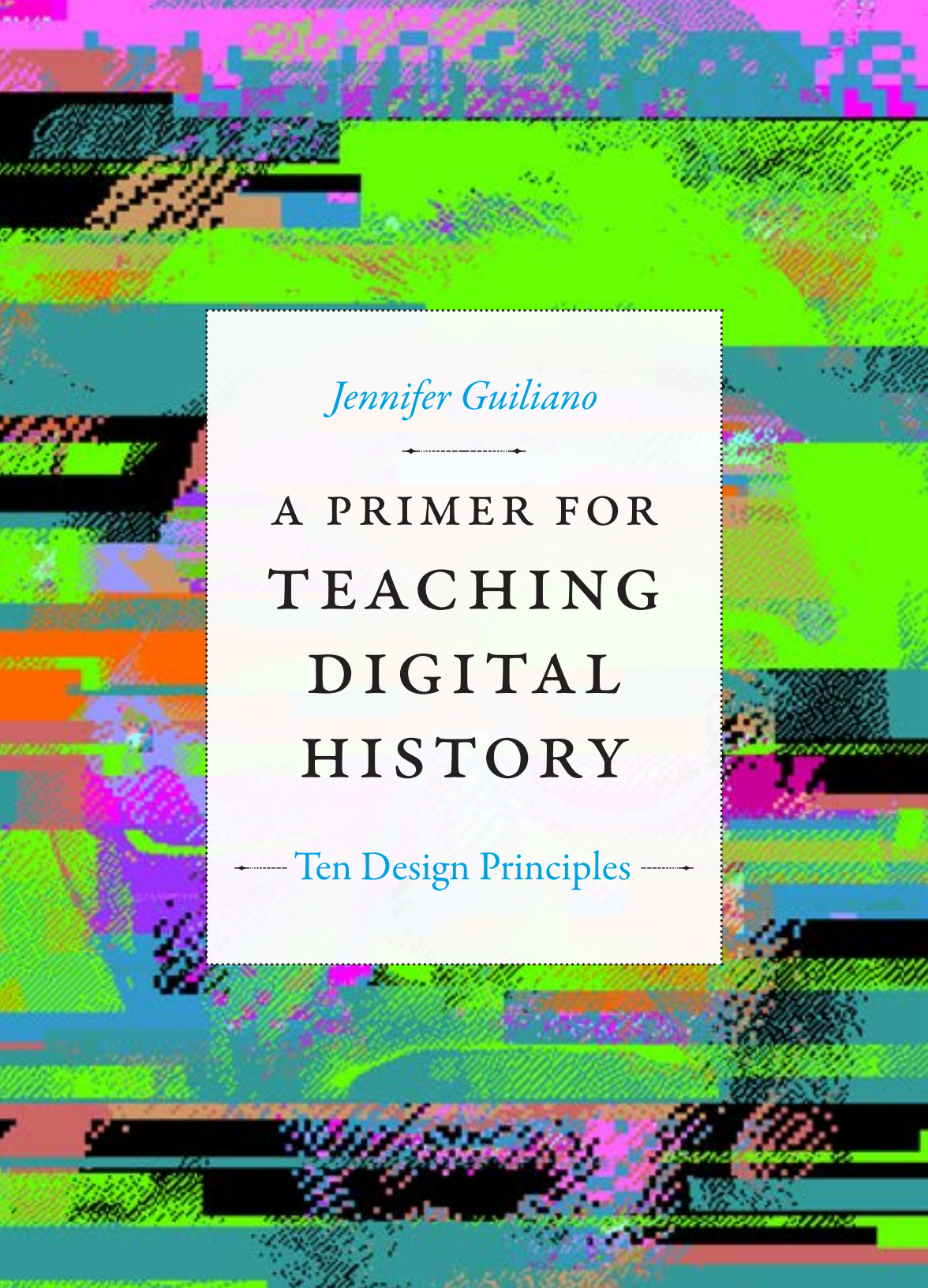
Jennifer Guiliano
A PRIMER FOR
TEACHING
DIGITAL
HISTORY
Ten Design Principles

A Primer for Teaching Digital History

DESIGN PRINCIPLES
FOR TEACHING HISTORY
A series edited by Antoinette Burton

A PRIMER FOR TEACHING DIGITAL HISTORY

Ten Design Principles

Jennifer Guiliano

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For the teachers, including my sister Theresa Downing, who spend their lives educating those around them. This book is in recognition of all the hours you spend, the lives you change, and the future you shape. This book is also dedicated to every historian who wants to learn something new. You are amazing for trying, no matter whether or not you succeed. And to Brett, because he wanted a book dedication of his own.

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Acknowledgments

TEACHING IS HARD. It takes patience, kindness, and a strength of will that requires you to not only master the content but also understand the nuances of how students learn. And it takes someone that understands that teaching and learning is an innately collaborative process. In the classroom, teachers work with the students and their colleagues as much as they check off that they've done what the course requires. When I first began teaching as a twenty-year-old master's degree student in history at Miami University of Ohio, I thought teaching was about students learning all the things. I agonized over how much or how little material to include. I fretted over classroom discussions where we never got to that last thing on my list of things to cover. I thought my success as a teacher was reflected by whether students had earned A's. Now, two decades on, that anxiety has lessened because I'm seeing how the things my students learn are transforming their lives. I'm most proud not of my students who earn A's consistently but of the students who grind day in and day out to move the needle from the C+ to the B, from the D to the C+. I'm gratified by my first-year, first-generation students who work diligently to learn the academic bureaucracy. I'm awed by my returning students who are often balancing full-time course loads with full-time jobs and families. I'm staggered by the vulnerability of my veteran students who don't shy away from talking in

the classroom about their wartime experiences. And I am fulfilled as a teacher by watching my students speak up about their experiences with the historical forces of racism, sexism, poverty, and power that shape their lives. Their bravery makes it easier as a teacher to help others understand the significances and consequences of history. This book would not be possible without these students who illustrate the utility of history and its importance in today's global world.

For the last six years, along with my colleague Trevor Muñoz, I have been privileged to codirect the Humanities Intensive Learning and Teaching Institute (HILT). Annually, it brings together over a hundred undergraduate and graduate students, postdoctoral fellows, librarians, faculty, academic staff, and cultural heritage professionals to learn from the best instructors in their respective fields. In the ways that I have learned specific technologies, explored theoretical principles, and built entire research agendas, HILT has been transformative for me as a teacher. Not only are its instructors stellar in their own right as researchers, but they are committed to developing sound, effective pedagogy that is ethical and effective. The conversations I've had with them, the approaches they have taken, and the ways they have crafted their courses are reflected here. I wish to thank Amanda Licastro, Anastasia Salter, Ben Brumfield, Bridget Whearty, Caitlin Pollock, Carolina Villaroel, Catherine DeRose, Catherine Knight Steele, Cheryl Ball, Curtis Fletcher, David McClure, Dean Irvine, Dean Rehberger, Dorothea Salo, Dot Porter, Elijah Meeks, Elli Mylonas, Gabriela Baeza Ventura, Jarah Moesch, Jarom McDonald, Jeremy Boggs, Jeri Wieringa, Jesse Stommel, Jessica Lu, Jim Casey, Julia Flanders, Kam Woods, Katie Rawson, Lee Skallerup-Bessette, Mark Algee-Hewitt, Matt Jockers, Meghan Ferriter, Mia Ridge, micha cárdenas, Michael Meredith, Nicole Coleman, Porter Olsen, Purdom Lindblad, Richard Urban, Sarah Patterson, Scott Enderle, Simon Appleford, Stephen McLaughlin, Tanya Clement, Taylor Arnold, Trevor Muñoz, Virginia Kuhn, and Wayne Graham. Special recognition goes to Brandon Locke, Brandon Walsh, Ethan Reed, and Thomas Padilla, who have modeled year after year how to interweave teaching technology platforms with the ethical and theoretical concerns of content. I extend my deep appreciation for

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This book has also benefited from the expertise of a number of historians via our discussions about the field of digital history and the practice of teaching. I would like to extend my gratitude to the digital historians who attend the conferences for the Organization for American Historians; the American Historical Association; the American Studies Association; and the Alliance for Digital Humanities Annual Digital Humanities conference. While the contributions are too numerous to itemize, please know that your work at the intersections of technology and history continues to influence my thinking about the classroom. I also want to thank the participants in the "Arguing with Digital History" workshop hosted by the Roy Rosenzweig Center for History and New Media and the "Doing Sport History in the Digital Present" workshop hosted by the North American Society for Sport History. Of particular note are Kalani Craig, Jo Guldi, Micki Kaufman, Sharon Leon, Michelle Moravec, Miriam Posner, Lauren Tilton, William Thomas III, Amanda Regan,

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Series editor Antoinette Burton's invitation to write this book serves as a highlight of my career thus far. She has been a role model for me throughout the last ten years not just because she served as a fantastic advisor to one of my closest friends in graduate school; Antoinette has been a prolific author and voice for the place of women in history and in the historical profession. She's built a career being the type of historian and leader I've always hoped to be: kind, direct, and innovative. When she wrote to me to extend the invitation to join this series, I called my friend and told her that I'd done something right in my career if AB trusted me with a book in her series. Antoinette, thank you for patience as I wrote this book and for your trust. Similarly, I'd like to thank those who attended the manuscript workshop at the University of Illinois. Their feedback, along with the feedback from the anonymous reviewers, shaped this book tremendously. All remaining errors or problems are mine.

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as a colleague. Simon Appleford deserves applause for being a great collaborator and coauthor. A tremendous digital historian in his own right, he willingly let me delay finishing our coauthored textbook to focus on this effort. He also served as a second set of discerning eyes from the proposal through to the final publication-ready manuscript. Many of the exercises spoken of in this text have their root in conversations with him about how best to teach a particular concept. He also answered every late-night text message in which I asked to pick his brain about best practices in digital history teaching. The material on visualization as it relates to space, place, and movement owes its origin to Karen Rodriguez'G, director of undergraduate research at the University of Illinois and a historian of space and identity within the imperial British empire. Karen and I have had too many discussions to count about diaspora, movement, space, identity, and how to represent that information. We've also agonized together over our successes and failures as teachers. It is my hope that the chapter included represents the best of those conversations and successes.

I would be remiss to not thank my family, who I am sure will not read this book. They didn't read my first. I doubt they'll read anything I write, ever. Just to test them, I'll give any one of them who can summarize what it says beyond what is on the book jacket or in a book review a free meal at a local restaurant of their choice once we've ended COVID-19 closures and it is safe to eat out again. Thank you for being there day in and day out no matter what. Thanks for letting me be me.

Introduction

EACH DAY, 2.5 quintillion bytes of data are created. More than 3.7 billion people surf the internet. Sixteen million text messages are sent per minute. Each day, 4.7 trillion photos are stored in the cloud.[1] The deluge of both digitized and born-digital materials is simply unceasing.[2] Full-scale digital repositories allow you to not only access documents on demand but also annotate, analyze, combine, and remix them into new forms of scholarship. Catalogs and search engines assist in uncovering resources. The computer and its associated software can make organizing and producing research more efficient than was previously possible. In parallel, major archives, libraries, and governments have conducted sweeping digitization programs to provide access to their archives, holdings, and analog records.[3] As a result, the opportunities to develop digital history research agendas and teaching pedagogies are flourishing. That flourishing can feel like an overwhelming tide as digital technologies encompass and expand the cultural record. From the digitization of analog physical materials, to the recovery of materials stored on early media formats like floppy disks, to the harvesting of web and social media platforms, historians of the future will certainly have to confront digital sources and the internet when they analyze the past. Professional historians are not alone in engaging with digital technologies and tools. Digital history can put

the tools of knowledge creation in the hands of communities so that they can articulate and explore their own histories. One of those communities is our students who are eager to embrace the possibilities of their own history in digital forms. This book serves to assist you in thinking through how the history classroom can serve as a site of knowledge production with and about digital technologies, tools, and approaches.

Depending on which methods and historiographies one elects to draw on, what is digital history and what is possible with digital history methods can vary.[4] Some scholars are attracted to new forms of scholarly publishing, such as websites, podcasts, and multimodal storytelling, and might tie their digital history definition to methods from journalism, new media, and communications. Others are intrigued by the possibilities available through massive digital archives, exhibits, and collections and might define digital history through the lens of digital libraries, archives, and information science. Still more options include statistical models and high-performance computing, which provide a pathway to crunch massive datasets in order to explore humans and their experiences at ever greater scales. These historians may define digital history as intricately tied to computer science, statistics, and mathematics. There are even historians who have embraced digital history to build elaborate video games and digital reproductions that allow us to "play the past."[5] They might define digital history through new media, art, and modeling. Cultural historians Petri Paju, Mila Oiva, and Mats Fridlund define digital history as encompassing "diverse historical practices, such as digitization efforts at archives, libraries and museums, computer-assisted research, web-based teaching and professional and public dissemination of historical knowledge, as well as research on the history of 'the digital,' computers and digital technologies."[6] Hannu Salmi offers a definition of digital history as "an approach to examining and representing the past; it uses new communication technologies and media applications and experiments with computational methods for the analysis, production, and dissemination of historical scholarship."[7] As digital historian Jo Guldi reminds us, "digital history is not so much a field or sub-field . . . as a universal approach to history."[8] For Guldi, digital history is not singular so much as digital histories that

are "informed by exchanges, building on works already in progress across the land."[9] This is why most digital history also engages with fields outside history and with the digital humanities generally.

What digital history is and how it is practiced is defined by your historical interests, the audiences you seek to reach, and how you wish to communicate with those audiences. For this reason, digital history definitions are multipart and often demarcate the "how" and "for whom" as much as what digital history is. Digital public historian Sheila Brennan, for example, defines digital history as

> an approach to researching and interpreting the past that relies on computer and communication technologies to help gather, quantify, interpret, and share historical materials and narratives. It empowers individuals and organizations to be active participants in preserving and telling stories from the past, and it unlocks patterns embedded across diverse bodies of sources. Making technology an integral component of the historian's craft opens new ways of analyzing patterns in data and offers means to visualize those patterns, thereby enriching historical research. Moreover, digital history offers multiple pathways for historians to collaborate, publish, and share their work with a wide variety of audiences. Perhaps most important, digital methods help us to access and share marginalized or silenced voices and to incorporate them into our work in ways not possible in print or the space of an exhibition gallery.[10]

How you define digital history is directly impacted by the historical questions and contexts you seek to understand and the audiences you hope to reach. This book will provide overviews of how differing historians articulate and enact their own digital history definitions through classroom pedagogy. Digital history remains tied to the fundamentals of historical scholarship, evidence, and argument, and the historians and projects selected for inclusion in this book represent the variety of approaches to teaching and engaging with digital history. They ask similar questions in the digital space that we do in the analog, but they also represent the questions about access, audience, output, and privacy that you must grapple

with as you work with digital technologies and their capabilities. These questions often highlight digital technologies' problematic roots, whether by interrogating power and audience, the ways in which digital technologies enable certain types of historical thinking, or their ties to issues of privacy, data, and security.

Digital history has a long trajectory within the historical discipline. Quantitative history has long leveraged statistical analysis and modeling to allow social and economic historians to create massive databases of historical records.[11] Harriet and Frank Owsley, Merle Curti, William O. Aydelotte, and others in the 1940s and 1950s transformed manuscript records into quantitative data that could be tabulated and sorted via IBM-owned Hollerith machines. This enabled them to provide sophisticated analyses of employment and immigration patterns and of other aggregated trends over time. Economic historians and historians of American slavery spent years enmeshed in a debate over the validity of computational methods for historical scholarship after the publication of the 1974 work *Time on the Cross: The Economics of American Negro Slavery* by Robert Fogel and Stanley Engerman.[12] Digital public history is now almost three decades old. Edward Ayers's award-winning website The Valley of the Shadow, published in 1993, introduced audiences to a digital archive of primary sources drawn from Augusta County, Virginia, and Franklin County, Pennsylvania, during the American Civil War (1861–65). The work of Ayers, William G. Thomas III, Anne Sarah Rubin, Andrew Torget, and others working on the Valley project encouraged generations of historians to consider digitization and hypertext, which allows you to link documents to one another, as an opportunity to reach new audiences.[13] So too did the digital history work facilitated by the American Social History Project, which produced scores of digitized, annotated, and analyzed primary and secondary sources as part of its work in the 1990s on the website History Matters: The U.S. Survey Course on the Web.[14] It hasn't just been scholars employed as full-time historians that have grounded digital history in research and teaching. Much of digital history was created, and continues to be authored by, the archivists, librarians, museum educators, and other cultural heritage professionals who embraced the possibil-

ities of technology for telling stories of the past. Historians rely on their expertise and join them in crafting narratives for specialists and the public alike that highlight the wide variety of possibilities enabled by computers, tablets, smartphones, programming languages, and digital software. They have also been joined by computer programmers, user experience designers, informaticists, and even engineers who contribute to building technologies, providing methods, and challenging how historians conceptualize history and its many varied types of evidence and argument.

The primary connection between analog and digital that grounds this book is the belief that what makes it into our histories is a statement of our values and positions as individuals and as historians. For me, this is an antiracist, feminist, decolonial practice that implements practices from social justice and disability justice, which recognize that selection, bias, issues of institutional support, access to resources and materials, problems of racial hierarchies, the embrace of capitalism, and the consequences of colonialism have long affected and been central in the discipline of history. Digital technologies amplify these concerns. Choosing to use tools like the global positioning system (GPS) ties users to their roots: such devices, created by the military, furthered nation-building in the 1950s. From their inception in the early 2000s, social media tools like Facebook and Twitter have also been tied to surveillance and implicated in violence against colonized peoples. Decisions to create digital archival collections in the midst of the most recent round of anti-Black violence around the globe intersect with concerns about privacy, law, and oppression that analog historians face when they encounter documents of trauma and violence in the physical archive. Choices about appearance and clothing in digital historical re-creations intersect with questions of accuracy and appropriation. The systems of oppression and trauma that dominate the analog world have been amplified in the digital sphere, even as many pretend it is exceptional because anyone can use and post to the internet. These issues are of particular concern for underrepresented and marginalized communities who encounter systemic and highly personalized encounters with digital tools and technologies.[15] These are not US-centric or Europe-centric concerns, as the technologies that are

developed in the United States and Europe are often imported to other countries, particularly the global South.[16]

Beginning by highlighting the importance of the creation and analysis of digital archives about the transatlantic slave trade, historian Jennifer Hart argues that African countries and those who study African history face "persistent challenges to processing and preserving archival materials on the continent."[17] Celebrating the ability of digital technologies to bring "new voices and perspectives into the popular and scholarly conversations about the African past," Hart argues that digital history is yet another methodological practice embraced by Africanist scholars who seek to rethink historical practice. She writes, "By engaging in public scholarship, these digital history projects help re-think long-standing concerns among Africanist scholars about the politics of knowledge production and the repatriation of scholarly materials."[18] Elaborating on the links between collaborative projects that are often funded outside the African continent and the lack of resource investment in African countries, Hart cautions that digital history can replicate the extractive processes, biases of funding, and limitations of institution building where centers, institutes, and programs overwhelm concerns of representation, inclusion, and access. Digital history that operates outside of academic contexts is, according to Hart, a vibrant space that problematizes both how the field defines itself and how it is defined by others.

Digital history encourages treating software, platforms, and algorithms as sites of analysis themselves, to challenge these amplified threads. Whether you are encouraging students to explore the logic underlying a freely available tool or asking them to build a digital project from scratch, the thread running through all digital history is a wary eye on the word "digital" and its relationship to historical thinking. This is a necessity because digital history relies on parameters and objects established by nonhistorians. Racism, sexism, and corporate interests are embedded within internet search engines and their functionality just as they are encapsulated in analog archives.[19] Historical misinformation and shoddy citational practices proliferated before the advent of the internet, but the internet enables them to spread at a much more rapid rate and with

greater influence, as anyone can retweet, share, or republish. Anyone can say whatever they'd like, however they'd like, on the internet. With the mass digitization of cultural records, materials shared from underrepresented communities and the global South have been made more readily available to academics and their students. Sources divorced from the contexts of their production and the communities they represent are one of the most slippery slopes of digital history research. Students can easily find materials but often are ill-equipped to consider the ethics of their use. This is particularly keen for scholars and students situated in the global North who are disconnected from the scholars, communities, and cultural heritage institutions of the global South.[20] With collaborative digital technologies and partnerships, we can bridge that distance, but as teachers we must do so in a way that is honest to the needs of the communities we wish to engage with. As Indigenous scholar Linda Tuhiwai Smith reminds us, the needs of researchers do not necessarily align to the interests or needs of communities.[21] Digital technologies enable us to have virtual meetings, shared workspaces, and shared projects. One way of ameliorating the disconnect between the source base you hope to use and the community it originates from is through collaborative projects. Partnering with scholars, individual students, classes, and cultural heritage institutions is one way to bridge the disconnect between the positions of privilege many of us occupy and the communities we seek to understand.

It is important to consider as well the "digital divide," which is a blanket term used to refer to the uneven and unequal access to, or use of, digital technologies based on social, economic, geographical, geopolitical, or even cultural criteria. As this text is being written, the global coronavirus pandemic is actively reshaping teachers' sense of those extremes. When I talk with my colleagues about our students, it becomes clear that the problem isn't that students might not have computers or internet access. Instead, it is that their computers are too old, the software too slow, or the connection too poor to give them a consistent, high-quality engagement with virtual learning environments. One student, for example, shared with me that, as the oldest sibling in her family, she had to wait until her three siblings as well as her parents used the family's computer for school and

work before she could sign in to our class. The reality for many of our students is that their digital insecurity challenges their ability to contribute to our classes. It is our obligation as educators to recognize that instability and, wherever possible, accommodate students' needs. This may involve setting up loan programs for devices, creating low-bandwidth versions of course content, and providing alternative assignments that scale to the resources available to your students. If you are working within the contexts of communities in the global South, that could also mean recalibrating your projects to be developed on and work with low-bandwidth internet connections and cellphone screens.

Because much of the public gets its historical knowledge from the internet, there is a pressing need to understand how and where digital technologies and historical thinking meet. This book identifies that meeting ground by illustrating how digital history research can be both included in, and at the center of, our teaching practices. Digital history gives historians opportunities to engage in a timely manner. And, as importantly, it provides avenues and opportunities for individuals and communities to tell their own stories, with their own values, and for their own purposes. Audience then is a prime concern of digital history. In this book, the question of audience is woven throughout, including whom history is for, how we write for different audiences, and what obligations we, as historians, have to our audiences. Audience, you'll learn, requires attention not just to what we need as teachers and scholars but also to what our students and digital project users might need as well.

Regardless of how stellar they are or how much they struggle in our classes, students want to hear the histories of their communities. They want to know about their ancestors and how decisions by individuals, communities, and governments in the past shaped their present. While they might seek simple answers on tests, they are most intrigued by history's nuance and complexity. They like the challenge history offers. What decisions might they have made? How might their histories be added to the stories already being told? How might they challenge everything we know about a particular event, period, or interpretation? It is our privilege as teachers to help them seek out those narratives in all their complexities.

This book suggests that in a digital history classroom, the stories we want to tell can fundamentally interrogate not just what histories are told but also how we tell them and who has access to them. Student historians can narrate their own stories and also make them easily available to broader audiences through digital avenues.

At this point, you may be asking yourself whether I am going to prescribe how much of your class should be devoted to developing historical context for the students and how much should be driven by technologies. This book is not a prescriptive textbook that walks you step by step through teaching a digital history course. It does not provide hard and fast rules for the classroom. Instead, this book represents the possibilities enabled by using digital methods and forms of scholarship as they exist in history classrooms today. It highlights for you the variety of strategies and approaches that can lead to digital history outcomes. It shows small slices of digital history scholarship in any given chapter. This means there are ample opportunities for you to look at additional pedagogical examples. To enable this, I've incorporated citations and hyperlinks to digital methods, projects, and portfolios so that you can explore further on your own. I've also included a brief glossary of terms and digital projects at the end of the book to help you as you navigate each chapter.

As we move through the book, you'll be encouraged to make decisions for your course based on your own values, abilities, and course intent. Those decisions will also be shaped by the resources available to you. For that reason, in the glossary, I've indicated which software and tools are free so that it's clear which can be implemented without institutional support. I've also written each chapter to provide varying levels of technical expertise to your approaches for digital history methods and tools. The lines between an example from a collegiate classroom and a high school, or even middle school, classroom are much fuzzier than one might expect. Frequently, the technical capabilities of high school (and even middle school) students are not much less than that of college freshmen. I've seen middle school students building apps while my college students struggle with developing a multimedia-driven website and vice versa. Age has little to do with a student's technical abilities. In fact, one of the most pernicious

ideas is that those who are chronologically younger are somehow more technologically fluent than those who are older. You'll notice that, throughout the book, I identify what level a course operates at—middle and high school, college, and so on—along with descriptions of the digital history activities. But I also note how you might scale up or down the historical and technological complexity based on your students' abilities. Don't be afraid to try out any example in a class, regardless of a student's educational level; you'll often be able to nudge it toward a more or less complicated direction based on students' abilities. For that reason, I like to gauge where my students are at through a pre-class survey that asks them what they know how to use versus what they know how to build. I often repeat that survey at the close of class to measure their growth. This allows for customization of the course, so I meet students where they are at and then challenge them, rather than teaching toward either the most or least technologically able.

In large part, digital history is a set of opportunities granted through technical fluency where you'll be continually improving your abilities both as a teacher and as a learner. I like to explain to colleagues the fluency principle as follows: if you are a French historian, you can write histories of France and French-speaking peoples by using documents translated by others. It enables you to work with the sources and offer analyses, but you are limited by your lack of linguistic ability and by what documents others have selected to translate. But, if you are fluent in French, you suddenly have not only more opportunities to identify documents and analyze them yourself, but you can participate more fully in the scholarly community of Francophone studies than you could if you had to rely on translations only. Students and teachers in the digital history classroom are similar. The first time teaching a course, we are often nervous and frequently end up experimenting with different assignments, materials, and outcomes. Over time, as we teach the same subjects for years and mature as teachers, we become more comfortable and dig a little deeper into pedagogy. And, as more historians embrace digital history teaching, we'll see more opportunities to discuss, debate, and revise our teaching. This book recognizes that potentially long arc of digital history adoption and is built

to respond to a delayed trajectory. After all, it's rare that we as teachers have time to make rapid changes to our pedagogy. It can take weeks, months, and even years to fully revise assignments and syllabi. Similarly, in a digital history course, you may begin by experimenting with a given method using a readily available tool that doesn't require much underlying knowledge of its functions or customization. But as you master that method, it's likely that you'll desire more control and agency. This book recognizes that wish by providing at least one tool that can be used for any given method without having any additional expertise in programming, mathematics or statistical knowledge, or technical infrastructure. In addition, each chapter provides at least one example of using complicated digital history processes in the classroom that might require you to challenge yourself and your students. As historians, many of us are never truly satisfied with our courses, so revising them to move toward more control in the digital history classroom will feel familiar.

To help demonstrate the varieties of digital history pedagogy available to you, the book is organized in three parts. In part I, we focus exclusively on digital history fundamentals and their relationship to analog historical practice in the classroom. Chapter 1 explores the role of data and the ways in which historical sources can be conceptualized as forms of information that help historians to ask a variety of types of questions. You learn basic terms and processes for identifying data, how to incorporate historical data literacy into your classroom, and how to scaffold data aggregation to align to methodological processes. Chapter 2 explores learning outcomes and a formula that I utilize to develop learning outcomes in the digital history classroom: history, methods, technology. It will help you think about how to balance historical thinking and its fluency with the selection of appropriate methods and tools. The chapter also encourages you to think about how explicit learning outcomes can help your students and colleagues understand how digital history operates similarly or differently from its analog counterparts. Chapter 3 provides a brief overview of three different types of assignment interventions that are possible in the digital history classroom once you have gathered your dataset and determined what learning outcomes you wish to incorporate. The unessay,

micro-projects, and comprehensive digital projects are the core assignments that you'll learn about as complementary to, or replacements for, existing analog assignments. In chapter 4, you'll learn a bit about methods and how methods are tied to decisions about your data and your assignments. It primes you to consider how questions of digital methods are extensions of many analog methods that historians have already been using. But it also provides examples of how digital methods that are tied to mathematics, statistics, and computation can introduce new pathways for analysis of historical questions. By the end of part I, then, you'll have a set of tasks for your first syllabus: select your data, identify your learning outcomes, evaluate and incorporate your methods, and determine which tools you wish students to use in the class.

In part II, you'll be provided with a sequence of chapters about digital history methods. Chapter 5 introduces you to digital source criticism and explains the ways in which moving from analog document criticism to digital source criticism can create opportunities for students to understand how digital technologies transform our thinking about sources and their utility. Once students understand how to consider and critique an individual source, be it textual, visual, aural, or some combination of all three, the next step is to consider how that set of materials can be analyzed as an aggregate. In chapter 6, we'll explore text analysis methods that let students explore textual datasets. Ranging from frequency analysis that tells us about individual words, to topic modeling, which suggests themes in document collections, and network analysis methods that help students understand relationships between documents and their contents, chapter 6 suggests that part of what underlies textual analysis is a marriage of math and statistics with historical thinking. Chapter 7 provides an overview of visualization, which is a method for communicating information through visual means. By considering simple charts and graphs, networks and relationship mapping, and cartographic and conceptual mapping, chapter 7 helps you think about how students might leverage datasets to understand space, place, and movement. It will introduce you to common types of visualizations, including graphs, cartographic maps, and historical reproductions (also known as video games and three-dimensional

re-creations). The chapter also asks you to consider how gaps in historical information are represented, the ways in which the "visual" component of visualization privileges able-bodied users, and how the design of the visualization must meet your historical question. By the close of part II, you'll be versed in three major methodological processes: digital source criticism, textual analysis, and visualization. You'll have an overview of common methods and examples of robust methodological approaches to your syllabus.

Part III brings us to the question of new forms of historical scholarship in the digital history classroom. In chapter 8, we'll discuss the similarities and differences between digital archives, digital exhibits, and digital collections. You'll be asked to consider how the digital aspect of the historical record aligns to analog archival research practices. The chapter also documents the variety of types of archives and exhibits that might be appropriate for your classroom. Woven throughout are questions about partnerships, student participation, and how to build feedback into your course process. The chapter ends by asking you to think about harm both in the classroom and as part of archival research. Chapter 9 draws your attention to the dominant form of historical communication: the historical narrative. Organized around the concept of storytelling, the chapter explores how to use audiovisual and mixed methods in your classroom. You'll learn about ways to integrate short documentaries, podcasts, and multimodal storytelling into your teaching. The chapter also explores how the desire to tell a story can sidetrack students when they become enamored with digital storytelling tools. The final chapter considers participatory history in the classroom through crowdsourcing. How can students contribute to ongoing digital history projects? What types of crowd-based digital projects might you build your class around? And, as importantly, we'll discuss the ethics of students working publicly. What types of plans do you need in place to address concerns about student contributions to public projects? How might your own wishes for a student's work run contrary to what they wish to do? By the close of part III, you'll be ready to consider what form your students' work will take.

For those who seek guidance on organizing multiple courses, chapter 10 provides that direction. It suggests that your peers should consider

choosing the digital methods that most pertain to their own areas of research and that might ignite their interest in building a full digital history curriculum. This will lessen anxiety about the unfamiliarity of digital methods for your colleagues who may be skeptical of digital technologies and approaches. The chapter encourages you to scaffold the curriculum according to methodological complexity and technical expertise. This leads to considerations of independent study as well as ad hoc training as opportunities for yourself, your colleagues, and your students. And, ultimately, the chapter reminds you that the scholarship of teaching and learning offers tremendous opportunities for you to discuss and publish the pedagogy you develop for your digital history classroom and curricula.

For those who are entirely new to digital history, you'll find that reading sequentially through the chapters is likely the most productive use of your time. Concepts introduced in the fundamentals chapters in part I will reappear in parts II and III. By reading in order, you'll be poised to move from developing individual components of sources and assignments to the deployment of a full course. For those with some experience in digital history who feel like they can comfortably define digital history and its concerns, you'll likely find that part II is the best starting point for your reading. Part II offers deep explorations of digital source criticism, textual analysis, and visualization. These chapters can be read individually, with each potentially comprising either a limited module or, if you choose to engage with all of the examples offered, a full multiweek course for your students. Scholars interested in scholarly production and digital public history will find they might wish to concentrate on part III, which explores common digital history outputs: digital archives, digital exhibits, and digital collections; documentaries, podcasts, and multimodal storytelling; and crowdsourcing. These chapters encourage you to think about whom your classroom serves, how students might develop and reach potential audiences, and how their own historical outputs might join ongoing conversations.

As you read, remember that the endnotes and glossary are valuable resources to enrich your reading. I encourage you to follow links to view

the digital projects, methods, syllabi, and other materials. That will help you to experience exactly what students would in the digital history classroom if you elected to use the sequence or item under discussion. It's also a way to acknowledge the tremendous wealth of material that underlies our classrooms. Digital historians love to make materials available on the internet, and you should take advantage of that by borrowing, citing, and revising according to your own needs. We ought to recognize that work and actively build on it.

Notes

Introduction

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