

Historical Digital Literacy, One Classroom at a Time

Tona Hangen

We live in an exciting but daunting time for history teaching. An explosion in digital sources, resources, tools, and methods for the study of history has taken place in recent years; millions of pieces of information and misinformation are now only a keystroke away. No longer the purview of energetic but fringe Internet start-ups or of a talented few “hackers” among us, digital initiatives undertaken by respected research institutions, centers, and prestigious grantors have moved “the digital” into the mainstream of our field. The concept encompasses archival digitization, electronic publishing and reading formats, and new modes of scholarship that employ computing and technology integrally. Yet how these rapid transformations might best be incorporated into history classrooms remains an unsettled issue. What should the emergence of digital history mean for our students and our teaching? In this essay, I offer a few examples, drawn from my efforts to bring digital resources and tools into my courses. I focus my history pedagogy around what I call “historical digital literacy” for two reasons: (1) because technology is an opportunity—even an imperative—in this moment, and (2) because technology provides genuinely exciting ways to help students grasp the constructed nature of history.

Providing definitions may be helpful at the outset. Teaching students to think *historically* begins by deconstructing the myth that history is a completed body of knowledge to be assimilated (primarily through memorization), and by replacing it with a sense of history as a dynamic, contentious, and incomplete process. The characteristic of *digital* describes resources made, accessed, or manipulated online or that employ computers for coding, electronic information storage and retrieval, data analysis, or visual presentation. *Literacy* implies the ability to read and write language—beyond reading and comprehension to writing, making, or transferring knowledge from one domain to another. *Digital literacy* as it relates to history, therefore, not only embraces critical use of digital tools and resources for studying the past but, ideally, moves toward fluency with their underlying principles, and even to the ability to alter, repair, or make the tools. *Historical digital literacy* is facility with using artifactual or digital sources (or both) by applying appropri-

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ate questions and investigative methods to construct history in ways that take advantage of the capabilities (and avoid the pitfalls) of our digital age. Students versed in historical digital literacy demonstrate breadth and flexibility by remaining open to novel and often-unintended uses of tools borrowed from diverse sources. They see their roles as makers, not just consumers, of historical knowledge.¹

My thinking about historical digital literacy has evolved over several years in my courses, which I teach face-to-face with relatively small class sizes (under thirty-five students). As my confidence in using digital tools and methods has increased, so has my conviction that history students need more exposure to them in their coursework. I have employed this concept across survey classes, history methods courses, and electives, and I have found that course design that thoughtfully employs digital tools also invites active learning and can improve student engagement and educational outcomes.

Conceptualizing historical digital literacy and articulating what it might look like in my classroom have also helped me connect several profound and interrelated transformations in higher education. The first is a movement toward active, praxis-based learning across many disciplines—including history, which has seen a renewed emphasis on adopting, practicing, and demonstrating mastery of professional historians' habits of mind. A second, related shift is a reorientation of the instructor's mindset from "what I teach" to "what they learn." This entails not merely checking for accurate content acquisition but more fundamentally organizing courses around specific, measurable student learning outcomes, skills, or competencies. Outcomes-based course design and assessment (as authentic disciplinary best practices) handily dovetail with current trends in higher education toward what the Liberal Education for America's Promise initiative designates as high-impact educational practices (specifically, methods that increase student engagement and retention). These practices include collaborative learning. Although the stereotype of solitary scribblers persists, history writing is, in fact, a profoundly collective endeavor, made even more so by technology. Historical interpretation is done through consensus, and historians are always in conversation (real or implied) with other scholars. Selectively applied technology can likewise help make classroom learning less isolating and more oriented toward shared, made knowledge. A third development is the shift from analog to digital in research, teaching, and learning. "Computer-enhanced" courses are now the expected minimum across higher education, even for face-to-face classes in brick-and-mortar campus buildings, and this is as true for liberal arts courses as it is for those in the sciences and engineering. Vast and increasing access to historical resources in digital environments opens up new possibilities in history for research and learning,

¹ Sam Wineburg, *Historical Thinking and Other Unnatural Acts: Charting the Future of Teaching the Past* (Philadelphia, 2001); Peter N. Stearns, *Meaning over Memory: Recasting the Teaching of Culture and History* (Chapel Hill, 1993); Robert Blackey, *Perspectives on Teaching Innovations: Teaching to Think Historically* (Washington, 1999); Sam Wineburg, Daisy Martin, and Chauncey Monte-Sano, *Reading like a Historian: Teaching Literacy in Middle and High School History Classrooms* (New York, 2011); Nikki Mandell and Bobbie Malone, *Thinking like a Historian: Rethinking History Instruction: A Framework to Enhance and Improve Teaching and Learning* (Madison, 2007). Gunther Kress, *Literacy in the New Media Age* (London, 2003); Annette Vee, "Understanding Computer Programming as a Literacy," *Literacy in Composition Studies*, 1 (no. 2, 2013), 42–64. Brett D. Hirsch, ed., *Digital Humanities Pedagogy: Practices, Principles, and Politics* (Cambridge, Eng., 2012); Sam Hamilton, "The Standards of Critical Digital Pedagogy," July 17, 2014, *Hybrid Pedagogy*, <http://www.hybridpedagogy.com/journal/standards-critical-digital-pedagogy>; Sean Michael Morris, "Decoding Digital Pedagogy, pt. 1: Beyond the LMS," *ibid.*, March 5, 2013, <http://www.hybridpedagogy.com/journal/decoding-digital-pedagogy-pt-1-beyond-the-lms>; William G. Thomas II, "Computing and the Historical Imagination," in *A Companion to Digital Humanities*, ed. Susan Schreibman, Ray Siemens, and John Unsworth (Oxford, 2004), <http://www.digitalhumanities.org/companion/view?docId=blackwell/9781405103213/9781405103213.xml&chunk.id=ss1-2-5&toc.depth=1&toc.id=ss1-2-5&brand=default>.

as we have exchanged the “pedagogy of scarcity” for the pedagogy of abundance. Our challenge then becomes to help students survive in that sea of information and digitized materials—to empower them to curate, search, locate, read, and interpret sources with integrity and intelligence. Even so-called digital natives need guidance to navigate ongoing transformations.²

Technology may enable vastly larger economies of scale in content delivery and data collection about student outcomes, but I hope it will never completely automate truly excellent history teaching, which is, at base, a human relationship of apprenticeship and empowerment. The recent hype and attendant concerns about massive open online courses (MOOCs) have brought renewed attention to the use of technology in teaching. Now may be the opportune moment to consider what digital tools and skills may make history teaching more effective. I use “effective” in the sense that such teaching accomplishes the purpose for which it is designed: to disrupt the common misconception that history is a finished packet of knowledge to be handed off by professors and simply received and retained by students. Effective history instruction permanently and irreversibly awakens students to the insight that history is a constructed, contestable argument, and it does so in such a way that prevents students from unlearning it. My main teaching goal—even at the survey level—is to help students grasp the process by which history is constructed, increasingly through the use of digital work. Each of the following examples demonstrates how an instructor strategically employing technology can serve the larger goal of improving teaching effectiveness in the digital age by making the process of historical thinking more transparent and legible, even to novice learners. Although I may discuss particular tools, software, or Web sites by name, I do not intend to narrow the discussion to only those resources; instead I provide practical solutions from my own teaching, which could also be adapted to other platforms or course formats.³

Plugging into Collaboration

Courses designed to spark active learning often engage students in collaboration or small-group work. At the extreme, a fully “flipped” course model advocates moving all preparatory learning and lecturing outside the classroom (typically employing video or audio content delivery), to be replaced with hands-on problem solving and opportunities for students to practice course skills during class. Whether used in online, flipped, or tra-

² Grant Wiggins and Jay McTighe, *Understanding by Design* (Boston, 2005); Lorin W. Anderson and David R. Krathwohl, eds., *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives* (Boston, 2009); L. Dee Fink, *Creating Significant Learning Experiences: An Integrated Approach to Designing College Courses* (San Francisco, 2003). For the list of effect teaching methods compiled by the Liberal Education for America's Promise initiative, see “High-Impact Educational Practices,” *Association of American Colleges and Universities*, <https://www.aacu.org/leap/hip.cfm>. On the pedagogy of scarcity, see John McClymer, quoted in *Teaching History in the Digital Age*, by T. Mills Kelly (Ann Arbor, 2013), 6–27, esp. 26.

³ Positioned as free, distance-learning, open-access college or vocational training classes, massive open online courses (MOOCs) have been developed and promoted by several high-profile educational and corporate partnerships, including *EdX*, *Coursera*, and *Udacity*, since 2012. See Kelly Schrum and Nate Sleeter, “Teaching History Online: Challenges and Opportunities,” *OAH Magazine of History*, 27 (July 2013), 35–38; Kevin Carey, “Into the Future with MOOCs,” *Chronicle of Higher Education*, Sept. 3, 2012, <http://chronicle.com/article/Into-the-Future-With-MOOCs/134080/>; Laura Pappano, “The Year of the MOOC,” *New York Times*, Nov. 2, 2012, <http://www.nytimes.com/2012/11/04/education/edlife/massive-open-online-courses-are-multiplying-at-a-rapid-pace.html>; James G. Mazoue, “The MOOC Model: Challenging Traditional Education,” *EDUCAUSE Review Online*, Jan. 28, 2013, <http://www.educause.edu/ero/article/mooc-model-challenging-traditional-education>; and Susan Meisenhelder, “MOOC Mania,” *Thought and Action*, 29 (Fall 2013), 7–26.

ditional course structures, collaborative learning can benefit from digital tools that allow students to connect, share, and construct knowledge together in real time.⁴

Perhaps the simplest level of digital collaboration is a document that multiple people can author or edit simultaneously. By using a platform such as *Google Docs* students can create and edit text documents, spreadsheets, or slide presentations together in real time, whether working next to each other in the same physical space or remotely accessing the documents online. Since editing can be enabled or disabled as needed, *Google Docs* can be employed for quick, temporary work or to generate a more permanent document. All changes are instantly saved—a feature that makes losing work done online almost impossible. For that reason I tend to use *Google Docs* for short-term, messy collaboration, such as helping students build working drafts or brainstorm ideas. I might request that students bring their laptops to class on a day we review for a test, when I open a spreadsheet listing key words, concepts, or primary documents and I have students divide the list to populate the fields. By the end of class, we will have a rough collaborative study guide accessible to all. In a workshop day focused on writing skills, a group document allows students to annotate and edit a writing sample together, testing different thesis statement possibilities or combing through a draft for examples of unsupported speculation. As a third example, I provide small groups of students one of several different accounts of the same event, drawn from various online and textbook sources. I ask groups to critique and improve their assigned account using evidence and then report back to the class on what they changed and why.

One of my most successful collaborative workshops was a “yellow journalism” exercise, using *Google Docs*, in my survey class during a unit on American imperialism. By searching among templates (documents with preloaded graphic-design elements or specially formatted text) uploaded by previous users, I located one that looked like the front page of a newspaper, with space for a masthead, headlines, column text, and images. I saved multiple copies of the template, each under a new name, so that every group would have its own blank document. In class, I assigned groups to build their own example of “yellow journalism,” starting with a preselected collection of primary sources and adding online resources and images. Working with a few laptops in each group, the students invented their newspaper’s fictional name, located and placed relevant images (photographs, engravings, political cartoons), wrote editorials, and crafted news articles that reflected the perspective and tone of the journalism of the era—whether pro-imperialist or anti-imperialist. Although this assignment was accomplished in a single workshop session, the students were fully engaged from start to finish, and the results were impressive despite the short time frame. The students’ *One World Press* enthusiastically championed Theodore Roosevelt’s “big stick” policy; their *Louisiana Standard* used W. E. B. Du Bois’s *Crisis*

⁴ For examples of courses designed to spark active learning, see Michael Sweet and Larry K. Michaelsen, eds., *Team-Based Learning in the Social Sciences and Humanities: Group Work That Works to Generate Critical Thinking and Engagement* (Sterling, 2012). A “flipped” course model is sometimes also called “inverted” or “peer-instructed” classroom learning. See, for example, Catherine Crouch and Eric Mazur, “Peer Instruction: Ten Years of Experience and Results,” *American Journal of Physics*, 69 (Sept. 2001), 970–77; Maureen J. Lage, Glenn J. Platt, and Michael Treglia, “Inverting the Classroom: A Gateway to Creating an Inclusive Learning Environment,” *Journal of Economic Education*, 31 (Winter 2000), 30–43; Kathleen M. Fitzpatrick, “Classroom Lectures Go Digital,” *New York Times*, June 24, 2012, <http://www.nytimes.com/2012/06/25/us/25iht-educside25.html>; and Dan Berrett, “How ‘Flipping’ the Classroom Can Improve the Traditional Lecture,” *Chronicle of Higher Education*, Feb. 19, 2012, <http://chronicle.com/article/How-Flipping-the-Classroom/130857/>. For a skeptical view, see, for example, Ian Bogost, “The Condensed Classroom: ‘Flipped’ Classrooms Don’t Invert Traditional Learning So Much as Abstract It,” *Atlantic*, Aug. 27, 2013, <http://theatlantic.com/technology/archive/2013/08/the-condensed-classroom/279013>.

editorials to question the involvement of African American soldiers in World War I; and their *American Journal* mourned the loss of life in the sinking of the *Lusitania* with notable sensationalism. Everyone seemed involved and interested in the project; class happily ran a little late. This could easily have expanded into a more developed exercise over several days, leading to a deeper discussion about the nature of such sources, changing ideas about journalistic objectivity, or the importance of understanding historical perspective and context. The editable digital document easily allowed students to build a realistic-looking front page in a short amount of time, generate their own group understandings and revisions, and publish their work to the rest of the class.⁵

Editable pages can also be built in the form of a wiki (an application that allows visitors to make changes, contributions, or corrections to an electronic document); many different wiki platforms are available, including free versions. Most students are familiar with accessing and reading wikis, so building or adding to one can be a helpful exercise in knowledge creation. Unlike *Google Docs*, wikis are designed such that each page logs (keeps track of) when and by whom changes are made, while it also maintains an archive of all previous versions. This can be helpful for an instructor who wants to assess group participation or for a group that needs to access its earlier drafts. A wiki need not be encyclopedic; I often use wikis to build simple Web sites to help manage ongoing class projects. One example is a semester-long (simplified) congressional simulation project for my course United States Since 1945. Early on, I divide the class into unicameral congressional committees and, throughout the semester, give students the opportunity to evaluate historical decision points from that committee's policy perspective. Each committee's wiki page serves as an organizing hub for its work and an ongoing diary of its decisions and proposals. When our class Congress is in session, we use the wiki to present legislation and record debates and votes. By semester's end the class has created its own "Congressional Record" that helps illustrate, even on a small scale, how complex the political dynamics of decision making and governance can be. In my first-year honors seminar on the history of American amusements, students used a wiki to organize a long-term historical fiction-writing project. Members of the class collaboratively authored a novella based on the life of P. T. Barnum, using the wiki to chart the research process over many weeks and to provide a work space for drafts. Each group's designated wiki page grew into a chapter of the finished work and permitted easy collaboration during and outside of class sessions.

Students can also collaborate in generating knowledge or responding to historical questions using an electronic audience-response device such as i>clicker, texting an answer with a cell phone to generate instant class-wide response, or (as a low-tech alternative) holding up a colored card to provide a wordless visual response. The advantage of such arrangements is simultaneous universal participation, giving everyone an equal chance to weigh in, even in larger courses. Most student-response programs allow the answers to be tabulated and displayed on a screen for immediate visible results. While these are often used as a form of rapid assessment and feedback or to check understanding of a concept, they can be equally useful to allow students to build—or negotiate—consensus and share knowledge. Questions that invite interpretation, rather than those that simply elicit confirmation of known facts, are effective for demonstrating the existence

⁵ For an example of the use of user-uploaded templates, see Tona Hangen, U.S. History II, Fall 2014, syllabus, <http://wsu.tonahangen.com/hi460/wp-content/uploads/2014/08/460.Fa14.pdf>.

or absence of a consensus. Understanding where the whole group agrees or disagrees can contribute to collaborative, active learning as students discuss the results, turn to historical evidence to argue for or against an interpretation, or grapple with the complexities of historical knowledge.

As these examples suggest, digitally enabled collaboration may help students work together effectively and may reinforce several important components of historical scholarship: peer review, accountability, and the iterative nature of historical knowledge. No scholar creates history in solitude. Allowing students structured opportunities to use digital tools to connect their thinking to others' ideas can help strengthen their understanding of history as an ongoing informed conversation in which they can see themselves as active participants, not just eavesdroppers.

Diving into the Digital Archive

When I began graduate work in history in 1992, historical research was conducted almost exclusively using analog tools: physical card catalogs, print periodical indexes, and, of course, stacks of books and bound journals. For the most part, primary research required in-person access to microform collections or to numbered files stored in archival boxes. Such research left a clear paper trail of request slips, photocopying orders, and idiosyncratic index card note-taking systems. All that has changed. Today's researchers and public historians must also negotiate the shifting ground of works that originate in digital form (and are not or cannot be reproduced in print or analog formats), online periodical and primary-source databases, digital archives, images, multimedia, and digitized print works, along with a dizzying array of programs and systems designed to help manage research collection and analysis in the digital age. Students need authentic apprenticeship in understanding and using these resources if they are to learn the methods of professional history.⁶ Using and (wherever possible) building digital archives and research management systems are therefore key components of historical digital literacy.

Novice students of history might assume that digital history resources are essentially infinite, permanent, and easily accessible. Experienced historians know that the digital record useful for historical research, while always expanding, is unstable, fragile, and highly partial. Even sites designed for robust public access can disappear in seconds, as when the Library of Congress temporarily suspended search and retrieval of its digitized resources during the October 2013 shutdown of the U.S. government. Assignments built to explore the expanding world of digital archives can vastly increase the possible source base for student research, even at the introductory level, and can have students "doing" history from the start. In addition to drawing from digital collections for primary-source evidence, students might analyze, select, curate, or remix items from digital collections to build virtual exhibits or create their own lesson plans. Such materials are usually only found through specialized searching within collections, however, not via generic searching on the open Web. Because even free, open-source, digitized texts may not appear in the results of a simple Google search, students may need to learn Boolean searching and grasp the basics of the knowledge ontologies, such as Library of Congress subject headings, on which archives are built. Ideally, such assignments also intentionally draw stu-

⁶ Dominique Daniel, "Teaching Students How to Research the Past: Historians and Librarians in the Digital Age," *History Teacher*, 45 (Feb. 2012), 261–82.

dents' attention to some of the constraints, politics, economics, and ethics of using digital archives—all equally important lessons for history learners. They might raise such questions as: Who is represented in a collection? Whose perspective is missing? Who benefits from our access to these materials? Who pays for them, or what interests underwrite their creation? Who “owns” them, and how can we as historians use and cite them responsibly?⁷

Nothing teaches the process, limits, and ethics of archive building quite like actually building one. Digitally, this could be as simple as a student-created Pinterest board or a Flickr album. Or it could be as elaborate as partnering with a university or public library to help digitize a portion of their collection as part of a history course, or designing a project to digitize something in the public realm, such as the cemetery documentation database that students built in T. Mills Kelly's methods course, *Dead in Virginia*, at George Mason University. For several years students in my introductory and elective courses developed small-scale individual digital projects based around local history, such as photographing city statues and buildings, interviewing local residents, digitizing and interpreting material from a historical society collection, or collecting multimedia artifacts from current religious communities. These were added to a searchable online database using Omeka, a free platform for creating digital archives; the project was a genuinely challenging task with a tangible result with a wide potential audience. While I would certainly approach aspects of the digital project differently (most notably, taking the time to set up a sustainable process to upgrade and maintain the now-vanished site), building an archive collaboratively helped my students understand through hands-on experience such important concepts as provenance, metadata, and intellectual domains.⁸

A final assignment in my U.S. history survey course each semester asks students to contribute to a small-scale class archive of recent history. This History Now project began a few years ago when I asked each member of the class to assemble a folder of three to five primary sources that could be used to understand an event in recent history, and to write a brief essay orienting a future student to the event. The next round of students received the original packets, with the former students' names removed, and were asked to evaluate the quality of the packet, contribute one new source, and write a justification for its inclusion. Each new class brings a fresh round of evaluations and additions. At first glance this might not seem like a technology-dependent project nor one that contributes much to students' historical digital literacy, since the packets are physical folders stuffed with printed material contributed over a number of semesters by successive groups of students. Nonetheless, I have been surprised by just how much the project has unintentionally raised my students' and my awareness of the issues surrounding digital sources for historical research, since most of their contributed material was discovered through Internet searches. A previous student's addition might be a now-dead link. Material from Web sites of questionable authority appears in some packets. A printout of a Web article might also include page ads, which become additional historical data points in their own right. Sources obtained from sites without permalinks contain convoluted or partial URL strings. Material downloaded to a compact disk or flash drive may no lon-

⁷ Gail Drakes, “Who Owns Your Archive? Historians and the Challenge of Intellectual Property Law,” in *Doing Recent History: On Privacy, Copyright, Video Games, Institutional Review Boards, Activist Scholarship, and History That Talks Back*, ed. Claire Bond Potter and Renee C. Romano (Athens, Ga., 2012), 83–114.

⁸ Kelly, *Teaching History in the Digital Age*, 86–88. For examples of small-scale individual digital projects, see Scott E. Casper, “Shared Histories: Teaching Outside the Classroom ‘Box,’” *Journal of American History*, 99 (March 2013), 1159–60. Amanda Morton, “Digital Tools: Zotero and Omeka,” *ibid.*, 98 (Dec. 2011), 952–53.

ger be readable. Not all students cite the provenance of their sources accurately, giving future packet users a puzzle to solve. Weighing the quality of a few sources and curating a new addition might initially seem elementary, but it turns out to be a good measure of whether students have grasped the course's foundational concept that history's construction is iterative and requires careful evaluation of multiple, reliable sources—even (or especially) sources located online. Particularly for nonmajors, a history course that helps teach students to become “more critical consumers of online content” provides a valuable lifelong lesson.⁹

Participating in crowdsourced document transcription projects allows students to access digital artifacts but also to contribute to digital archives. Even history novices can help preserve the past, make new historical knowledge, and work with (facsimiles of) original sources: ink spots, scribbles, and all. This can create an immediate, if fleeting, connection to existing historical projects with a shallow learning curve; I have successfully used these as exercises in my survey and historical-methods courses. One of the best examples is *DIY History: Help Build the Historical Record by Doing It Yourself!*, a University of Iowa site that invites the public to help transcribe manuscripts from the university library's special collections and the Iowa Women's Archives. The project's recent initiatives included “Civil War Diaries and Letters” (now nearly completed) and nineteenth-century letters and diaries for “Pioneer Lives.” Similarly, the Newberry Library has an open transcription project for its Civil War soldiers' letters. Another excellent example is the New York Public Library's public transcription site for the vast restaurant menu collection housed in its rare books division, allowing even distant researchers to search and analyze the collection in new ways. The Smithsonian Institution also recently opened up portions of its manuscript collection for public transcription through its Smithsonian Digital Volunteers program. Projects such as these expose a different aspect of the research process to a wider audience and are a valuable exercise for history learners. Transcribing a document, instead of simply locating and “mining” it as primary-source evidence, forces students to slow down and read closely, especially if they encounter indecipherable handwriting, puzzling abbreviations, or vernacular phrasing. In my experience, students who perform even short stints as volunteer transcriptionists become very curious about what they are reading, which generates open-ended questions without easy answers (the best kind of questions, in my view).¹⁰

Aside from volunteering to transcribe documents, students can also become involved in crowdsourcing history by tagging or geolocating Web content. There are many possibilities, either for short encounters or longer, more sustained assignments; I will mention only a few. Anyone can contribute to *Historypin: A Global Community Collaborating around History*, a site that aggregates historical images and information about the images' locations worldwide. Budding citizen investigative journalists can help geolocate and verify Internet videos via *Belln;gcat*. Students can play brief interactive games to tag images, and video and audio clips from museum and library collections with metadata at *Metadatatagames*. Local and family history can be added to the growing online database at *FamilySearch* or via other free online genealogical services. Students could become involved in

⁹ Kelly, *Teaching History in the Digital Age*, 114.

¹⁰ *DIY History: Help Build the Historical Record by Doing It Yourself!*, <http://diyhistory.lib.uiowa.edu>. *The Civil War in Letters*, <http://www.newberry.org/civil-war-letters-newberry-library-transcription-project>. *What's on the Menu?*, <http://menus.nysl.org>. *Smithsonian Digital Volunteers: Transcription Center*, <https://transcription.si.edu>.

documenting local cemeteries at *BillionGraves* by uploading smartphone images or by transcribing headstone markers.¹¹

Even Wikipedia can be valuable for teaching about crowdsourcing and the construction of historical information on the Internet. Because of Wikipedia's ubiquity, and because many high school students are ineffectually warned against using the site in their research, I have encountered few college students who have any notion of how Wikipedia entries came to exist or of how to evaluate entries critically. I created an initial assignment to "dissect" a Wikipedia entry for my first-year seminars each fall, and I stage similar workshops in other introductory-level history courses. With direction, students soon discover that Wikipedia stores all previous versions of every entry (allowing comparison of change over time), and that accompanying each entry is a discussion page on which the contributors and editors negotiate what does and does not belong in that particular definition. These Wikipedia features are hidden in plain sight, exposing the site's collaborative method and its often-anonymous authorship to open scrutiny once students know how to look for them. These simple assignments help history learners become more critical and empowered users of their own digital resources and more attuned to the processes (and also, perhaps, to the intellectual politics and economic model) by which information appears to flow unimpeded at a user's command. A more sophisticated task might have students contribute to Wikipedia themselves, though instructors should think carefully about how to design—and grade—such an assignment, given the instability of the site's content.¹²

Playing in the Digital Toolbox

One of the most important ways to build historical digital literacy is to introduce students to digital tools that help them craft meaning from the past and share it with others. Many of these approaches are used within or grow out of the vibrant, highly permeable field of digital humanities. Some tools permit the creation and analysis of historical knowledge, such as Geographic Information System (GIS) mapping, text mining, electronic document annotation, and network analysis. Others generate new methods of storytelling or presenting and disseminating knowledge in audio, visual, digital, virtual, or nonlinear formats, from gaming, applications, and simulations to timelines, nontextual narratives, and portfolios. While not every student must develop expertise with every tool, today's history learners benefit from seeing at least some of these tools at work throughout their curriculum, and history educators need to be thinking ahead about how to use and teach these tools to keep their history programs current. Historical digital literacy should strengthen the ability to gather data, manipulate its form, and interpret it in ways that make sense for the task at hand (qualitatively, quantitatively, or with visualizations) and enhance awareness of some of the ways researchers are using these tools

¹¹ *Historypin: A Global Community Collaborating around History*, <http://historypin.com>. *Bellingcat*, <https://bellingcat.com>. *Metadatagames*, <http://metadatagames.org>. *FamilySearch*, <http://FamilySearch.org>. *BillionGraves*, <http://BillionGraves.com>.

¹² Roy Rosenzweig, "Can History Be Open Source? Wikipedia and the Future of the Past," *Journal of American History*, 93 (June 2006), 117–46; Jeremy Boggs, "Assigning Wikipedia in a U.S. History Survey," April 5, 2009, blog posting, *Cloweb*, <http://cloweb.org/2009/04/05/assigning-wikipedia-in-a-us-history-survey/>; Cullen J. Chandler, "Sleeping with the Enemy: Wikipedia in the College Classroom," *History Teacher*, 43 (Feb. 2010), 247–57. On using, editing, or studying Wikipedia as an integral part of history courses, see Kelly, *Teaching History in the Digital Age*; and Jack Dougherty and Kristen Nawrotzki, eds., *Writing History in the Digital Age* (Ann Arbor, 2013).

to generate innovative humanities scholarship. Digitally literate students would be adept tool users who share their work with authentic audiences in real-world contexts.¹³

One simple way that I incorporate a digital tool into my teaching is to give students experience in blogging and with curating and reflecting on their own work online. In its introductory methods course, the history department at Worcester State University, where I teach, has adopted WordPress as the preferred format for student-authored learning journals, which students then revise into senior ePortfolios in the capstone research seminar. Although there are many excellent campus subscription services for ePortfolios, we opted to use an open-source platform, in part because it can continue to service students after graduation at no cost. Sometimes, blogging initially inspires dread in the most technology-averse student, but for the most part our history majors quickly see the value in utilizing a platform commonly used across the professional world to create and share their history learning. An explanatory note in my senior research seminar syllabus explains my reasoning:

Increasingly, historians of all kinds (academic, educational, public, museum, freelance) research, collaborate and publish online. Professional organizations for scholars in the humanities, likewise, communicate on the internet and use social media. As you enter a complex job market, being able to communicate your scholarly ideas to diverse audiences and present yourself professionally may give you an edge or help you network in your chosen field. By creating an ePortfolio on WordPress, you gain potentially marketable skills with this widely-used, open-source web publishing platform. Through it, you have developed and strengthened skills in writing, presentation, digital literacy and current technology. Humanities scholars cannot leave “computer stuff” to their colleagues in math, science and engineering; we need to be equally adept in using technical tools to enhance our work.

Whenever possible, I have also encouraged students to use digital media and presentation programs to experiment with new forms of historical storytelling, including digital timelines, interactive texts (such as Twine), podcasts, voice-annotation (such as Voice-

¹³For an introduction to the scope and philosophy of digital humanities, see Daniel J. Cohen et al., “Interchange: The Promise of Digital History,” *Journal of American History*, 95 (Sept. 2008), 442–51; Matthew G. Kirschenbaum, “What Is Digital Humanities and What’s It Doing in English Departments?,” *ADE Bulletin*, 150 (2010), 55–61; Melissa Terras, Julianne Nyhan, and Edward Vanhouste, *Defining Digital Humanities: A Reader* (Surrey, 2013); Thomas Bartscherer and Roderick Coover, eds., *Switching Codes: Thinking through Digital Technology in the Humanities and the Arts* (Chicago, 2011); Anne Burdick et al., *Digital Humanities* (Cambridge, Mass., 2012); and “Intro to Digital Humanities: Concepts, Methods, and Tutorials for Students and Instructors,” *University of California, Los Angeles, Center for Digital Humanities*, <http://dh101.humanities.ucla.edu>. On Geographic Information System mapping, see Jeffrey W. Snyder and Thomas C. Hammond, “‘So That’s What the Whiskey Rebellion Was!’: Teaching Early U.S. History with GIS,” *History Teacher*, 45 (May 2012), 437–55; David J. Bodenhamer, John Corrigan, and Trevor M. Harris, eds., *The Spatial Humanities: GIS and the Future of Humanities Scholarship* (Bloomington, 2010); Ian N. Gregory and Paul S. Ell, *Historical GIS: Technologies, Methodologies, and Scholarship* (Cambridge, Eng., 2007); and Amy Hillier and Anne Kelly Knowles, eds., *Placing History: How Maps, Spatial Data, and GIS Are Changing Historical Scholarship* (Redlands, 2008). On text mining, see Lisa Guernsey, “Digging for Nuggets of Wisdom,” *New York Times*, Oct. 16, 2003, <http://www.nytimes.com/2003/10/16/technology/circuits/16mine.html>; and Matthew Jockers, *Text Analysis with R for Students of Literature* (New York, 2014). Kelly, *Teaching History in the Digital Age*. For an example of electronic document annotation, see a Web application for literary annotation developed by the Massachusetts Institute of Technology HyperStudio at *Annotation Studio*, <http://www.annotationstudio.org>. For an introduction to network analysis using the software Gephi, see Scott B. Weingart, “Demystifying Networks, Parts I and II,” *Journal of Digital Humanities*, 1 (Winter 2011), <http://journalofdigitalhumanities.org/1-1/demystifying-networks-by-scott-weingart>; and “Editor’s Choice: Networks Analysis Roundup,” *Digital Humanities Now*, Dec. 16, 2011, <http://digitalhumanitiesnow.org/2011/12/networks-analysis-round-up/>. Two clearinghouse sites for digital humanities tools are *DiRT: Digital Research Tools*, <http://dirtdirectory.org>; and *dhCommons*, <http://dhcommons.org>. For introductory tutorials on network analysis, see Quinn Warnick, ed., *DH Tools for Beginners*, <http://medium.com/dh-tools-for-beginners>; and *The Programming Historian*, <http://programminghistorian.org/>.

Thread), and Web curating (such as Storify). These tools inject a welcome element of play into history, but using them also highlights some of the discipline's core concerns about how to construct meaningful and relevant stories in any era—a critical step to bridge the gap between academic history and our multiple publics. Apprenticeship in crafting “traditional” long-form narratives for the next generation of scholarly articles, dissertations, and monographs will always have a place in the history curriculum. We should, however, also give space in the curriculum to reimagining how to tell a historical story that appeals to popular audiences and takes advantage of proliferating digital and mobile formats where history is increasingly encountered.¹⁴

Whether their research results in a conventional, footnoted paper or in a more novel form, students today can use digital tools to help them manage their computer-based historical research, from note-taking and source collection to citation and writing. Some institutions have campus-wide licenses for a commercial system such as Endnote, while others encourage students to adopt a free system such as Zotero, Mendeley, ProQuest Flow, or Evernote. Many college students already perform most of their academic work using a computer or other Internet-connected device, so linking their preferred workflow to how they learn to do history is another way of building historical digital literacy. Scholars who find these or similar systems helpful in organizing their research might also look for ways to introduce them to their students. Even at the undergraduate level and especially within the curriculum for the history major, students need multiple opportunities to practice locating, annotating, working with, and citing sources. Making a personalized digital “archive” of sources and notes over time is no guarantee that students will become more self-aware learners or that they will see their historical learning as connected, but they are unlikely to develop these historical habits of mind without some kind of workable system to manage their research processes.

What Historical Digital Literacy Looks Like

The digital realm opens up new possibilities for students to use and produce history with twenty-first century sources, tools, and platforms. It expands the educational repertoire for authentic student assessments far beyond the exam and the term paper. However, instructors across the educational spectrum, from secondary and graduate study to K–12 education, may be expected to “use technology” without always being told why or without being given the parallel power to define which technologies make sense for their own educational goals. That is not my intention here. Rather, I am advocating deliberate and timely adoption of digital resources that help historians accomplish meaningful disciplinary goals. I believe that history educators should embrace digital tools and resources more widely than they currently do, both because our teaching should reflect the changing nature of the field and because such an acceptance has positive implications for student engagement and learning. Building historical digital literacy with our students helps us teach our craft authentically to our own time by drawing on the resources available. It requires an individual and collective commitment to discovering and using new tools, a pedagogy of experimentation, and a willingness to take risks. It means maintaining an open stance to “the new and shiny” as it comes whizzing along, with an eye to how

¹⁴ Tona Hangen, Senior Research Seminar: Writing Recent History, Fall 2014, syllabus, <http://wsu.tonahangen.com/hi460/wp-content/uploads/2014/08/460.Fa14.pdf>.

it might be thoughtfully incorporated into history learning. Of course, historical digital literacy cannot be achieved by adopting technology for its own sake but only in the service of the larger goal of helping students think historically in rapidly changing times.

Admittedly, the examples I have discussed here are quite basic. I have profiled simple ways to help students use digital tools and methods to build the skills we want them to master: locating and analyzing sources critically, constructing historical interpretations through debate and scholarly argument, and communicating their ideas effectively in today's media environment. There is much more to do beyond these basics, and some in our field are already far ahead in involving history students in coding, developing applications, and in using three-dimensional printing and other cutting-edge digital initiatives.¹⁵ Digital technology is undeniably transforming education, and as historians we need to be actively working with it to participate in the conversation shaping that future. Even taking small steps, one classroom at a time, raises our (and our students') sense of historical digital literacy and helps secure the future of studying the past.

¹⁵ For a sense of some digital initiatives, visit the sites of the many digital humanities centers aggregated at *centerNET*, <http://digitalhumanities.org/centernet/>.