this environment brings to life for future teachers the unique perspectives and cognitive potential of high school youth as they engage in the process of making sense of history.

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