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By **T. Mills Kelly**
**.01. Introduction**

When we think about the future of teaching history at the college level, one thing we know is that the hypermedia revolution of the past decade is changing irrevocably many of the ways we teach our students about the past.(1) Recent surveys indicate not only how rapidly this transformation is taking place, but also that historians are rushing at an incredible pace to make the new technologies our own.(2) Almost half of those responding to a 1998 survey by the American Association for History and Computing indicated that they had already created course sites on the web, 80% reported using technology in teaching, and just under half require their students to use e-mail for course purposes.(3) Another recent survey, this one of college students age 18-24, reported that almost three-fourths go on-line at least once per day, up from only half just one year ago. Nearly 40% of students surveyed reported having their own web pages.(4) Such rapid changes in history teaching and student use of technology are but one small part of a nationwide push to bring our educational system into the digital age. Starting right at the top of the funding pyramid, government and private agencies, as well as individual educational institutions are throwing unprecedented amounts of money at teachers at all levels, in hopes of bringing to fruition the goal articulated so often by former President Bill Clinton, of building a "bridge to the twenty-first century … where computers are as much a part of the classroom as blackboards."(5)

Too often, the discussions about how these new technologies are changing what we teach and how our students learn take on an either/or quality that ultimately does not prove very helpful. Critics such as Sven Birkerts and Neil Postman like to cast the consequences of the hypermedia revolution in apocalyptic terms. For example, Birkerts argues that hypermedia will forever change the relationship between the historian and his or her audience: "As the circuit supplants the printed page, and as more and more of our communications involve us in network processes– which of their nature plant us in a perpetual present–our perceptions of history will inevitably alter."(6) In Birkerts' view, this change will be for the worse, rather than for the better, because

he believes hypertext breaks down the reader's capacity to think deeply about history.(7) Conversely, even the most academically rigorous techno-enthusiasts such as George Landow and Jay David Bolter are often given to optimistic pronouncements about how the web and its associated technologies will lead our students to insights about their classroom subjects unobtainable from good old fashioned books.(8)

Historians attempting to find appropriate uses for the new information technologies in their classrooms are thus confronted with a theoretical literature that too often casts any decision to use hypermedia as almost wholly positive or negative. At present, historians know very little about how our students learn about the past at all, much less when we inject various media into the learning process. To date, only Samuel S. Wineburg has done in any depth research on this particular question, and one of Wineburg's more instructive conclusions is that historical thinking is a fundamentally "unnatural act [that] actually goes against the grain of how we ordinarily think."(9) If historical thinking is, as Wineburg argues, a fundamentally unnatural act, then it is no surprise that our students have a difficult time learning to manipulate historical evidence in sophisticated ways, that is, to "think like historians."

Given that historians do not know very much about why or how our students actually "get it" in our classes, it is challenging to assess just what influence the use of hypermedia technology is actually having on their learning. My own research project is a first attempt to get at this vexing question, and, like most research projects that historians undertake, it began with an innocent query. Several years ago I was teaching at Grinnell College in Iowa and was fortunate enough to work with the great Russian historian Dan Kaiser. Over coffee one day, Dan, who is also quite enthusiastic about the possibilities posed by the use of hypermedia for teaching history, asked me a question that changed my entire outlook on what we are engaged in as we become one with information technology. That simple question, seemingly so straightforward, was how I knew that directing my students to my website, giving them on-line access to primary sources, forcing them to do research on the web, and even having them construct their own websites, was changing for the better the way they learned about the past?(12)

Until that moment I had been so intent upon the creation of my site, posting my on-line syllabi, scanning and marking up texts, inserting useful URLs into assignments–in other words, focused entirely on changing my pedagogy–that I had given little thought to what these changes meant for my students' learning. Badly afflicted with FDS (Field of Dreams Syndrome–"if you build it, they will come"), I had lost sight of one of the most essential goals of the teacher, namely, designing my courses in ways that improved student understanding, rather than simply making the course more interesting, fun, or just easier to teach.(13) Certainly, not all the blame lies at my own door because my students were themselves partially guilty in this enterprise. All the feedback I received from them was how much they loved what I was doing with the web and how much they wished their other professors were doing similar things. For example, in a recent end of semester survey, 90% of the students in one of my courses reported that they preferred a course taught using the web to one taught using print sources. Certainly, student satisfaction is not the same as student learning, but such resounding endorsements are difficult to ignore

altogether.

### .02. Research Model

With no body of theoretical or empirical research that addresses the issue of how student learning in history courses is changed by the interposition of hypermedia into the course, it became necessary to begin to construct a research model that can bring us closer to answers to this and other questions about what goes on in the history classroom. The model used in this project is informed by the scientific method, but like most classroom research, does not include the sorts of double blinds and control groups available to the cognitive psychologist. It is nonetheless capable of providing the researcher with both rich opportunities for analysis and for drawing properly qualified conclusions.(14) To date, most of the debate on either side of the question of how hypermedia influence learning emphasizes hypertext (and images fed to the screen along with that text), rather than hypermedia as a whole–sound and video files to go along with the text and images–and until our campuses are sufficiently wired with multimedia workstations, most of our research questions will have to revolve around the more limited text/image delivery systems of the web. The research described in this essay was limited to questions about student use of hypertext and images because Texas Tech University has limited capacity to deliver the full range of hypermedia to students. Thus, in fairness to those students who do not own their own computers (about 40% in my sample population) I cannot require hypermedia assignments that use sound or video.

When it comes to student use of hypertext and images, web-enthusiasts argue that when students are confronted with an intellectual problem, heading to the web opens up the possibility of embarking on their own unmediated intellectual quest. In other words, once they go surfing off into the distance, they are pursuing answers to their questions rather than their instructor's. They are therefore more likely to arrive at original insights into the material under consideration. Those less enamored with the web argue that when students embark on this quest, the individual's thinking is just as likely to become disorganized as he or she flits from one hyperlink to another and that before long the student will have forgotten the original question. Moreover, even if they can stay focused on their task, students are just as likely to find themselves at a site of dubious provenance and so may end up writing a paper or answering a question in class with information that is anything but reliable. If these arguments sound a bit familiar, it is because one could simply substitute "library" for "web" and find that with the proper skills our students can do very good work or that without those skills, they can find themselves in real trouble.

Although it is certainly impossible to forge an agreement among historians about what content students should learn in any particular course, it is very possible to agree on a set of competencies that students should acquire and develop as they progress through our introductory courses. (15) Among those that we tend to agree on are the ability to construct essay arguments with the appropriate use of historical evidence, to differentiate between fact and opinion and to be able to discern the interrelationships between the two, to comprehend continuity and change over time, to understand what historians do and the sorts of questions they ask, and so on.(16) Using a variety of measures such as these, I evaluated student

performance in four sections of Western Civilization (the modern half) at Texas Tech University during the 1999-2000 academic year. For several years, this course has been taught through a web site, but not as a strictly on-line course. Students still meet with the instructor weekly, but receive all of their learning resources (readings, images, etc.) via the class website and use an on-line discussion forum. In the fall semester, a new version of the course and various survey instruments were pilot tested and both sections of the course were taught via the class website. In the spring semester, one section used the same website, but the students in the other section received copies of all their learning resources (which were simply printed from the website) and were blocked from the website.

## .03. Data Collection

Data were collected from students in a variety of ways: several surveys were administered at various points in the semester, an outside evaluator visited each section of the course at the mid-point of the semester to interview the students without the instructor present, several students were selected from each section for in-depth interviews after the semester ended, and student essays provided valuable evidence of student learning (or the lack thereof). In addition to the instructor's evaluation of student performance, a panel of outside evaluators read randomly selected student essays from each section and used a standard instrument to evaluate each essay. These data make it possible to come to a clearer understanding of exactly how students actually use the technology and what role the technology plays in their learning about the past. This essay presents the essential conclusions from the analysis of the data. All of those data, as well as samples of the instruments used to collect it, narrative descriptions of the research project and the course that was at its core, are all available in the course portfolio created as part of the project.(17) The portfolio site also includes commentary from those who have visited the site and reviewed its data and conclusions, so it is constantly evolving.

## .04. Conclusions Regarding Student Learning

As the data from the project were analyzed, several conclusions about student learning emerged. Good historians return to the same pieces of evidence repeatedly, considering many possible meanings of their sources before finally committing themselves to one interpretation. Therefore, we hope that our students will learn this skill, not only because it is an example of what we like to call "critical thinking," but also because it is one very important way that they develop a stronger sense of the interrelatedness of historical evidence and of change over time. Given the current debates about how the web influences student learning, for good or ill, one question that this project addresses was whether at later points in the semester students returned to primary source documents assigned earlier in the semester, and if so, how the results of that recursive reading were incorporated into what the students wrote. Students in this course were asked whether or not they had gone back to primary sources used earlier in the semester and, as Table 1 indicates, approximately three-fourths of those enrolled in the sections of the course taught through the website said they had done so. By contrast, only 25% of those enrolled in the print section of the course returned to material assigned earlier in the semester as they worked on later assignments. The final papers turned in by the students bear out their answers in the surveys because the essays written by students in the web sections reflect a fairly

high level of recursiveness and a stronger sense of the interconnectedness of historical events. Not surprisingly given the survey data, the essays written by the students in the print section displayed not only significantly less use of earlier sources, but also a weaker grasp of historical causation.

In the interviews conducted with a selected sample of the students in each class section, their work patterns were explored in more detail and all students were asked why they did, or did not, return to earlier sources as they prepared essays for the final half of the semester. All of the students interviewed from the web-based sections reported that because the documents they looked at from earlier in the semester were "just a click away," they were much more likely to use them. When asked if they would have done the same thing with documents supplied in a course pack, all but one demurred, saying that, as one student put it, "having all that paper to sort through" would not be as immediate as a hyperlink. As another student said in her interview, the web "is just easier to use than a book." Students from the print section were more instrumental in their descriptions of how they prepared their final essays, describing a process whereby they relied on the source documents that most obviously related to the assignment at hand. When asked why they did not go back to earlier documents, these students typically responded that it did not seem necessary, and so simply had not done so.

Two conclusions arise from these findings about student recursiveness. The first of these is that the ease of access students have when their source documents are made available on a web site does encourage and facilitate the quality of recursiveness that we try to instill in our students in ways that having the same documents provided in a course pack does not. Access alone, however, is not the answer. Students saw the links imbedded in the documents as both permission and encouragement from the instructor to return to earlier sources and began to view all of the sources connected via hyperlinks as some sort of larger (hyper)text. It is possible to imagine how course and assignment design would trump technology when it comes to facilitating recursive reading of sources. However, a larger consideration is which of the links students chose to follow, because these choices helped dictate the final analyses they reflected in their essays. An intricately interlinked set of primary source documents makes it possible for students to construct or reconstruct their own meta-text in ways an assignment in print alone, no matter how well designed, cannot. From this finding it is likely that students encountering sources via the web will experience an increased awareness of continuity and change over time as they attempt to make connections between the sources they read earlier in the semester and those they are working with toward the end of the term.

### .05. Tables

| Table 1[132] | **All Students** | | | |
|---|---|---|---|---|
| Percent answering yes | Fall 1999 (Web) | Fall 1999 (Web) | Spring 2000 (Web) | Spring 2000 (print) |
| Did you return to earlier sources? | 66% | 80% | 79% | 26% |
| Did you leave the website to venture out on your own? | 28% | 72% | 52% | N/A |

| Table 2 | History Majors Only | | | |
|---|---|---|---|---|
| Percent answering yes | Fall 1999 (Web) | Fall 1999 (Web) | Spring 2000 (Web) | Spring 2000 (print) |
| Did you return to earlier sources? | 66% | 83% | 82% | 100% |
| Did you leave the website to venture out on your own? | 66% | 83% | 54% | N/A |

By contrast to their active use of the primary source documents assigned during the semester, students in all four sections of the course hardly used the textbook at all. Students were encouraged to use the textbook as a resource rather than as the foundation on which their learning would be built, and so it is not surprising that the textbook was not heavily used. Further, two structural aspects of the course facilitated their avoidance of the textbook–grading was based on essays and participation and so there were no examinations, and all of their assignments (writing, preparation for discussion) emphasized the primary source documents. However, when asked why they did not make much use of the textbook, the students interviewed from the web sections did not make reference to any of these characteristics of the course, saying instead that they found what they needed via the website and so felt little need to consult the textbook. When they did feel such a need, they typically looked for answers on the web rather than cracking their text.

Students from the print section gave similar answers to these same questions, with the exception that when they needed to know more, they typically turned to the library rather than the web for answers. When pressed as to why they did not simply open their textbook, all of the students expressed dissatisfaction with the textbook because, as one student put it, the textbook was "heavily factual" and so did not help you understand what had "really happened." While an instructor might be pleased with the fact that students who felt this way wanted to spend more time with the primary sources, not surprisingly, many of these same students also were unable to, or had real difficulty setting the primary sources they were reading in the appropriate historical context. Thus, while providing students with primary source documents in a format (on the web) they find easy and enjoyable encourages them to spend more time with the primary sources, unless those sources are presented in a way that also makes it possible for students to set them in their appropriate historical context, then some of Birkerts' predictions may well come true for the inexperienced student reader.

A second question that I was very interested in answering was whether my students left the class website and the links it includes to go poking around on the web. After all, if no one actually embarked on that unmediated intellectual quest, much of the potential of the web would remain just that, potential. Only half of the students in the web sections reported having gone beyond the links I provided for them on the website and the vast majority of those who did leave my site did so while working on the last two assignments of the semester. These two assignments were the only two where I specifically directed students to start their research at an archive site (the website for the Holocaust Museum in Washington, D.C. or the Marx-Engels Internet Archive) rather than with a list of links I provided.(19) Once they got to these meta-sites, they typically followed links that led them to a variety of different sources out on the web. In my interviewing, I

asked the students why it was only these assignments that led them off on their own and all who did some exploring answered one of two ways: either they were not sure "what you were looking for" and so had to find answers to their own questions; or they simply felt empowered/liberated by the non-specific nature of the assignment to go forth and find. As one young woman put it, "It helped me to learn what I found interesting." In only a few rare cases did students report going beyond my site for resources on assignments other than these two. My own evaluation of the essays written by students in response to these final two assignments is that as a group they demonstrate a somewhat higher level of originality, especially when it comes to weaving together a variety of primary and secondary sources. Of course, one would expect (or at least hope) that later in the semester students would be better historians than they were at the beginning. It also seems, based on the various evaluations of student writing samples, that as a group those students who went beyond the course site (or course pack) generally did measurably better work.

### .06. Conclusions

What, then, are we to conclude from my initial findings in this project? On the positive side of the ledger, using the web certainly encourages students to focus on primary sources, especially what they mean and how they relate to one another, rather than simply memorizing some fact about them. Having the sources available to the students on a website facilitates recursive reading of those sources, with the benefits discussed earlier. A second positive finding is that exploring on the web does seem to encourage original thinking about the past, thereby helping students to make more sophisticated connections between various sources, events, and people than they generally do with a textbook or monograph. When the full potential of hypermedia becomes available to the majority of students, we can expect that their explorations will result in even more interesting conclusions on their part.

One thing that is very clear from my research is that students, even the very best students, not only do not know how to judge the quality of what they find on the web (despite having gone through an exercise aimed at developing this skill), they do not even think much about the potential risks of bogus or sloppy websites. We should expect that with each passing semester, our students will privilege information they find on the web over what they find in books, so unless we teach them how to judge the quality of a website at the beginning of their academic careers, we are doing our students a grave disservice.(20) Another obvious problem that we are all aware of and my findings simply bear out, is that the web discourages our students from using the library, or even books at all. If they can find what they want on the web, they tend to stop there. Of course, this finding does not mean the end of the library as we know it, but rather points to the need to teach our students how to combine the resources they prefer (on the web) with those in the library. A course such as the one I delivered this past year actually discourages them from using the library and therefore helped set them up for trouble later on in their academic careers when they must use the library for research.

In addition to these several implications for the future, one other that arises from the results of this project is that while the hypermedia revolution does not herald the end of the book, I believe

it does herald the end of the coverage model introductory history survey course. Because the web encourages recursiveness and self-directed research, our students will become increasingly impatient with the traditional model of the introductory history survey. If we continue to charge them with making sense of the western past from Plato to NATO in just 28 weeks, they are going to become increasingly frustrated with our courses and us. The careful consideration of topics and underlying sources that hypermedia encourages is simply not possible if one covers the French Revolution on Monday, Napoleon on Wednesday, and Congress Europe on Friday. Therefore, I believe that in the not too distant future, the coverage model survey course as we know it today will disappear completely from our curricula.

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Arranged marriages often end in violence or sometimes divorce. Unfortunately, divorce is not often an option and this leaves only violence. In the book, "The Breadwinner", Parvana looks up and hears a scream. "A man was very angry. He was shouting at a woman who was crying and screaming.  The fear and terror that women in arranged marriages experience is real and can reach beyond the borders of Afghanistan. Not just in Afghanistan but all over Asia, parents arrange marriages for their children. In China and Russia, daughters are sent to a matchmaker so that the parents do not have to arrange matches themselves. In the story "Fiddler on the Roof", young Ziedel is upset because she can't marry the man that she loves because Yenta, the matchmaker, has found a match. Marriage is about two people choosing each other. And that just won't work if there's only one person at the end of the day doing all of the work.  But I am fascinated by those words because despite our vow to see marriage "through better or for worse," obviously there comes a point in about 50% of marriages when that "worse" is too much. Marriage, by definition, means some degree of self-sacrifice. That's kind of the point, actually. But although the whole "for better or for worse" thing is nice in theory, does it really mean that marriage is always, always worth sticking through? Or that you even should? After the whole Josh Duggar scandal came to light (the second one, to clarify), I wondered what Anna could do if she decided to leave 9. Samuel S. Wineburg, "Historical Thinking and Other Unnatural Acts," Phi Delta Kappan, March 1999, p. 491. Other works by Wineburg on this subject include: "Models of Wisdom in the Teaching of History," Phi Delta Kappan, September 1998, pp. 50-58; "Reading Abraham Lincoln: An Expert/Expert Study in the Interpretation of Historical Texts," Cognitive Science, 22/3, 1998, pp. 319-46; [with Janice E. Fournier] "Picturing the Past: Gender Differences in the Depiction of Historical Figures," American Journal of.