

**History Education in New Media:
“Effective History Educators Need Not Fear Change”**

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I. Introduction

Unfortunately the growing presence of digital technologies in education has resulted in the increased polarization of opponents and proponents of new media. This became obvious, for example, in a “virtual roundtable” that was hosted in 2001 by Gary Kornblith and Carol Lasser, contributing editors of *The Journal of American History*. The “virtual roundtable” employed electronic lists and e-mail to discuss the American history survey.¹ Much of the discussion by the eleven participating historians focused on traditional matters such as readings, assignments, and organizing themes and interpretations. When the conversation came around to how to incorporate new media into their classrooms, one of the professors conceded that:

“The latest in technology appeals to me very little. ... Students attracted to the latest technology may not find my courses enticing, but so far a sufficient number do, and I see no need to offer more of what they are already getting plenty of everywhere else in our culture.”²

If the goal of history teachers is to instruct, motivate, inspire, and engage students, then to surrender potentially useful educational tools to more compelling cultural influences seems a questionable tactic at best and an abdication of responsibility at worst. The debate should not be whether education should adopt

¹ Gary Kornblith and Carol Lasser, “Teaching the American History Survey at the Opening of the Twenty-first Century,” *The Journal of American History* 87 (2001). Viewed on-line November 6, 2002. <http://www.historycoop.org/journals/jah/87.4/kornblith.html> [subscription required]

² Kornblith and Lasser, paragraph 95.

the latest innovations or stick with time-tested teaching techniques.³ Rather, the debate about new media and education would be more productive if it focused on the most effective and efficient means to educate the individual student. Educators must view the digital media as a “delivery system” rather than automated education. Teachers must be willing to adjust their teaching styles and adapt to various tools to meet the educational needs of students regardless of whether they are traditional or computer-based.

Simply put, the discussion about new media in education must consider an increasingly digital environment for students, teachers, and administrators. A look at the average college campus today would reveal a proliferation of cell phones and beepers owned by students, electronic payment for food services, iPods, and laptop computers. In 2001 the Pew Research Center conducted a study that resulted in the finding that “71% of online teens rely ‘mostly on the Internet’ for their homework.”⁴ Recently it seems as if every bit of information utilized by students can be processed in an electronic environment. Even the administrative functions of schools have been virtually transformed into a digital environment such as the library catalogs, course listings, registration, tuition payment, and class syllabi. Technophobe Sven Birkerts views the future direction of education with considerable dread. He believes that traditional and cherished forms of instruction will not be able to withstand the onslaught of technology-based education. He writes, “Although we are only at the early stages of implementation—institutions are by nature conservative—an educational revolution seems inevitable.”⁵ Neil Postman, an educator and media critic, sees the incursion of technology into our schools as an insidious development. For Postman, society’s belief in, and reliance on, the educational benefits of technology are so great that it cannot possibly live up to the hype and ultimately will be detrimental to education.⁶

Birkerts and Postman foresee a loss of traditional methods of teaching and learning that they do not feel can be replicated in a digital environment. We should not completely ignore their warnings. It may be tempting to look for solutions wherever they may exist. Individual classrooms do not or cannot always incorporate every new educational tool that becomes available to them. New media should undergo the same evaluation that all educational aids receive, and they should be implemented only when there are “acknowledged” benefits in the educational setting.⁷

³ Ann Wynne, “History Instruction and the Internet: A Literature Review,” chapter 2 in Dennis A. Trinkle, and Scott A. Merriman, eds., *History.edu: Essays on Teaching with Technology* (Armonk, NY: M.E. Sharpe, 2001): 26. For discussions of traditional versus future educational techniques see, Judith V. Boettcher, “The Journey to the Web: Simple Adaptations or New Curricula?” *Syllabus* (January 1998): 48, 50-53; and Lawrence A. Tomei, “Instructional Technology: Pedagogy for the Future,” *T.H.E. Journal* 25 (December 1997): 56-59; and Gary B. Nash, Charlotte Crabtree, and Ross E. Dunn, *History Wars on Trial: Culture Wars and the Teaching of the Past* (New York: Knopf, 1997).

⁴ Chris Taylor, “Smart Library,” *Time* (November 17, 2003): 68.

⁵ Sven Birkerts, *The Gutenberg Elegies: The Fate of Reading in an Electronic Age*. (Boston: Faber and Faber, 1994): 134.

⁶ Neil Postman, “Some New Gods That Fail,” chap. 3 in *The End of Education: Redefining the Value of School*. (NY: Alfred A. Knopf, 1995).

⁷ Randy Bass and Roy Rosenzweig, “Rewiring the History and Social Studies Classroom.” Section 3.

Discussions about new media often characterize the changes that are brought about by digital technologies as revolutionary. If “revolutionary” is defined as “a fundamental change in the way of thinking about or visualizing something,” then this term is a precise (and useful) description of new media’s future in education.⁸ The “fundamental change” offered by new media is an understanding that teachers as well as students must adapt to changing educational environments. As one historian working with digital technologies put it, “Effective history educators need not fear change.”⁹

II. Intersection of New Media and Education

If educators want to take advantage of digital advancements, they should understand the nature of the latest technological innovations. Lev Manovich, a new media theorist, has asked, “What is new media?” He answers his own question by describing new media as all objects that are reduced to “numerical representations” or those that can be “described using a mathematical function.” This process of reducing many different forms of media into a numerical representation is called “digitization.” Once digitized, this new form of media exhibits its uniqueness through its ability to undergo “algorithmic manipulation.” Taking a photograph of one of Rembrandt’s paintings would be putting it in a new form of media, but digitizing the original allows it to become “programmable.” The digital object can be acted upon.¹⁰

Jay David Bolter and Richard Grusin call the process of representing one form of media in another form of media, “remediation.” These authors argue that, “remediation is a defining characteristic of the new digital media.”¹¹ Digital technologies are unique because many different forms of media may be translated into similar sets of numerical representations. Bolter and Grusin assert that this same uniqueness prevents the digital environment itself from being unique, since it must always rely on earlier forms of media to define itself. They do not see digital media transcending its ties to older media. Bolter and Grusin do not perceive the growth of new media as a revolutionary development because of its reliance on earlier media. Only when new media can shed its reliance on old forms of media will digital technologies become revolutionary. Only when writers, researchers, and artists envision their works initially and completely in a digital environment with its own lexicon will the digital revolution be complete.¹²

In a talk at George Mason University in the fall 2003, George Welling described the extent to which we currently rely on earlier forms of media to describe the digital environment. For instance, information

⁸ From the on-line edition of the Oxford English Dictionary. (www.oed.com)

⁹ Ann Wynne, “History Instruction and the Internet: A Literature Review,” chapter 2 in Dennis A. Trinkle, and Scott A. Merriman, eds. *History.edu: Essays on Teaching with Technology* (Armonk, NY: M.E. Sharpe, 2001): 27.

¹⁰ Lev Manovich, *The Language of New Media* (Cambridge, Mass.: MIT Press, 2001): 19, 27-8.

¹¹ Jay David Bolter and Richard Grusin, *Remediation: Understanding New Media* (Cambridge, Mass.: The MIT Press, 1999): 45.

¹² Steven Holtzman, *Digital Mosaics: The Aesthetics of Cyberspace* (NY: Simon & Schuster): 15.

on the Web appears on “pages” and we remember our favorite ones by marking them with “bookmarks.” The words we type are digitally coded in a binary system that the computer can store in its “memory.” We refer to groups of code as “files.” We can further group any number of these “files” in “folders.” The visual space we see on our monitors is referred to as our “desktop.” Desktops used to be the surfaces where we placed our computers. We gave unfamiliar items familiar names to help people understand the new digital environment and make it seem less foreboding. People are comfortable with older forms of media such as books. They understand them. The conventions used in books such as page numbering, footnotes, and glossaries developed over hundreds of years.¹³ Randy Bass notes that, “These elements of apparatus that accompanied book technology served especially from the Renaissance forward to ‘stabilize’ print.”¹⁴ In Welling’s view, the revolution will be completed when the digital environment sheds references to older media and lives up to its potential as a unique form of media unlike its predecessors.

Even if current digital technologies do not meet the criteria for a revolution set by Welling or Bolter and Grusin, they certainly provide a unique environment that history teachers may utilize. In education, or for that matter any discipline using new media, the great advantage of using digital technologies is that all of its components may be reduced at their most elementary state to “the same digital code.”¹⁵ A Woody Guthrie recording, an Ansel Adams photograph, and a letter by Ernest Hemingway are all different types of media, but after digitization they may all be combined and made available through the same computer interface.¹⁶ A professor of twentieth century culture could put together an on-line syllabus that includes these resources and more so that students would not waste their time tracking them down in different sections of the library. Providing students access to source material is certainly one of the most common uses of the Internet by teachers.¹⁷

In order to determine the extent history programs used new technologies, the American Association for History and Computing conducted a survey of the roughly 660 history departments in the nation. Forty-seven percent of those responding indicated that they developed Web sites for their courses. A closer analysis of the survey results revealed a wide variety of posted material and technological sophistication.

¹³ See, Alberto Manguel, *A History of Reading*. Penguin, 1997.

¹⁴ Randy Bass, “Can American Studies find a Whole in the Net?” *American Studies in Scandinavia* (Fall 1996). Quoted from the on-line version. (<http://www.georgetown.edu/crossroads/guide/asins96.html>); see also, George Landow. *Hypertext: The Convergence of Contemporary Critical Theory and Technology*. (Baltimore: Johns Hopkins University Press, 1992): 19.

¹⁵ Manovich, 49.

¹⁶ Guthrie, <http://www.amazon.com/exec/obidos/clipserve/B000001DJY001001/0/104-7187750-6448767> This clip came from Amazon.com’s website selling Woody Guthrie’s “This Land Is Your Land: The Asch Recordings, Vol. 1.” The American Memory project has a Woody Guthrie section at <http://memory.loc.gov/ammem/wwghhtml/wwghome.html>); Adams, http://www.royaltyfreeart.com/ansel/ansel/14_1332a.html; Hemingway, <http://www.lib.udel.edu/ud/spec/images/hemingwa/2-3.jpg> from “Ernest Hemingway in His Time: An Exhibition” This part of the University of Delaware Library’s Special Collections and is maintained by askspec@hawkins.lib.udel.edu Last modified: 06/24/02 and viewed on June 9, 2004.

¹⁷ Dennis A. Trinkle, and Scott A. Merriman, eds., *History.edu: Essays on Teaching with Technology* (Armonk, NY: M.E. Sharpe, 2001): xii.

Although some teachers developed elaborate interpretive sites or document archives, most “sites” consisted largely of course syllabi and links to related material. The divide here usually resulted from the higher level of training and technical support offered by larger universities.¹⁸

The value of support and reinforcement provided by interdisciplinary exchange goes without saying. The computer sciences used to be yet another isolated field of study. Now the arts, sciences, and humanities all use varying degrees of software and hardware in their curricula. Basic computer skills and an understanding of technology are reinforced across disciplines.¹⁹ From class to class and throughout their every day activities, students’ computer skills are continuously developing.

As students increasingly rely on the Internet to assist them with their class assignments, it becomes necessary for history teachers to instruct these students how to sift through the questionable information for the useful and accurate content. As Gertrude Himmelfarb wrote, “The internet does not distinguish between the true and the false.”²⁰ Without a means of “quality control,” as Howard Gardner put it, “Information and disinformation commingle comfortably and as of yet, there are no reliable ways to distinguish sense from distortions and downright nonsense on the Net.”²¹ The burden then falls to the history teacher. There are several organizations and websites working to aid teachers and students looking for reliable history content as well as to bring stability and credibility to history scholarship on the Web.

One of such websites is “History Matters,” a joint project between the American Social History Project/Center for Media and Learning of the City University of New York and the Center for History and New Media at George Mason University.²² In addition to providing a forum for discussing the teaching of history, this Web site provides high school and college teachers with a number of useful on-line tools to assist them. Among the resources available are interactive exercises to teach students how to use various forms of evidence in the course of historical investigation. Historians show students how to get the most out of a wide variety of sources such as maps, music, photographs, newspapers and advertisements.²³

“History Matters” can also be used as a portal to direct students to reliable and acceptable information. Carl Smith has asked whether, “[T]he unregulated culture of the Internet made cyberspace a bloated refuge

¹⁸ Dennis A. Trinkle, “Technology and the History Classroom: Where Are We? Where Are We Headed?” in Dennis A. Trinkle and Scott A. Merriman, eds. *History.edu: Essays on Teaching with Technology*. (Armonk, NY: M.E. Sharpe, 2001): x-xii.

¹⁹ Charles T. Evans and Robert Brown, “Teaching the History Survey Course using Multimedia Techniques,” *Perspectives* (February 1998). On-line edition available at <http://www.historians.org/perspectives/issues/1998/9802/9802TEC.CFM>.

²⁰ Gertrude Himmelfarb, “A Neo-Luddite Reflects on the Internet,” *Chronicle of Higher Education*, (November 1, 1996): A56. <<http://chronicle.com/che-data/articles.dir/art-43.dir/issue-10.dir/10a05601.htm>> [subscription required]

²¹ Gardner, *Disciplined Mind*, 44

²² “History Matters,” Viewed on July 12, 2004. <<http://historymatters.gmu.edu/>>

²³ For information on some teachers have used “History Matters” in their classrooms, see Tracey Weis, “Evaluating Websites for History Teachers: Using History Matters in a Graduate Seminar,” *The History Teacher* (May 2001). <http://chnm.gmu.edu/assets/historyessays/e2/evaluating.html>; and David Kobrin, “Using History Matters with a Ninth Grade Class,” *The History Teacher* (May 2001). <<http://chnm.gmu.edu/assets/historyessays/e2/usingmatters.html>>

for work of questionable value that otherwise couldn't—and shouldn't—see the light of day?"²⁴ The easiest way for students to begin their research may be with one of a number of available search engines. The problem is that search engines do not make qualitative value judgments. Listed URLs make no determination whether the linked sites are questionable or credible. Educational Web sites appeared alongside agenda-driven content.²⁵ "History Matters" allows a teacher to direct students to sites that have been reviewed by historians and be reasonably assured that the historical content is reliable.

A group of researchers at Stanford University's Persuasive Technology Lab have been studying what influences people to believe certain information they find on the Web. Their studies into "Web credibility" resulted in the publication of the "Stanford-Makovsky Web Credibility Study."²⁶ The findings of this study are summarized in the Lab's "10 Guidelines for Web Credibility." The list does not contain any surprises, but it can act as a checklist for people designing Web sites. The suggestions include: "Avoid errors of all types, no matter how small they seem," "Highlight the expertise in your organization," and "Show that there's a real organization behind your site."²⁷ Paula Petrik maintains that "a well-thought out and well-designed site suggest credibility."²⁸ Unfortunately appearances may be deceptive and she warns that a slick looking site may be completely devoid of credibility. Students visiting a Web site may not realize who is providing the information they are using. Teachers can use the findings of Stanford's Web Credibility Research to help teach their students to view Web sites with a critical eye.

Carl Smith asks, "Can You Do Serious History on the Web?"²⁹ The answer is, of course, yes. Unfortunately, translating historical scholarship into an electronic medium is a very time consuming process and even then the value and viability of electronic scholarship is still hotly debated. Fortunately some organizations like the American Historical Association (AHA) have committed themselves to promoting new media advancements. In 1999 the AHA established the Gutenberg-e prize with a grant from the Andrew W. Mellon Foundation. The AHA hopes to legitimize electronic publishing and "change attitudes of academics toward e-books." The simple fact that an organization such as the AHA would put

²⁴ Carl Smith, "Can You Do Serious History on the Web?" AHA Perspectives OnLine, February 1998 <<http://www.theaha.org/perspectives/issues/1998/9802/9802COM.CFM>>

²⁵ Michael O'Malley and Roy Rosenzweig, "Brave New World or Blind Alley? American History on the World Wide Web," *Journal Of American History* (June 1997). <<http://chnm.gmu.edu/chnm/jah.html>>; David Kobrin, "Using History Matters with a Ninth Grade Class," *The History Teacher* (May 2001). <<http://chnm.gmu.edu/assets/historyessays/e2/usingmatters.html>>

²⁶ "Stanford-Makovsky Web Credibility Study: Investigating What Makes Web Sites Credible Today" 2002 (<http://captology.stanford.edu/pdf/Stanford-MakovskyWebCredStudy2002-prelim.pdf>)

²⁷ B.J. Fogg, (May 2002). "Stanford Guidelines for Web Credibility." A Research Summary from the Stanford Persuasive Technology Lab. Stanford University. www.webcredibility.org/guidelines

²⁸ Paula Petrik, "What Can Good Web Design Do for Humanities Projects: Reflections and Case Studies," DC Area Technology and Humanities Forum, George Mason University, Fairfax, Virginia. October 2, 2002. Petrik is a professor of history at George Mason University and the associate director of the Center for History and New Media.

²⁹ Smith, "Serious History," *AHA Perspectives*.

its influence behind such an effort reflects well on the future of electronic publishing. They even hope that “the program may also contribute to a new conception of the book itself as a vehicle of knowledge.”³⁰

Even as some historians cling to familiar methods of research and teaching, they may dream of a time when they are freed from linear narratives and chalkboard lectures. There is a new generation of history graduate students that has grown up exploring digital environments. Robert Darnton marvels at these new historians and observes, “Having spent their childhood with computers, they will know where they are going when they leap into cyberspace.”³¹ One hopes that this new generation will use technology to truly find a new way to teach and visualize history.

In 1999 the editors of *American Quarterly* published an on-line edition of their journal as an experiment in digital scholarship. The four articles produced for the issue could not have been published in the traditional format of a scholarly press. The articles incorporated sound files, video, and even took advantage of the hypertext environment to construct a non-linear narrative. *American Quarterly* offered a group of scholars a unique opportunity to present their work in a manner that more fully utilized their sources by integrating multimedia applications. When we reach the point of offering scholars consistent outlets to fully realize their work, historical research will be revolutionized by fundamentally changing how we perceive scholarship.

III. New Media as Assessment

New innovations can capture imaginations prompting a rush to adopt the latest advancements. Digital technologies are no exception. The educational potential of computers seems obvious and schools scrambled to introduce them in classroom settings. Yet in their haste to integrate computers to the curricula, they neglected to consider how the new technology could be used to improve instruction and refine assessment.³²

Behind many governmental initiatives calling for assessment lay a desire for accountability. Authorities want to hold someone accountable if the student doesn't learn. Traditional assessment focusing on content and factual knowledge recorded only the ability to regurgitate distinct bits of data. Bass and Rosenzweig suggest the development of assessment methods “designed to reflect deeper understanding of reading, interpreting and arguing processes.”³³ The difficulty arises when we attempt to assure our students will achieve a “deeper understanding” of the topics under consideration. One way to accomplish this is to

³⁰ “Gutenberg-e Prize,” offered by the American Historical Association and Columbia University Press for dissertations and monograph manuscripts in history. (<http://www.historians.org/prizes/gutenberg/index.cfm>)

³¹ Robert Darnton, “A Historian of Books, Lost and Found in Cyberspace,” *Chronicle of Higher Education* (March 12, 1999): B4. Available on-line at (<http://www.historians.org/prizes/gutenberg/rdarnton.cfm>).

³² Sandholtz, 35.

³³ Randy Bass and Roy Rosenzweig, “Rewiring the History and Social Studies Classroom.” Section 4.

fundamentally change our focus away from assessment as a means to attribute accountability and toward assessment to improve teaching techniques. A continuous accumulation of feedback in the classroom would allow teachers to record how students are responding to instruction. In this environment, we would expect to find not only an improvement in instruction, but also the development of deeper cognitive processing by students.³⁴

Research on classroom assessment suggests benefits to both the teacher and the students. Recent research on classroom assessment techniques found that the regular accumulation of feedback kept teachers more focused on their courses and attuned to the progress of students. One technique suggested by researchers called for students to take five minutes to write on index cards at the end of class indicating the most important concept they learned that day and the least effective part of class. Negative comments may not be the easiest feedback for faculty to receive on a regular basis, but the goal is to improve each class meeting.³⁵

The involvement of students in the process of assessment should not be underestimated. When students become accustomed to the idea of regular student assessments they tend to focus on class material and become more engaged in the learning process.³⁶ The extra effort made by teachers and students to participate in classroom assessment pays off throughout the semester in the form of a more engaged student body.

One way to ascertain if technology provides any pedagogical advantage would be to teach the same course with and without a new media component. Teaching two sections of Western Civilization in one semester, T. Mills Kelly had the opportunity to compare how students responded to material presented in digital and non-digital formats. Kelly began by asking, “How does the introduction of hypermedia into a history course influence student learning in that course?”³⁷ Evaluations of the sections were based on standard student evaluations, a survey of his own design, and finally from more reflective responses to a “free-form questionnaire.” Kelly found that those classes taught using the traditional materials and those using digital technologies produced a measurable difference. The use of technology in teaching “encourages students to spend more time on the topic before them,” and the convenience of sources seems to increase the amount of students’ recursive reading. Kelly foresees the ultimate demise of the survey

³⁴ L. Patricia Cross, “Classroom Research: Implementing the Scholarship [?] Teaching” Chap. 1 in Thomas Angelo, ed. *Classroom Assessment and Research: An Update on Uses, Approaches and Research Findings* (San Francisco: Jossey-Bass Pub., 1998).

³⁵ Mimi Steadman, “Using Classroom Assessment to Change Both Teaching and Learning,” chap. 3 in *Classroom Assessment and Research: An Update on Uses, Approaches, and Research Findings: New Directions For Teaching and Learning, No. 75*, edited by Thomas Angelo (Jossey-Bass, 1998).

³⁶ Regina Eisenbach, Vicki Golich, and Renee Curry, “Classroom Assessment Across the Disciplines,” chap. 6 in *Classroom Assessment and Research*.

³⁷ “Western Civilization: A Course Portfolio” Created by T. Mills Kelly. Part of the AHA/AAHE Teaching Portfolio Project (<http://www.historians.org/teaching/aahe/Kelly/Pew/Portfolio/welcome.htm>)

course as currently taught, but the incorporation of digital media may breathe life into it for a few more years.³⁸

Randy Bass wrote, “If there is no single moment when you can assert that *here* is where teaching happens, or *here* is where learning takes place, then it is impossible to say in any isolated manner, here is where *technology* made the difference.” Digital media is not a panacea for the ills of education. Technology cannot replace good instruction but it may facilitate and enhance that instruction. As Bass suggests, the focus should remain on the basic assumptions of teaching.³⁹

IV. Defining and Designing Components of Effective History Web Sites

The most important thing to remember about the Internet is that it is just another form of communication. Like any form of communication, it may be a missed opportunity if not properly applied. Initially educators must face a daunting array of computer hardware, programming software, and Internet connections. For the novice designer the technological aspects of designing course material might pose a daunting challenge. Paula Petrik cautions that the Internet is more about communication in a technical environment rather than about technology itself.⁴⁰ It is quite possible that students would know as much or more than their humanities professors about technology. Rather than trying to match wits over new media, educators may simply view digital environments as the new meeting places where they can convey information to their students. Sarah Horton takes this one step further by asserting, “Web teaching is all about making connections: connecting your students to one another and to resources around the world; combining different materials—music, motion, text, narration—into one presentation; collecting related information for multiple sources.”⁴¹

The ability to convert all sorts of different materials into binary code allowed designers to incorporate all sorts of diverse media into a single project. One of the most widespread uses of digital media in university history departments today is the posting of syllabi.⁴² The digitization of all kinds of primary and secondary materials offers seemingly limitless material for an instructor to incorporate in a course. Photographs, films, and sound can now be stored in digital media as jpegs, mpegs, and wav files. Rather

³⁸ “Western Civilization: A Course Portfolio,” Conclusions section.

³⁹ Randy Bass, “Engines of Inquiry: Teaching, Technology, and Learner-Centered Approaches to Culture and History,” Crossroads Project, 2000. <http://www.georgetown.edu/crossroads/guide/engines.html>

⁴⁰ Paula Petrik, “We Shall Be All: Designing History for the Web,” draft essay, (<http://www.archiva.net/Resources/AHA-00.pdf>).

⁴¹ Sarah Horton, *Web Teaching Guide: A Practical Approach to Creating Course Web Sites* (New Haven: Yale University Press, 2000): x.

⁴² Dennis Trinkle, “History and the Computer Revolutions. A Survey of Current Practices,” *Journal of the Association for History and Computing* II/1 (April 1999). (<http://mcel.pacificu.edu/JAHC/JAHCII1/ARTICLESII1/Trinkle/Trinkleindex.html>)

than the old style syllabi, all these elements can be merged into one digital environment. Only the limits of a teacher's imagination will restrict the potential of a digital syllabus.

Before posting syllabi and whatever odd collection of material might be available, a person must make a number of considerations. First and foremost the designer must consider the intended audience. Understanding why a person visits a site and what they hope to find will facilitate development of the content. With a target audience in mind, a developer can write more specifically to the known visitors, and information may be organized to serve the needs of those viewers. While normally it would be necessary to decide if the anticipated visitors were primarily novices or experts, an on-line syllabi or sites focused on particular class topics would have an easily identifiable audience. Although on-line work might be viewed by anyone with Internet access, the target group for educational designers would be more easily identifiable users.

Writing for the Web itself poses unique challenges. The style of writing on the Web is as different as writing for a scholarly journal or a documentary. There may be a tendency to simply post existing essays on the Internet, but people tend to read text on the Web differently. Visitors tire of scrolling through long, uninterrupted text. People familiar with the Web have grown accustomed to short passages of texts accompanied by an abundance of graphics. This pattern is repeated on the majority of sites from commercial and company Websites to government agencies and news outlets.⁴³ The *Washington Post*, for instance, breaks longer articles it places on-line into smaller portions of between 500 and 700 words. Some designers suggest keeping chunks of information around 100 words, but that would depend on the type of content presented.

Sites offering electronic versions of journal articles and longer scholarly content often provide an alternative when they anticipate that their visitors may want the option to print the document. To facilitate printing, some sites offer documents on one long HTML page, while others offer a more polished version as a PDF document.⁴⁴ Since it is not modifiable, a PDF maintains a documents original layout complete with text, images, and graphics. In addition a PDF may be viewed in most Web browsers, and it enables viewers to print individual pages of longer documents.

Text written in simple HTML will stretch to the right and left margins to fill the available space. Since the viewer can set a font size and expand browser windows, it is advisable that a designer suggest font sizes in their code and fix borders within a window so that lines of text are somewhere around fourteen words

⁴³ For examples of these sites see Amazon.com, IBM.com, the U.S. Senate, and the *Washington Post*.

⁴⁴ PDF stands for Portable Document Format. The Adobe Corporation developed this format which became the industry standard largely because it creates compact, cross-platform files that are perfect for electronic transfer. Another reason for the wide acceptance of PDFs is that Adobe provides free downloads of the software needed to read the files.

per line. This is easier on the eye and readers will not lose their place from the end of one line to the beginning of the next.⁴⁵

Brad Johnson suggests that very early in the process designers should immerse themselves in the content. Technology, content, and presentation are all equal parts of the development process, but the content will more often than not suggest which technologies to use and how best to present the information. Johnson and his colleagues at Second Story start with the substance and then develop a site around it. A Web page should enhance access to information within the site. The Second Story designers conceive of the site as the place where you build an emotional connection to the content. The aim is to draw visitors into the site and instill a desire to stay and explore by virtue of a compelling, engaging, and dynamic design. The content may exist within the site, but the design should offer more to the viewer. A well-designed Web site should transcend language.⁴⁶

There are many theories on how to best design a Web site. While Second Story represents high-end design, others promote simplicity as a means to achieve greater functionality. In all his Web work, Jakob Neilson stresses usability over design. Neilson advocates the utility of the Web and has an aversion to sites heavy with graphics and other distractions.⁴⁷ However, graphics and design elements make the Web a unique environment. Neilson's Website now looks like a throwback to the early days of the Internet. His use of odd pastels as backgrounds is tempered only by his sparing use of them. In fact, color is an important element of design and may be used to great effect. Sites may employ a "brand color" that ties together a Web site. Variations on a color theme may be used to identify different sections of related material.

The designers at Second Story also endorse simplicity in design, and as such they rely a great deal on graphics to facilitate their navigation. Despite a deceptively slick look, Second Story projects strive for focused content and simplicity of design. Whether or not you endorse the embellishment of sites with graphics, navigation should be consistent throughout and as straightforward as possible. Site visitors should always be aware of where they are within a site and how to get where they would like to go.

Design and content should really go hand in hand. The extent to which a designer utilizes graphics really should depend on the content. Educational sites discussing artwork, artifacts, or maps would require more graphic elements, whereas academic studies such as this one will be less reliant on images. Everything on the Website should support the main objective of the site. Michael O'Malley points out that

⁴⁵ Jakob Nielsen, "Let Users Control Font Size," *Alertbox* (August 19, 2002). Available on-line: <http://www.useit.com/alertbox/20020819.html>

⁴⁶ Brad Johnson, "What Can Good Web Design Do for Humanities Projects: Reflections and Case Studies," DC Area Technology and Humanities Forum, George Mason University, Fairfax, Virginia. October 2, 2002. Johnson is the creative director at Second Story (<http://www.secondstory.com>).

⁴⁷ "useit.com: usable information technology," site designed and maintained by Jakob Nielsen. <http://www.useit.com/>

websites are like essays, “A good paper has one idea. Everything contributes to that. All elements should contribute to the site. If you don’t know why it’s there, get rid of it.”⁴⁸

The same principle of having all design elements supporting one main idea should apply to links as well. The creation of links within an essay is one of the unique and wonderful innovations of the Web, but novice designers tend to overdo this option. The sparing use of links to only related material keeps readers focused on the content considered most important by the designer. This cannot be stressed enough with regard to educational sites. While surfing the Web, the presence of links tempt users to stray from site content. A site for a course on the history of leisure in America may include a link to the Bicycle Museum of America that would have lots of images and descriptions of old bicycles.⁴⁹ Links to sites about Lance Armstrong or the Tour de France would not be appropriate and only offer students an unnecessary distraction.

Exploration is often said to be one of the advantages of the Web. Students can follow their whims and create their own narrative. Michael O’Malley advocates changing the standard model of the professor standing before a captive audience of students attempting to persuade students to think like him. O’Malley says, “We should challenge them to dig. Encourage blundering. Challenge their thought.” The model we hope to create is that of opening a chest of treasures for students to investigate. Of course, we hope that exploration is within the desired subject and not on unrelated topics.

We should not use the latest available digital innovations simply because we can. As Bass and Rosenzweig warned “We should be...reminding ourselves to use technology only where it makes a clear contribution to classroom learning.”⁵⁰ Designers of educational sites should always ask themselves as they work, “what can I do with digital technologies that I cannot otherwise do?”

My web site on the World’s Columbian Exposition of 1893 is an example of using digital media to show concepts in a visual manner that cannot be described nearly as well in text.⁵¹ Historians have produced a number of very good books on that World’s Fair and even explored some of the troubling racial and sexist attitudes of that time period. Even some of the best historians have struggled to convey the lengths organizers went to, to marginalize or diminish the presence of ethnic contributions to the Fair. As a visual medium, an interactive map produced for the Web can instantly show how women in various ethnic groups were pushed to the periphery of the fairgrounds. The interactive and visual aspects of the Web can elucidate a concept in ways that are difficult or impossible in other media.

⁴⁸ Michael O’Malley, “What Can Good Web Design Do for Humanities Projects: Reflections and Case Studies,” DC Area Technology and Humanities Forum, George Mason University, Fairfax, Virginia, October 2, 2002. O’Malley is an associate professor of history at George Mason University and the associate director of the Center for History and New Media.

⁴⁹ “The Bicycle Museum of America,” (<http://www.bicyclemuseum.com/Html/main.html>). Viewed on June 24, 2005.

⁵⁰ Randy Bass and Roy Rosenzweig, *Rewiring the History and Social Studies Classroom.* Section 3.

⁵¹ “World’s Columbian Exposition: A Vision of the Future, A Reflection of Its Present.” Produced by Steven Saltzgeber in 2002. (http://mason.gmu.edu/~ssaltzgi/Worlds_Fair/worlds_fair_map.html)

Finally, designers must consider a site's overall aesthetic. Developing an on-line exercise for a course titled, "Magic, Illusion and Detection at the turn of the last century," O'Malley deliberately created a dark, mysterious atmosphere that would encourage exploration and suggest the deception and detective work of the age. O'Malley argues that the, "Design of site should fit the ideology of the course."⁵² O'Malley also posted the syllabus for a course on Jacksonian America on-line, but in doing so he replicated the style of an 1840 handbill. Students clicked on various parts of the syllabus to access the course description, schedule and assignments. While this syllabus didn't have the same immersive effect as his Magic and Illusion course, the choice of fonts and images suggested the time period under consideration and evoked

Creating an atmosphere conducive to learning may also be about developing an historic environment that students may inhabit. Another collaborative project between the American Social History Project/Center for Media and Learning of the City University of New York and the Center for History and New Media at George Mason University resulted in the development of "The Lost Museum." This interactive educational project recreates P.T. Barnum's American Museum that had reflected a unique side of antebellum American culture for nearly twenty-five years. The web site is replete with advice and instructions for educators on how to use the web site in their classrooms as well as an extensive archive that provides contextual information and allows for further research on related topics. The intriguing design of the site lets visitors move around the museum as if they were actually there. Although a fire destroyed the building in 1865, the museum is resurrected through this inventive project. Visitors may "move" about the virtual environment and interact with it by opening drawers and examining objects. The designers not only recreated Barnum's museum, they also created an opportunity to communicate with students and convey some important information about a fascinating time in American history.⁵³

Using the Internet in the history classroom does not always have to utilize the latest innovations in Web design. As I have said before, teachers should use the Web to engage and communicate with their students. Professor Patricia Seed has used the Internet as a unique teaching environment that allows her classes to focus on the nature of historical information. Instead of providing the class with an on-line syllabus consisting of a page of links grouped by subject matter, Seed assigned her students to produce the list themselves. Searching on a particular topic, students determined which sights were historically accurate and appropriate for inclusion. The class then constructed simple HTML pages and posted the results.⁵⁴ The result required students to make historical judgments and then apply some basic understanding of technology to come up with the final project. This merging of historical content and digital media begins the process of getting students to think beyond traditional research boundaries. Later these simple sites

⁵² Michael O'Malley, "Magic, Illusion and Detection at the Turn of the Last Century," (<http://chnm.gmu.edu/courses/magic>). Viewed on-line March, 7, 2005.

⁵³ "The Lost Museum" Site created in 2000 and maintained by American Social History Project / Center for Media & Learning at City University of New York in collaboration with the Center for History and New Media at George Mason University. <<http://www.lostmuseum.cuny.edu/>>

⁵⁴ Patricia Seed, "Teaching with the Web: Two Approaches," *Perspectives* (February 1998): Section II. On-line edition available at <http://www.historians.org/perspectives/issues/1998/9802/9802TEC2.CFM>.

would be expanded in more elaborate projects with multimedia components and their own historical interpretation and analysis. Whether sites are simple HTML or elaborate interactive showcases, educators must never lose sight of the primary goal of administering good history instruction.

VI. Future of Historical Studies through Digital Technologies

So what does the future hold for the teaching of history? New media designers should always aim to draw people in and engage them in historical topics. Even if the way to grab an individual's attention relies on some new media's replication of an old familiar form of media, anything that holds a reader's or visitor's interest long enough to convey some new piece of knowledge is worth the effort. While designing a show for the Art Institute of Chicago, Douglas R. Nickel began to investigate ways to display three photographic albums compiled by Lewis Carroll. "Dreaming in Pictures: The Photography of Lewis Carroll," originally opened in San Francisco's Museum of Modern Art, and by the time the show opened in Chicago, Nickel had turned to new media as a means to engage his audience. Nickel "designed a left turn shaped kiosk topped by a touch activated screen that's tilted at the angle at which one might hold a book."⁵⁵

The multimedia kiosks do not appeal to everyone. William Noel, curator of the Walters Art Museum in Baltimore, viewed the interactive displays as an unnecessary expense. He claimed, "The virtual book does not replace the real thing—it's a didactic supplement to it." However, none of the other curators were claiming that the virtual book replaced the actual historical artifact itself. The books are so old and fragile that a display of the original books may at best show the book open revealing only two pages. At this point, the book loses its functionality as a book and becomes an artifact no different from an ancient snuff bottle or a Native American arrowhead. Animating the pages in a multimedia environment restores the book as a functional object that conveys information. To curators such as William Noel, the kiosk may seem gimmicky, but museum visitors have the option of perusing multiple pages and getting a better sense of the value of the book than they might if they could only view the object behind glass.

Another goal of new media I stated earlier is that a main function should be to do things that cannot be done in other media or contexts. An example of this is The British Library's display of Leonardo da Vinci's notebooks.⁵⁶ These displays not only use the page turning functions previously mentioned, but they also incorporate a tool known as the "Magic Lens."⁵⁷ This tool allows you to search around da Vinci's notebooks and zoom in on certain sections as though you are holding a magnifying glass yourself. The

⁵⁵ Carol Kino, "Please Touch the Art," *New York Times*, 2 November 2003, on-line edition.

⁵⁶ "Turn the Pages of Leonardo's notebook" (<http://www.bl.uk/whatson/exhibitions/leonardo/ttp.html>) or (<http://www.bl.uk/collections/treasures/digitisation4.html>)

⁵⁷ For information on the Magic Lens see "About the Magic Lens" *DoHistory*. Created by Film Study Center, Harvard University (<http://dohistory.org/diary/exercises/lens/aboutLens.html>).

Museum also added features such as the mirror to allow you to see how da Vinci wrote in his notebooks in a mirror image so that his work would not be stolen.

The aforementioned advancements in technology are examples of how museums incorporated digital technologies in their exhibits. After the effort and expense of developing the exhibits, the museums did not let this work go to waste. The British Library simply moved the multimedia exhibit to the Web. Now schools that are in other parts of the country or world can take advantage of these unique exhibits. As tools such as the “Magic Lens” and virtual page turners become widely available, we will increasingly see them incorporated in course Web sites.

V. Conclusion

Should we hail the arrival of new media as a revolutionary breakthrough in history education? Is it on par with the efforts of Herodotus and Thucydides? Is it comparable to the development of Johannes Gutenberg’s printing press? The scholarly conventions accepted by the academy today did not suddenly appear from that first press. Five centuries of development and refinement followed the printing of Gutenberg’s first bibles. This is a transitional period. Everyone is exploring the new playing field created by a digital world. Whether or not we perceive the incorporation of new media in education as a revolutionary development will depend on how it is done.

Fundamental changes must be made by teachers and students. Students who have grown up with technology may not have much trouble adapting to new media based learning, but their instructors may have to make more of an effort to fulfill their part. In education, everyone is in search of that “teachable moment” discussed by Judith Sandholtz and her colleagues. It may seem at times as if technology offers all flash and no substance to education. Sustaining a student’s interest and developing an engaged learner increases a teacher’s opportunity to connect with a student.

Bolter and Grusin do not consider new media a particularly revolutionary development. To a certain extent I would have to agree with them. If we merely replace traditional methods of teaching with computer instruction, we have not fundamentally altered education. We must keep in mind the question, “What can new media do that other forms of media cannot?” If we only replicate traditional media we have squandered the potential of a powerful educational tool.

Thucydides did not discover history, he merely wrote it down. Digital technologies have not yet revolutionized the study of history, but looking back centuries from now history education’s introduction of new media will unquestionably be viewed as the new Thucydides.