Digital Research in the Arts and Humanities

DIGITAL HUMANITIES WORKSHOPS

LESSONS LEARNED

Edited by
Laura Estill and Jennifer Guiliano

ROUTLEDGE

Digital Humanities Workshops

Digital Humanities Workshops: Lessons Learned is the first volume to focus explicitly on the most common and accessible kind of training in digital humanities (DH): workshops.

Drawing together the experiences and expertise of dozens of scholars and practitioners from a variety of disciplines and geographical contexts, the chapters in this collection examine the development, deployment, and assessment of a workshop or workshop series. In the first section, "Where?", the authors seek to situate digital humanities workshops within local, regional, and national contexts. The second section, "Who?", guides readers through questions of audience in relation to digital humanities workshops. In the third and final section, "How?", authors explore the mechanics of such workshops. Taken together, the chapters in this volume answer the important question: why are digital humanities workshops so important and what is their present and future role?

Digital Humanities Workshops: Lessons Learned examines a range of digital humanities workshops and highlights audiences, resources, and impact. This volume will appeal to academics, researchers, and postgraduate students, as well as professionals working in the DH field.

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Introduction

Jennifer Guiliano and Laura Estill

While current students have opportunities for formal digital training, most digital humanists working today point to workshops as one of their primary means for training in the field. In part, this is a result of the paucity of digital humanities programs in the 1990s and 2000s, but it is also a result of how resources have been allocated and deployed by the various sites of digital humanities work: departments, libraries, digital scholarship centers, and digital humanities research centers. Digital humanities (DH) workshops provided a way for the discipline to anchor itself and welcome newcomers without formal curricula. This volume represents the expansive definition of digital humanities that we encounter in our research and teaching, that is, a constellation of practices that engage with and interrogate the role of computing in understanding, analyzing, and representing human experience. As such, it incorporates many terms that you may be familiar with: digital scholarship, digital heritage, digital practice, and digital research. We do not firmly demarcate the boundaries, for example, between digital humanities and digital scholarship in this volume as the methods, tools, and practices often overlap. Nor, for example, do we limit ourselves by excluding work taking place in digital heritage contexts. Whether termed digital humanities, digital scholarship, or digital heritage, workshops often deploy similar pedagogical and methodological approaches and outcomes. They appeal to the same audiences and thus overlap in their goals and strategies for audience and community. Thus, this volume represents the ecosystem that digital humanities workshops exist within. Sometimes they take place in digital humanities or digital scholarship centers; other times in libraries and museums; some are recurring, and others, ad hoc. The chapters in this volume are written to appeal to the same broad audiences as the workshops themselves: to students, teachers, administrators, novices, and experts alike.

Despite the growing number of formal digital humanities degrees (Sula, Hackney, and Cunningham 2017; Walsh et al. 2021), the vast majority of digital humanities training has long occurred outside traditional curricula as complementary initiatives. This is oftentimes a function of the variety of digital humanities training an individual might need and the relative paucity of local training opportunities due to limitations in faculty, staff, and institutional resources. But it is also a result of the interdisciplinary nature of the field where contributions to training might be made by technologists, librarians, cultural heritage professionals, and others

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beyond faculty or digital humanities staff. The field of digital humanities pedagogy is constantly growing and currently garnering new and renewed scholarly interest. Ongoing and recent contributions to this field such as Hirsch 2012; Frost Davis et al. 2020; Croxall and Jakacki forthcoming, have encouraged the growth of pedagogical inventiveness. Digital humanities workshops regularly take place around the globe (see, for instance, the DH Training Network, https://dhsi.org/dh-training-network/; the Europe-based Digital Humanities Course Registry, which includes curricular and non-curricular offerings, https://dhcr.clarin-dariah.eu; and Digital Research Skills Australasia, https://dresa.org.au; all of which only capture a fraction of existing workshops). This is the first volume to focus explicitly on the most common and foundational kind of digital humanities training: the digital humanities workshop.

In spite of the proliferation of digital humanities workshops, there is little consideration of workshops as a genre of pedagogical development and scholarly production. We can sometimes fruitfully turn to scholarship about workshops in other fields, such as the important work from library studies (see, for instance, Pagowsky 2022 on the "one-shot"). Because of the variety of workshop types and those involved in developing and deploying them, there is little coherence within digital humanities around who, where, and how workshops are held. This incoherence means that it is difficult for new instructors to know precisely what practices exist for workshops. Furthermore, as a result of the global pandemic, opportunities to learn about workshop practices as pedagogy have been curtailed. Coupled with the reduction of many institutions' travel budgets, local and online workshops as discussed in this book are even more of a priority for readers to learn about.

So, what exactly is a digital humanities workshop? We do not seek to offer a hard-and-fast definition, but rather, to explore the variety of workshop definitions that are being utilized currently in the field. Workshops exist on a variety of continua, such as modality (from asynchronous online to hybrid to in-person), format (from primarily lectures to hands-on content), and length (from an hour-long session to weeks-long sessions). Of course, the content of these workshops varies widely too and can, as these chapters explore, focus on tools, analysis, or both. Existing digital humanities workshops, as this volume explores, vary widely in location, intention, audience, and outcomes: they happen at DH centers, in libraries, in departments, in continuing education at projects; they can be time-limited, multi-day, or over the course of many months; synchronous or asynchronous; they may be topical, thematic, or tool focused; they may engage with a particular audience or general public, including students, faculty, staff, and non-university communities. No matter the content focus, successful workshops require an understanding of audience and potential outcomes.

One of the challenges and opportunities of digital humanities training is that it is not designed only for those people who consider themselves digital humanists: rather, it is often humanists who are interested in learning how they can apply digital tools to answer the questions raised by their humanities research. We envision the audience for this volume not only as those who consider themselves digital humanities teachers, organizers, and learners but also those who may need

to consider how workshops can be situated within formal and informal academic training. Workshops are often conceptualized as temporary interventions, yet as this volume shows, digital humanities workshops are valuable ways that an institution, department, program, or project can enrich its efforts. Digital humanities workshops offer a moment of engagement for audiences that might not otherwise exist. They can familiarize potential users with tools, approaches, and methods. But, most importantly, they do so within the context of humanities-driven content. This domain expertise drawn from the constituent humanities disciplines encourages humanities habits of the mind (e.g. critical thinking and argumentation) while using the tools. They also create a sense of community that can exponentially improve local digital humanities efforts by creating a network of trusted individuals invested in the questions of the humanities and in the impact of humanities knowledge on stakeholders. From grant evaluators to tenure and promotion committees to accreditors, digital humanities workshops are at the forefront of our discipline. By taking up the essays contained in this volume as examples of the intentional pedagogical intervention created by workshops, we hope readers will fully appreciate and understand how workshop teachers, organizers, and attendees benefit from rigorous scholarly environments.

New digital humanities workshops are constantly being developed. Development can occur either from whole cloth with instructors starting entirely anew, or it can occur through the adoption of existing curriculum either as modules within the workshop or through the reproduction of an entire existing workshop. The chapters in this volume outline some of the lessons learned from organizing, teaching, and attending digital humanities workshops. This volume celebrates the diversity of workshops and, as such, each reader will find different elements useful. This collection is about the realities and practicalities of workshop design, development, and deployment. We do, however, recognize how those realities are constrained by institutional, individual, and other limitations. The ability to host a workshop requires personnel, access to physical and/or virtual spaces, recognition of workshops as an appropriate site of "work," and the time to develop, test, revise, and deploy workshop curriculum. Not all institutions recognize the time and effort of organizing, teaching, and participating in workshops.

The chapters in this collection, written by practitioners from a range of disciplines and geographies, focus on the lessons learned from the development, deployment, and assessment of a workshop or workshop series. Collectively, this volume is organized by exploring where digital humanities workshops take place, who participates and contributes to them, and how the workshop occurs. The volume thus asks, why are digital humanities workshops so important and what is their present and future role?

In our first section, "Where?", we seek to situate digital humanities workshops within local, regional, and national contexts. We begin with two chapters focusing on the Digital Humanities Summer Institute and Programming4Humanists, respectively. The first, by Ray Siemens, Alyssa Arbuckle, and Randa El Khatib, illuminates how the local need for digital humanities training grew into an international institute that welcomes more than 850 attendees from countries around the

globe; the second, by Bryan Tarpley, Nancy Sumpter, and Kayley Hart, illustrates the importance of staff and organization to running a virtual continuing education workshop series that meets the needs of both a local and international community. Likewise, Miriam Peña-Pimentel suggests in the third chapter that the need for knowledgeable researchers and teachers of digital humanities is driving Mexico's expansion of workshop curriculum. She demonstrates how curiosity serves as a key driver for scholars and students to engage with digital methods and tools. Taken together, these three opening chapters suggest that a key hallmark of digital humanities workshops is partnerships between individuals and organizations, which often emerge to serve local audiences and can sometimes also scale to address national and international needs.

We then move beyond North American contexts to consider how the "where" of a workshop can often be tied to regional and national proficiencies and infrastructures. In their chapter on effective organizational pedagogy in India, Justy Joseph, Kaviarasu P, Jyothi Justin, and Nirmala Menon suggest that Indian institutes serve as a primary location for facilitating the growth of the field nationally. Surveying past participants, they demonstrate that the "where" of digital humanities workshops encourages a sense of prestige that has helped researchers and students validate their embrace of digital humanities tools and methods. Anelda van der Walt, Juan Steyn, Angelique Trusler, and Menno van Zaanen focus on the creation of the ESCALATOR program in South Africa and in collaboration with The Carpentries to address problems related to embedding computational and digital practices within humanities and social sciences. Identifying how the challenges faced during early workshop iterations resulted in a permanent partnership to guide training, they argue that workshop siloing limits the impact on communities of practice. This trio of chapters closes with a consideration of the Taiwanese contexts of digital humanities workshops by Chao-Lin Liu. Providing an overview of the workshop landscape, Liu connects national support for cultural heritage, digitization, and workshop funding to the effectiveness of training efforts, and offers a futuristic outlook for the availability of dynamically linked data for thematic research. Collectively, these chapters suggest that the "where" of workshops is contingent upon technical and content expectations, conventions, access to technologies, and national and local support.

Our second section, "Who?", guides readers through questions of audience, participation, and collaboration in relation to digital humanities workshops. The collaborative authorship of the chapters opening this section (as well as others in the volume) merits particular attention as they directly present how the "who" of a workshop can encompass and complicate participatory roles where instructors and students may learn together. A team of instructors and students from New Zealand – Paul Millar, Maggie Blackwood, Geoffrey Ford, Davide Garello, Dorian Ghosh, Natalie Looyer, Donald Matheson, Caleb Middendorf, Kaspar Middendorf, Laura Moir, Clemency Montelle, Emanuel Stoakes, Christopher Thomson, and Mengjun Yu – considers the roles of research assistants and investigators as learners in digital humanities workshops. This chapter highlights the importance of research-based training that values students as equal collaborators who can

contribute to pedagogical opportunities. John Russell, Maria Isabel Maza, Lauren M. Cenci, and Claire M.L. Bourne, likewise, explore student reflection and intellectual autonomy in digital humanities workshops and project-based learning. They offer a digital edition stemming from student, librarian, and faculty collaboration as a case study that points to the need for consultative and iterative workshop design.

We then pivot to two chapters that consider how workshops can welcome and support people new to digital humanities. The first, authored by Jada Watson and Sarah Simpkin, focuses on how an institutional approach to digital humanities scales to serve those outside the institution. They suggest that a "toolbox" based approach can offer non-specialists a way into training by lowering the barrier to entry and encouraging experimentation without risk. The second, by Gesina A. Phillips, Dominic Bordelon, and Tyrica Terry Kapral, explores pedagogical techniques to minimize the technological anxiety that learners (be they student, faculty, staff, or community members) face. As Phillips, Bordelon, and Terry Kapral outline, choosing appropriate content for a given session, scaffolding micro failures, and framing errors as useful learning tools are all ways to support student learning in digital humanities workshops. These chapters also highlight the ways in which libraries, their staffs, and their infrastructure can support extra-departmental and community-based digital humanities training.

The values and lived experiences tied to questions of identity and audience are the subject of the next two chapters. Kush Patel, Ashley Caranto Morford, and Arun Jacob's chapter on anti-colonial digital humanities calls for "Respect. Reciprocity. Relationship. Responsibility. Restitution." as central tenets to pedagogy. They note the importance of moving past the instrumental functions of tool acquisition and product creation common to workshops in DH training, towards re-considering the role and meaning of this genre as process and in relationship- and community-building. Jeannette Eileen Jones, Tony Frazier, Claire Jiménez, and Sarita B. Garcia suggest that their own positionality and lived experiences as Black and Latinx scholars frame their leadership of digital humanities workshops focused on African American and Ethnic Studies. Embracing "listening" as their pedagogical starting point, they present four strategies for embracing reciprocity for workshop attendees. These chapters segue into the volume's final section by offering strategies for developing and deploying inclusive and welcoming digital humanities workshops.

The final section in this volume, "How?", explores the methodologies, critical positioning, and mechanics of digital humanities workshops. Elizabeth Grumbach and Spencer D.C. Keralis argue that design justice principles (including community building, respecting the expertise of all participants, mutual aid, and creative ideation and adaptation) can help achieve "the radical potential of critical digital humanities to make institutional and societal change." Describing their experiences creating and facilitating workshops in the United Arab Emirates, Beth Russell and David Joseph Wrisley also apply design thinking to digital humanities workshops through UX (User eXperience). They identify how serving broad audiences with varying skill sets can relate to technical infrastructures and the need

for the incorporation of user feedback beyond traditional assessments of learning outcomes. As readers will learn, design thinking can serve as an important basis for workshop development.

Just as the mechanics of a workshop can highlight a particular style of thinking, they can also align to larger institutional missions. Mia Ridge and Eileen J. Manchester in their chapter on workshops developed by cultural heritage institutions focus on the utility of scaffolding not just for pedagogical design but also for digital humanities work more generally. They argue that scaffolding provides a model for structures that focus the mind on the task at hand, remove distractions and barriers to equitable participation, and ensure more effective communication. Pakhee Kumar and Henriette Roued then ask readers to consider how "critically reflective" and "lighthearted" approaches can create a greater synergy between digital heritage skills that are otherwise usually separated in education and practice. Their chapter encourages us to interrogate the emotional aspects of how workshops are taught both from the experiences of instructors and students. Taken together, these essays illuminate the importance of cultural heritage institutions as sites of digital humanities training that build on cultural heritage goals.

The two final chapters in this volume focus on the long-term sustainability and future of digital humanities workshops. Considering how the transformation from an in-person workshop into a reusable, digital curriculum occurred, the first chapter highlights affordances and challenges of both in-person and virtual workshop models. Jennifer Guiliano and Simon Appleford illustrate how participant desire for continuing engagement following an in-person workshop led to the imaging of a reusable, extensible digital repository for digital humanities workshop curriculum. The volume closes with a chapter by Claus-Michael Schlesinger, Malte Gäckle-Heckelen, and Fabienne Burkard that identifies how a shared environment can support workshop objectives by abstracting from participants' individual systems. They posit that the virtual desktop solution DH2go developed for DH courses and workshops offers a way forward that solves some of the practical problems of offering DH training, as technologies vary and continue to change. By the close of this section, we hope that readers will have glimpsed the wide variety of decisions that can influence workshop mechanics and audience satisfaction.

While these three sections – Where? Who? and How? – seem to ask discrete questions, as the chapters in this volume demonstrate, these are not separate concepts. Chapters interrelate to one another within their section but also across the entire volume, just as the pragmatics and praxis of workshops cannot be distilled to a single question. Furthermore, *how* we offer workshops will change depending on *who* participates and the broader community and *where* (location, context, culture) workshops take place, as the contributions in this volume consider.

The three questions that we have not asked in these sections directly are *what, why*, and *when*, though the chapters here turn to these answers as well. *What* the learning outcomes of a workshop are, likewise, will be dictated by the community and its needs. *Why* we need digital humanities workshops is potentially exponential as we consider the needs of students in a 21st century employment landscape, the needs of researchers experiencing the swell of born-digital and

digitized materials, and the continuing devaluing of scholarly expertise globally. The *time* of digital humanities workshops is now: though many workshops have existed for years and some are just emerging, as this volume demonstrates, our praxis and pedagogy when it comes to digital humanities workshops is urgent and necessary to ensure we respond to our colleagues, students, and communities. It is our hope that you see these chapters as models for new workshops, as provocations for your pedagogy, and as individual case studies of what is possible when resources – human, financial, technical, and infrastructural – come together to support our engagement with computing and the humanities. We invite you to reflect upon this volume and to contribute to the ongoing discussions of digital humanities workshop pedagogy by attending a workshop, crafting your own, or by supporting an organization that offers equitable training opportunities.

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1 The Digital Humanities Summer Institute (DHSI)

Community Training Toward Open Social Scholarship[1]

Ray Siemens, Alyssa Arbuckle, and Randa El Khatib

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The Digital Humanities Summer Institute (DHSI) was founded in 2001 on Vancouver Island, British Columbia, Canada. Since its inception, DHSI has served as a community-based, annual training institute for the development and sharing of digital humanities skills, tools, and approaches. As the largest digital humanities curriculum in the world, DHSI mobilizes and leverages extant and ongoing activities across the arts and humanities and produces computationally capable, highly qualified personnel. This focus on professional and community development carries forward benefits, research priorities, and knowledge output in the social sciences and humanities to key areas both within and beyond academia. The institute now draws hundreds of participants annually from academic, government, business, and cultural heritage sectors and DHSI continues to support this large and varied community of practice. The engagement of multiple communities during DHSI significantly encourages the growth of a comprehensive, digital ecosystem constituted by many different sectors and practitioners across career levels.

In what follows, we provide an early history and overview of the last two decades of DHSI and reflect on the institute's growth from a local event comprised of a relatively small collection of early-career scholars to an international event drawing ~850 instructors, presenters, and attendees joining from all over the world every year; offered online due to the COVID-19 pandemic, DHSI brought together on average about 1,000 members of our community for each week it ran: 1,200 across a week in 2020, 2,000 across two weeks in 2021, and just over 1,000 across a single week in 2022. Moreover, we consider how DHSI's programming has evolved over the last 20+ years, and, looking forward, focus on the emergence and sustenance of digital

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self-determination and open social scholarship concerns and approaches. We close by considering how a values-based approach to training in the academic context is pertinent and necessary for today and the decades of digital scholarship to come.

The Digital Humanities Summer Institute's Early History and Context

Since its establishment 20 years ago in 2001, the primary goal of DHSI has been to develop and sustain a community of practice in digital humanities – a field residing at the intersection of computational methods and the traditional and evolving pursuits of the humanities. DHSI was initially suggested publicly as part of skills training offerings aligned with the 2001 conference on *The Humanities Computing Curriculum/The Computing Curriculum in the Arts and Humanities*, which took place at what was then known as Malaspina University-College (now Vancouver Island University). DHSI's roots can be traced to even earlier efforts, pre-2001, of a similar nature, such as the Princeton/Rutgers Centre for Electronic Texts in the Humanities (CETH) summer seminars and those initial offerings of the Oxford University Computing Services Humanities Computing Unit summer seminars and workshops series. As DHSI grew and developed in the early 2000s, roughly concurrent (although more specialized) offerings took place via the University of Glasgow Digitisation Summer School, the University of New Brunswick Electronic Text Centre Summer Seminar, and the Grindstone seminars on cultural informatics. An advisory and consultative board was formed from the initial 2001 proposal, consisting of leading and rising theorists, practitioners, and administrators in the field – a foundational group represented among DHSI's advisory board to this day. Working toward the idea of offering a more substantial institute, this group participated in several smaller initiatives, which culminated in the local Humanities Computing Summer Workshops, held June 2003 at the University of Victoria, extending the workshop offerings of 2001 and 2002. The University of Victoria's Faculty of Humanities (and its Humanities Computing and Media Centre) and Malaspina University-College's Centre for Digital Humanities Innovation sponsored the event. Primarily, these workshops featured introductory offerings in the areas of digitization, text encoding, multimedia, and text analysis. Though advertised to and aimed at a local audience, the workshops were open to all and attracted approximately 35 participants from the sponsoring institutions as well as from other institutions connected to national and international humanities and library communities. With the assistance of the Social Sciences and Humanities Research Council (SSHRC) Image, Text, Sound, and Technology program and additional co-sponsors (University of Victoria, Malaspina University-College, and Acadia University), the 2004 offering drew some 75 participants from across Canada as well as from locations in the United States and United Kingdom;[2] in 2004, also, the Electronic Textual Cultures Lab was founded in Victoria, and ETCL became the home of DHSI under Ray Siemens as Director. The 2005 institute attracted a similar group and was offered in conjunction with the joint international conference of the Association for Computing in the Humanities/ALLC:

The European Association for Digital Humanities. From 2006–2009, the institute hosted in excess of 100 local, national, and international participants annually.

After the first 10 years of slow and steady growth, DHSI began attracting wider and larger participant groups in its second decade. Around this same time, the conception of digital humanities as a community of practice emerged, defined in large part by the concept of the *methodological commons* (McCarty and Short 2002). At the same time, DHSI community members discussed what a typology of digital humanities training might look like, which one of our co-authors, Ray Siemens, shared at Digital Humanities 2010 at King's College London. Taking a grassroots, bottom-up approach, the typology catalogued informal to formal training types. Informal training, for instance, included things like collegial discussions in person and online; slightly more formalized are the types of exchanges where people simply get together and talk on a regular basis about the sort of work that they are engaged in, perhaps over lunch or coffee. Increasingly more formal consultations and training events included regional, national, and international skills-based workshops. Reversing this approach to look from the perspective of the most formal types of training presented a very different view, beginning with more formal curriculum of an accredited kind: dedicated PhD programs, master's and undergraduate programs, digital humanities-*inflected* programs, and occasional curriculum. In consultation with other members of the digital humanities community, colleagues suggested considering institutional and field legitimacy, enrollment numbers, cost of delivery, formality of offering, ease of establishment and implementation, and curricular agility as well.

Ultimately, Siemens portrayed this research in Figure 1.1, originally presented at the annual Digital Humanities conference (Siemens 2010). Formality of training is represented on a decreasing scale from most formal to most informal. Factors associated with this scale are listed as well. In this typology, a dedicated PhD

		Instit'l Legit'cy	Form'ty	PP cost Costs	Approx. #s	Ease to Impl'mt	Agility
Formal / University Curriculum		Higher	Higher	Higher	Lower	Lower	Lower
	Dedicated PhD programs	Λ	Λ	Λ	I	I	I
	Dedicated Masters programs	I	I	I	I	I	I
	Dedicated U'Grad programs	I	I	I	I	I	I
Current	Occasional / 'inflected' accredited curriculum	I	I	I	I	I	I
Sweet ->	International skills-based workshops	I	I	I	I	I	I
Spot?	Regional / Nat'l skills-based workshops	I	I	I	I	I	I
	Local skills-based workshops	I	I	I	I	I	I
	Formal consultations, brown-bag sessions	I	I	I	I	I	I
	Collegial discussion, online networking	I	I	I	V	V	V
Informal / Peer Networking		Lower	Lower	Lower	Higher	Higher	Higher

Figure 1.1 A general typology of digital humanities training options, originally presented at the Digital Humanities 2010 conference

program is placed much higher in terms of institutional legitimacy and formality (and higher in terms of per-person costs, unsurprisingly); collegial discussion and online networking are much higher in terms of the approximate numbers that one can train, ease of implementation, and responsive agility.

Further work by the DHSI advisory group identified positive patterns for ideal interventions and investments of time and resources. In this, the community increasingly came back to a greatest point of potential impact, or *sweet spot*: a blend of occasional, digital humanities-influenced or -integrated curriculum and regional, national, and international skills-based workshops. In 2010, this felt revelatory; the DHSI advisory group had not expected the research to point in this direction. The expectation was for results supporting a *trickle-down* approach, where investment in developing more formal, legitimized types of training (e.g. PhD and master's programs) would have the greatest impact. What the research suggested instead was that a focus on the sweet spot existing between occasional curricular offerings, international workshops, and more national and regional interventions would have the greatest impact, either directly or adjacently.

Reflecting on and integrating the conclusions of this research, DHSI expanded to become one of several intervention points in this context. The DHSI advisory group considered these findings, resulting in the consensus to work with the community to invest more heavily in DHSI and similar enterprises. Discussions, at least initially, centered on the way in which DHSI operated in relation to other training types. Key issues related to ease of agility and implementation; number of community members involved at any given time; and connections between digital humanities training at the University of Victoria and the wider digital humanities community of practice, including in the constituent organizations of the Alliance of Digital Humanities Organisations (ADHO).

From this point, DHSI supporters in the ETCL and at the University of Victoria undertook a significant strategic response: they agreed in principle that DHSI would align with the research findings and that additional investment in DHSI would also begin development toward supporting more formally accredited curriculum of MA and PhD programs at partnered institutions. This additional concern manifested as a possibility of blending directed- and participant-driven curriculum in an accredited framework. In addition to developing an accreditation model, DHSI began working together with other groups making similar investments in training toward what was, before 2012, an informal and collegial network of digital humanities institutes. This network was ADHO-proximate, and soon (after a meeting at the Digital Humanities 2012 conference in Hamburg) began articulating itself as an international training network focused on pragmatics, collaboration, course offerings across skill levels, temporal and geographic distribution, and other shared areas of concern. Further points of collaboration and cooperation emerged across the DHSI partner network, institutions, faculties and departments within institutions, research centers, and large research programs. DHSI increased engagement with larger organizations including the Canadian Society for Digital Humanities/Société canadienne des humanités numériques; Association for

Computing in the Humanities, Humanities, Arts, Science, and Technology Alliance and Collaboratory (HASTAC); Modern Language Association (MLA); Federation for the Humanities and Social Sciences; and SSHRC. As DHSI organizers worked locally for accredited curriculum, such mutual benefit from working together also yielded the ability to articulate that curriculum in a graduate certificate program. Those enrolled in the graduate certificate program could take two of a total of five courses needed to complete the program at institutions outside of the University of Victoria.[3]

Next steps included formalizing an ADHO network for digital humanities training which, after several years of formal and informal consultation in this vein, was recognized by ADHO at Digital Humanities 2014 in Lausanne. As identified by a consultative questionnaire circulated widely to DHSI community members, elements of the mandate for such a network included coordinating international partnerships, curriculum across institutes, and temporal and geographic distribution; discussing curricular models; sharing publicity; holding a formal summit on digital humanities (DH) training; and offering advice and peer support.

Developing through the efforts documented here, DHSI has grown concurrently with the dynamic field of digital humanities. Best defined as the intersection of computational methods and humanities scholarship (McCarty 2003; Kirschenbaum 2012), digital humanities has gained significant momentum over the past two decades, in keeping with the prominence of computers and digital technology in society. Among other indicators, the growth of digital humanities is apparent in increasing curricula integration and an expanding community of active researchers. Digital technologies make possible new methods of display, performance, and knowledge sharing. Further, digital humanities experts lead research into the use of technology as a pedagogical tool (Davis et al. 2015) and fruitful mode of public outreach (Liu 2012). Other exemplary lines of inquiry associated with digital humanities in general and DHSI in particular, in the 2020s, include digital publishing; re-purposing archival materials online or in databases; automating means to represent print-, visual-, and audio-based material in tagged and searchable electronic form; exploring game-based approaches to teaching and learning, encoding material for web use (including for the semantic web); critical making and 3D printing; pursuing sophisticated textual analysis and data mining processes; and developing critical intersectional approaches to digital media, tools, and platforms. These activities and approaches – too numerous to list in this short chapter[4] – are pivotal for translating and applying humanities practices to areas outside of the academy now and in the future and are represented in recent DHSI offerings.

Today's Digital Humanities Summer Institute

Although the institute has evolved considerably over the past two decades, DHSI still provides a space for individuals to share, learn, reflect upon, and connect over digital tools and technologies for humanistic work. Current Co-Directors Ray Siemens, Alyssa Arbuckle, and Randa El Khatib work closely with a larger team based at the University of Victoria's Electronic Textual Cultures Lab on the

organizational and operational aspects of the institute. DHSI's current advisory and consultative board consists of leading and rising researchers, practitioners, and administrators, all of whom have been involved with DHSI for years.[5]

DHSI integrates training in basic digital scholarly pragmatics and essential skills – such as "Text Encoding Fundamentals and their Application" – alongside essential conceptual and contextual critical approaches – including "Race, Social Justice, and DH: Applied Theories and Methods" and "Pedagogy of the Digitally Oppressed: Anti-colonial DH Critiques & Praxis" – and offerings requiring advanced technical expertise – such as "Network Analysis." Each year we put out a call for proposals for those who would like to teach at DHSI. In this way we have, over time, ensured that the digital humanities community drives the DHSI curriculum, and every year we offer as many proposed courses as we can (subject to local processes and infrastructure availability). At the same time as continuing development and growth along those lines, we also look for ways to work with others and bring them consciously into our community by inviting non-digital humanists to join us locally and reaching into their local contexts as well. In these efforts, we have been lucky to work not only with a number of exemplary members of our community to advise, organize, and offer DHSI each year, but also with a number of generous partners and sponsors – all of whom ensure that we continue to operate in a positive, community-oriented manner. As Chad Gaffield, previous President of the Royal Society of Canada, has written,

> The genius of DHSI is multi-faceted including its organization and content, both of which have shaped and cultivated the developing scholarly culture and substantive range of DH. Its growth, however, also reflects the extent to which the kind of enrichment offered at DHSI is not available elsewhere domestically or internationally.
>
> (2016)

DHSI is unique in its availability to students, staff, and faculty at all institutions, national and international alike, and to individuals not explicitly aligned with a university or else from sectors outside of academia.

But DHSI is far from alone in the digital humanities training landscape, as this collection attests. As part of its current training network, DHSI contributes to, draws upon, and complements other offerings by DH Downunder, Digital Mitford Coding School, DHSITE@Ottawa, DH@Guelph, DHSI@Congress, HILT, DH@Oxford, DH@Leipzig, DHI Beirut, EDIROM DH, and ZIM@Graz. In recent years we have also organized digital humanities programming at the annual Modern Language Association convention under the name DHSI@MLA. Moreover, DHSI continues to partner with a range of national and international organizations and institutions in order to strengthen and diversify the digital humanities community even further. Numerous universities and colleges are included on this list, as well as notable groups such as the Alliance of Digital Humanities Organizations, Advanced Research Consortium, Association for Documentary Editing, Canadian Research Knowledge Network, Compute Canada, Digital Scholarly Editions

Initial Training Network, and Networked Infrastructure for Nineteenth-Century Electronic Scholarship, and, as noted earlier, the Federation for the Humanities and Social Sciences, HASTAC, and the MLA.[6]

DHSI attendees expect professional-level training outcomes (as articulated by groups like the Orlando Project [Brown et al. 1998]), as well as opportunities to develop valuable computing skills associated with humanities research. DHSI participants harvest and improve skills that translate easily into fields beyond academic pursuits, including digitizing materials, processing electronic material with adherence to standardized tagging methodologies, preparing digital material for publication, and developing new media proficiency (including effective information design and project management). In addition to enrolled participants, DHSI attracts instructors, plenary speakers, and invited lecturers from among acknowledged experts in the Canadian and international community. The institute also involves skilled course leaders, many of whom work with co-instructors, who in turn, receive training in digital humanities instruction. Graduate student researchers in particular have the opportunity at DHSI to augment and strengthen the critical and methodological academic training they receive by developing highly valued computing skills. In this way, emerging scholars and new practitioners are better prepared to share their research and skills with their colleagues and communities.

Many different projects begin at or are catalyzed during time at DHSI. To provide only a few examples among hundreds one might look to the digitization, for public access, of the gallery archives at the Urban Shaman Contemporary Aboriginal Art Gallery; the creation of the public digital exhibit *Practical Work: Chicago Woman's Club Reformers, Criminal Women, and Delinquent Children*; or the development of the open website *Writing of Indigenous New England*. All of these projects employ digital humanities tools, with skills explicitly learned at DHSI, to share research and collections with other scholars, students, and the public at large. Members of our community have written about DHSI in venues such as the *Chronicle of Higher Education* (Benton [Pannapacker] 2008; Meloni 2010; Houston 2012; Pannapacker 2012; Templeton 2014; Skallerup Bessette 2015) and *Information Quarterly* (Bialkowski et al. 2011). In 2020, DHSI also launched its own online, open access, peer reviewed journal titled *Interdisciplinary Digital Engagement in Arts & Humanities* (IDEAH; ideah.pubpub.org) to share and circulate the work discussed and developed at DHSI even more publicly.

Notably, many of the major recent advances in digital humanities have come out of collaborative spaces. A large majority of the current leading figures in the field – including those who have gone onto success in sectors outside academe – can trace the origins of their interest in digital humanities and its applications to instruction received at DHSI. The importance of collaboration, community building, and knowledge transfer within a field cannot be overstated. DHSI has an over two-decade long track record in providing pertinent and necessary training, and a ~6,600-strong alumni group can attest to its value to date.

With the pivot to virtual conferencing after the onset of COVID-19, DHSI shifted online as well to continue fostering scholarly engagement around shared interests

in digital humanities research and pedagogy. In the face of uncertain circumstances and lockdowns during the pandemic that resulted in increased feelings of isolation, one way we worked together to cultivate community care for DHSI 2020, 2021, and 2022 was to make many of the offerings and aligned events freely accessible. DHSI 2020 – Online Edition (6–11 June 2020) consisted of four aligned conferences, some of which were newly launched. This model was expanded in 2021, with the launch of virtual workshops and keynotes, and an increase in the number of aligned conferences. More specifically, the DHSI 2021 – Online Edition (7–11 and 14–18 June 2021) consisted of 10 keynote speakers – one for each day of the institute – as well as 47 workshops and seven aligned conferences and events. In 2022, the online edition of DHSI was held over one week (6–10 June), and consisted of five keynotes and six aligned conferences and events. This iteration offered a larger selection of workshops still, sitting at 61 workshops in total. All events were held on the video conferencing platform Zoom, with some discussions taking place over social media, on Twitter and Facebook.

The online format made it possible for DHSI to pursue several digital-specific opportunities. For one, hosting DHSI virtually and making it more accessible cost-wise for three years brought more people to the institute than ever before. An in-person DHSI typically draws about 850 registrants per year, whereas the one-week DHSI 2020 – Online Edition had over 1,200 registrants, the 2021 two-week institute brought together some 2,000 participants, and 2022's week saw ~1,000 participants. With an extensible capacity to host attendees on the virtual communication platform Zoom, for each event we were able to have more audience members than in a typical seminar room at the University of Victoria. Keynotes were held in real time but could also be accessed asynchronously, as could the presentations that were part of the several aligned conferences, giving people an opportunity to engage with materials at their leisure. When attending DHSI in person, participants can register for up to two workshops, one in each week of the institute, whereas in the virtual iteration, they had an option to register as an attendee or auditor. As an attendee, they could sign up for one or two real-time workshops. As an auditor, however, they could sign up for as many workshops as they wished and received asynchronous access to workshop materials to tackle on their own time. We discovered that the auditor option was in high demand, reflecting a vast exchange of knowledge, skills training, and a general curiosity of DHSI attendees in more than one area of study under the broad umbrella of digital humanities. Of course, when DHSI is held in person, knowledge exchange happens beyond the confines of a classroom and takes other shapes through formal and informal networking. Although conversations and networking were still taking place virtually via social media and in the Gather virtual reception space in 2021, this aspect was more limited in comparison to in-person gatherings at the University of Victoria.

Several aligned conferences partner with DHSI every year and are held concurrently, such as the Symposium for Indigenous New Media and the gathering of the Digital Library Federation in 2018, the Society for the History of Authorship, Reading and Publishing annual conference in 2017, the Electronic Literature

Organization conference in 2016, and others. In addition to the ongoing DHSI Conference and Colloquium co-led by Lindsey Seatter and Arun Jacob in 2020, Caroline Winter and Jacob in 2021, and Winter in 2022 (its fourteenth year), 2020 saw the launch of the Project Management in the Humanities conference organized by Lynne Siemens, as well as the transition from workshop to full-fledged conference for Right to Left (RTL) co-led by David Joseph Wrisley and Kasra Ghorbaninejad, both of which were also held in the years since. The accessibility of the virtual format was pivotal for the RTL initiative's community building efforts, since it was able to draw in a wider network of digital humanists researching or teaching in right to left languages such as Arabic, Hebrew, and Persian based outside of North America. The 2021 conference also saw the launch of three additional global conferences: the Open/Social/Digital Humanities Pedagogy, Training, and Mentorship co-led by Laura Estill, R. Siemens, and Constance Crompton, a conference of the ADHO Special Interest Group for Digital Humanities Pedagogy and Training and the Implementing New Knowledge Environments (INKE) Partnership Training cluster, as well as the Open Digital Collaborative Project Preservation in the Humanities led by Luis Meneses, and the Research Data Management for Digitally-Curious Humanists: Data Management Planning Workshop for Humanists co-led by Lisa Goddard, Shahira Khair, and James Doiron. All conferences designated their own keynote speakers, followed by a two-hour Q&A session with conference presenters whose materials were posted ahead of time on the DHSI website. Many of these offerings returned for 2022 as well and expanded to include a new gathering on "Launching a Digital Commons for the Humanities and Social Sciences" by Graham Jensen.

Over the last three years, we have learned that the interpersonal dimensions of DHSI that form the core of our community are difficult to replicate in online environments. But we have also found that the virtual institute has helped us cultivate a more global and inclusive community and still engage in productive modes of knowledge exchange in virtual environments. Reflecting on these lessons, we hope to explore hybrid elements for future iterations of DHSI that will be held in person as well as feature online components. In this way, we can involve and learn from community members around the globe who may not be able to make the trip to Victoria, B.C.

Anticipated Future Directions for Digital Humanities and the Digital Humanities Summer Institute: Community of Practice, Digital Self-Determination, and Open Social Scholarship

Looking forward, we anticipate that DHSI – along with the broader field of digital humanities – will continue to evolve as a community of practice, with increased focus on and activity in the areas of digital self-determination and open social scholarship. Taken together, these anticipatable trends point in positive directions: they increase the digital humanities community's ability to pose new types of questions, pursue answers to those questions, and share with both

experts and those in the wider society academics serve. Foreseeable changes to humanistic data, tools, and communication strategies will alter the way humanities scholarship is done in the generations to come – especially if these changes put digital humanists in closer proximity to, and contact with, broader publics. Although the exact contours of the future are difficult to predict, at DHSI we feel that if we are flexible in our understanding of what it is we do, how we do it, where we do it, and with whom we do it, we are ready for the positive challenges aligned with such trends.

Put another way, we might ask: how does our community of practice respond to emerging and future challenges and opportunities? One path is simply to be open about our work and to engage in action-oriented processes with both academic and non-academic stakeholders. In doing so, we can take full advantage of this pivotal moment, not only for the humanities and their connection to society at large but for the role of the digital humanist therein. Such a foundation allows digital humanists to determine their own future, rather than rely on other disciplines, organizations, and institutions to decide what the digital humanities should look like 10, 20, and even 50 years hence.

Another key area of intervention for the digital humanities is in *open social scholarship*. As articulated through the INKE Partnership, a research partnership we are members of, open social scholarship can be described as "academic practice that enables the creation, dissemination, and engagement of open research by specialists and non-specialists in accessible and significant ways" (n.d.a.).[7] Although knowledge has been circulating in formal and informal ways for centuries, the concept of open social scholarship focuses on the open creation, production, and sharing of research across publics. Such activity hinges on a commitment to open access publishing and the ethos that publicly funded research should be publicly available. Open social scholarship moves beyond access, though; it also asks how research material can be more findable and more usable and how it might be co-created by multiple knowledge holders.

As it is, not many training opportunities related to open access, open social scholarship, or social knowledge creation exist, although millions of people engage with socially created information daily (Kingsley 2021). A lack of digital literacy and understanding of knowledge production has serious implications, as documented in the rise of fake news and the repercussions of such misinformation circulating widely. Dedicated training is crucial for academic specialists and emerging researchers to learn how to share their work more broadly via technological means. Training would also be useful for engaged members of the public to develop digital literacy and open scholarship skills. Purposeful, focused, and high-level open scholarship training ensures that all who engage in socially generated knowledge do so productively and beneficially. To this end, DHSI launched an Open Social Scholarship course stream a few years ago. Courses in this stream are purposefully focused on public engagement, social issues, and creative approaches to scholarly communication.

The INKE Partnership's Training cluster is partnering with DHSI to explore open social scholarship within this framework of digital self-determination and working with the digital humanities community of practice.[8] Co-facilitated by Constance Crompton (University of Ottawa) and Laura Estill (St. Francis Xavier University),

the Training cluster will focus on how best to create, use, and mobilize knowledge effectively among communities – including the public. The Training cluster's objective is to "grow expertise by training members of our communities in effective creation, use, and mobilization of knowledge, within and between academic and non-academic groups" (INKE Partnership n.d.b.). Moreover, Training cluster members are researching and developing innovative training strategies and approaches to improve digital literacy, information-seeking, and knowledge production for students, researchers, industry, and engaged members of the public, within a theoretical framework of open scholarship. They are doing so through the *Open Scholarship Training Program*, a program that will adapt existing and develop new training opportunities in order to meet academic, partner, and public need for open scholarship training in a changing information landscape, as well as grow the capacity and reach of digital scholarship partners currently involved in similar endeavors. In growing this program, the Training cluster will expand the existing DHSI open social scholarship course stream and collaborate with the in-development Canadian Certificate in Digital Humanities/Certificat canadien en humanités numériques (cc:DH/HN), with a focus on public engagement, social issues, and creative approaches to scholarly communication, as well as coordinate or collaborate with other large-scale open scholarship training initiatives in Canada and abroad to incorporate open social scholarship approaches into their own offerings.

Conclusion

Over the past two decades, DHSI has followed a community-driven approach to training, aligning with recent calls by Kathleen Fitzpatrick (2019) and Katina Rogers (2020) – among others – to take a values-based approach to academic work. We believe that this approach is key to DHSI's success: we are not a top-down organization, but rather a collective that was born in and evolves with the digital humanities community itself. As DHSI moves forward, we follow this tried-and-true model and work with recognized national and international leaders who advise the organizing team on best practices and areas of need. Well-established in the Canadian community and attracting participants and instructors from many other countries besides, DHSI continues to strive toward providing an international venue for the concentrated exploration of how computing has been, is, and will be incorporated into arts and humanities activities, as well as how these developing technologies can be leveraged to benefit many other communities.

Until roughly 20 years ago, explicit attention was not paid to integrating technology into the professional activities of the humanist or on how technology can help further the goals of the liberal arts. Now, DHSI community members have the opportunity to learn tacitly and put technologies and skills into practice during and after the institute. We believe in actively connecting individuals with larger institutions and communities in diverse sectors and responding to past, present, and future needs in arts and humanities communities. We aspire to do so by providing an intensive environment that facilitates skill acquisition and development, fosters the co-creation and circulation of new tools and research, and focuses on

collaboration and broad community building – all while looking forward to how the digital humanities will continue to evolve in positive and productive ways.

Notes

1 Some of the content published below is revised from its original publication in Siemens (2016, 2017).
2 Participants heralded from the University of Victoria, Malaspina University-College, Acadia University, University of British Columbia, Simon Fraser University, University of Alberta, University of Toronto, McMaster University, University of New Brunswick, Stanford University, Emory University, University of Illinois, King's College London, and elsewhere. See the DHSI website (dhsi.org) for details of earlier institutes, including participation lists.
3 This outcome is now being rearticulated at the national level within the nascent Canadian Certificate in Digital Humanities/Certificat canadien en humanités numériques (cc:DH/HN) initiative, led by Laura Estill.
4 See dhsi.org/on-campus-courses/ and dhsi.org/online-workshops/ for current course offerings, and dhsi.org/course-archive/ for previous course offerings, and their instructors.
5 See dhsi.org/our-team.
6 A full listing is available at dhsi.org/partners-sponsors.
7 See inke.ca for more information on the INKE Partnership. For a research scan on open social scholarship, see El Khatib et al. (2019).
8 See inke.ca/training for details on the *Training* cluster.

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2 Helping Humanists Hack

A Tale of Program Coordination, Classroom Support, Adaptive Pedagogy, and Python

Bryan Tarpley, Nancy Sumpter, and Kayley Hart

We confess that writing a chapter on "the workshop" for the scholarly DH community feels uncomfortable for several reasons – many of which, we understand, are precisely the point of this volume, which solicits voices like ours to speak about an aspect of our work that would normally remain unarticulated. By "voices like ours," we mean people whose vocations don't typically involve direct engagement with scholarly discourse communities, much less that of DH pedagogy. Specifically, in this case, "we" refers to people who hold job titles like "Program Coordinator II," "Research Assistant," and "Software Applications Developer III." We are not faculty members. We rarely wear the hat of the scholar. Within the scope of our daily job duties, the "Programming4Humanists Continuing Education Series" (P4H) offered by the Center of Digital Humanities Research (CoDHR) at Texas A&M University (TAMU) is only one of our many concerns, though it serves here as the subject of this essay.

Alongside that discomfort is a different kind of unease – throughout the course of having offered our P4H program since 2014, we've never once (outside of this context) referred to it as a workshop. This unease, however, seems equally salient to this volume, as one of its objectives is to highlight and explore the liminal nature of training in the digital humanities. What we offer via P4H is a hybrid between formally structured and accredited courses in computer science and the hodgepodge of online tutorials that promise to teach in minutes how to use Python to scrape a webpage or query a database. Our offerings, all geared toward humanists who've likely never stepped foot in a computer science classroom, are intended to equip those who "yack" with and about the tools (and the language and ways of thinking that accompany them) to "hack" (Nowviskie 2016). The pedagogical goal, then, is not to convey mastery over computer science concepts like polymorphism or Big O notation, but rather to brush aside enough of the techno-veil to engender the bravery to play, fail, and keep trying. To the extent, then, that a DH workshop is a space where diverse professionals in the humanities are willingly interrupted in the course of their work to gain practical experience and widen their horizons of computational possibility, we grant that P4H fits the bill.

What follows is an attempt to knit together our experience of the P4H program in the form of a narrative woven together from each of our three perspectives – one that hopefully conveys where P4H came from, how it works, what it does, and

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what it takes to keep it running – with the goal of providing a case study for only one of the myriad permutations of the DH workshop.

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My name is Nancy Sumpter, and though I have just recently retired from my position, I've been the Program Coordinator for CoDHR since 2013. With the exception of our Director, Laura Mandell, I was with the center longer than anyone and am a repository of institutional knowledge. I was there for the inception of P4H. Our goal in creating this program was to carry out our mission, which includes striving "to educate the Texas A&M community, other Texas universities, and academics and scholars worldwide" (CoDHR 2021). The hard part was figuring out how to make such a program self-sustaining. We are generously staffed by the College of Liberal Arts with myself, a developer (Bryan Tarpley), and a systems administrator. Our ability to hire postdocs, graduate researchers, undergraduate student workers, and private contractors, though, largely depends on outside funding including grants. In conceptualizing P4H, we wanted to offer an educational program that wasn't so susceptible to the ebb and flow of grant monies. We discovered that by offering the P4H program as a continuing education series, it allowed us to charge registration fees for participants who aren't affiliated with Texas A&M. This provides a line of income that allows hiring of the staff we need (like Kayley) and maintains a facility that supports the multimodal nature of our DH learning environment.

Like the DH Workshop itself, "continuing education" programs are liminal spaces where subject matter experts can offer classes to the community that aren't subject to the restrictions of a typical, accredited university course. The students don't have to be enrolled at the hosting university. The registrar doesn't dictate whether, where, or when we hold class sessions. We are also in control of determining the cost of registration and can collect those funds directly. The rules surrounding continuing education courses no doubt differ from place to place, but for us, it involved adhering to the requirements set out by the Office of the Provost ("Best Practices for Continuing Education Programs," TAMU 2009) and seeking approval from the dean for the College of Liberal Arts. We must submit an annual report to the dean, providing information about the number of courses offered, descriptions of courses and fees, revenue and expenditures, and the number of participants for the year.

Beyond this initial, strategic framing of P4H as a continuing education program, the nature of P4H evolved over the course of time via an organic, iterative, and collaborative process. The term "collaborative" here is important, as it describes not only the manner in which P4H was shaped, but also the general modus operandi of CoDHR. While our major initiatives are envisioned and broadly defined by our director, Mandell's approach to leading the center always entails engaging in discussion with the entire staff at our weekly project meetings. As such, the constitution of the P4H program very much owes itself to several past and present

employees, with special acknowledgement to Liz Grumbach (Project Manager, 2012–2017).

In total, we've offered 12 courses, with the first in the Fall of 2014 (Programming4Humanists 2021). Half of our courses tend to be thematically organized around the creation of scholarly digital editions, or as a crash course on the field of DH in general. The other half focus on a particular language or tool, such as Python or Gephi. For the courses organized around digital editions, past topics have included introductions to HTML markup and CSS styling, TEI XML encoding, XSLT transformations with XPath and XQuery, RDF metadata, data cleaning with OpenRefine, text analysis and topic modeling with R and Mallet, optical character recognition for historical documents, content management with Drupal, DIY (and sustainable) editions with Pandoc and Markdown, etc. These digital edition-oriented courses are primarily taught and organized by Mandell, though in the past she has co-taught with Diane Jakacki and Matthew Christy. Often, these courses also feature guest lectures by experts on particular topics, such as Clifford Anderson (XQuery), Neal Audenaert (R, topic modeling), Syd Bauman (TEI), Laura Estill (TEI), Quinn Dombrowski (Drupal), Liz Grumbach (OpenRefine), David Rettenmaier (Drupal), Shawna Ross (DIY Editions), Daniel Schwartz (TEI), and others. The Python courses, taught by Tarpley, will be elaborated upon later. Katayoun Torabi teaches our courses on Gephi, where she covers the theory and math behind network visualizations, and provides a thorough survey of the functionality of the Gephi application in the context of visualizing DH oriented datasets.

While we have experimented with the duration, frequency, and number of class sessions, courses tend to align with our university's academic calendar in that they begin and end in tandem with Fall or Spring semesters (14 weeks). By and large, class sessions are held once per week, are two hours long, and begin at 9AM CST on Fridays. The number and duration of class sessions is largely determined by the sheer volume of knowledge and experience necessary to convey. In fact, student feedback frequently asks for even more time. The 9AM starting time for the class was settled upon as the "sweet spot" across time zones of the contiguous American states. It is also convenient for most of our international participants. By holding the class on Friday, it gives our team time enough to download course videos, edit them, upload them to our content management system, and give students the link to view them by Monday.

The course videos are an important aspect of P4H. Given that our targeted demographic of "humanists" transcends geographical and temporal boundaries, so too must our pedagogy. For this reason, P4H has been from its inception a "hybrid course" that can be experienced synchronously in both the physical space of a classroom and the virtual space of the video conference, as well as asynchronously via the recordings. While the specific breakdown of students who prefer one modality over the others changes from semester to semester, in general, a class can have anywhere from 50–90 students.

The P4H program has a rhythm to it – it's a kind of dance whose first moves occur roughly three months before the beginning of a semester. It involves me

ensuring that conversations surrounding the nature of the coming semester's course are happening. Let's presume, as a fictional conceit of this chapter, that the conversation goes something like this: I ask whether we plan on holding a Python course in the coming Spring, as has become our custom. Bryan, our developer, confirms that yes, his schedule will allow it. In that case, things are easy. We've got an in-house instructor teaching a course that has happened many times before, so there's nothing else to do at this time. If, however, we decide to hold a course that our in-house instructors are not available to teach, or if we don't have the level of expertise needed for a topic, we'll recruit guest lecturers to teach several of the class sessions throughout the course. Guest lecturers who are not affiliated with the university are set up as a vendor and provided with a "services agreement" that stipulates the number and dates of class sessions to be taught, topics, and the amount payable. Guest lecturers are paid $150 per hour, or $300 for a two-hour class session if they are the sole instructor. This agreement is routed through various college-level approvals before fully executed. Payments are processed and sent to the guest lecturers after they've taught all their course sessions. For guest lecturers employed by our university, a letter is provided awarding a "research bursary."[1] Much like the services agreement, this award letter stipulates the number and dates of class sessions to be taught, topics, and the amount to be paid. Should we be "outsourcing" in this way for the entire semester, this amounts to something like $4,200 per course. Regardless, this step of the P4H dance is completed for me once the agreements are signed and the funds are encumbered. The next step belongs to the instructor, who needs to develop their syllabus.

I'm Bryan Tarpley, and I started working with CoDHR in 2012 as a graduate assistant researcher. I showed up at Texas A&M with a BA in Computer Science and an MA in English with an emphasis in creative writing, fully intending to leave my background in computing behind. By that time, I'd held various full-time IT positions in the capacity of either a programmer or systems administrator. I had started to transition away from that world – for two years prior I'd been an adjunct instructor in English teaching a full course load. My goal at A&M was to acquire a PhD in English and eventually become a tenured professor. Despite my avowal to never work in IT again, I soon became aware of the field of the digital humanities. I was drawn like a moth to the flame to Mandell's ambition to OCR the roughly 46 million page images comprising all of Early English Books Online (EEBO) and Eighteenth Century Collections Online (ECCO) as part of the Mellon-funded Early Modern OCR Project (Early Modern OCR Project 2015). I soon found myself building database schemas and writing applications to perform font-training for the Tesseract OCR engine.

My first attempt to code in Python happened during the course of the eMOP project. The majority of my programming up until that point had been in C-based languages (C++ or C#), which can be characterized as rather terse, verbose, and strongly typed. From that perspective, Python felt frustratingly unbound, with its

free-floating namespace and lax syntactical conventions that didn't delimit code blocks with curly braces or even require semicolons to punctuate its statements. As I wrote in one of the few tweets I composed during my awkward and short-lived attempt to use Twitter, "The circle of hell reserved for the makers of #Python consists of infinite and hierarchical plateaus delimited by colons and indentation" (@halcyonflies, January 25, 2013). I couldn't have anticipated how much Python would soon grow to fill my entire horizon.

For personal and financial reasons, I had to give up my graduate assistantship. I took another full-time IT position – this time as a developer for A&M's central IT department, where my job was to write enterprise web applications. To my chagrin, the entire shop had committed years ago to writing all of their backend code in Python. As I toiled away in this capacity, two things happened – CoDHR launched its P4H program, and I became so fluent in Python that it became the first language I reached for when solving technical problems. My return to CoDHR was precipitated by Matthew Christy's departure – I was delighted to be appointed their new lead developer. While working for central IT, I'd missed being in the classroom. I casually offered to teach a course on Python (for the Spring of 2017), which I'd come to see as the emerging lingua franca for the sciences, and with the advent of the Natural Language Toolkit, increasingly for the humanities as well. I was surprised by how receptive my new colleagues were to the idea. I was even more surprised when the class drew a robust enrollment of people from all over the place. My casual offer had suddenly manifested as something real, and to be honest, quite anxiety-inducing.

The anxiety was not expected. By that time, I knew Python backwards and forwards. I'd also had a fair amount of teaching experience. The problem was that I'd never taught programming before. I'd also only ever taught undergraduate students in mostly composition and rhetoric courses. I also saw some of the names and institutional affiliations of the people that had signed up and felt like an imposter. I'd not taken a single DH course and had little engagement with the DH community outside of my work at CoDHR. I proceeded with fear and trembling to create my syllabus. I was relieved to find there was plenty of material I could cover, albeit with a heavy emphasis on the technical side of things.

That first class was a success – it was well-attended and received favorable evaluations. I was relieved to discover that people weren't coming to me for insights into the nature of DH, or for novel theories about how to approach the scholarly analysis of cultural artifacts. I was there to teach Python. In fact, for most of the students, I was there to inculcate them into the way of thinking imposed by the paradigm of procedural programming,[2] which is by far the biggest barrier to entry for a scholar in the humanities. For this reason, the core of each of my Python courses moving forward became a module that spans six class sessions. It is laser-focused on learning primitive data types, lists and dictionaries (or arrays and hash tables), if-statements and loops, functions, and finally classes (object-oriented programming).

Returning to the fictional plot organizing this chapter, I receive official notice from Nancy that I'll indeed be teaching Python in the coming Spring. The next step

of this dance is for me to produce the official syllabus for the course. This includes making some decisions about the learning environment we'll be using. The syllabus, by this point, is easy. The first six weeks will be about the fundamentals. The remaining eight will be determined by class participants using a process I'll speak about later. As for the learning environment, the first time I taught Python we made use of a service called PythonAnywhere (PythonAnywhere 2021), which at the time provided a web-based console which allowed you to enter in lines of code one at a time and see the results, along with some cloud storage for uploading files you could access programmatically. PythonAnywhere's free tier of service provided ample computing resources for the majority of what we needed to accomplish. It wasn't until we started doing topic modeling for novel-length texts that we hit that upper limit, so a decision was made midstream for us to invest in $5 per user accounts which provided more than enough memory and CPU to satisfy our needs. One of the great advantages of using this service is the fact that their Python environment comes preloaded with just about any package you could want. If there's something missing, their responsive and friendly team is willing to install whatever you'd like. Of the other learning environments we've tried, it's also the only one that provides the infrastructure for creating web applications in Python (using Flask, Django, web2py, or Bottle). Even when we primarily use other environments, I always switch over to PythonAnywhere when students want to learn how to make dynamic websites with a Python backend.

We also experimented with hosting our own Jupyter iPython notebook service. We did this twice. Despite the fact that we're pretty proficient with deploying web services with Docker, even the "Dockerized" options out there for Jupyter require a non-trivial amount of configuration. Our goal with such an environment was to have full control and also offer our students much more storage and computing resources. I found, however, that the cost in terms of the time required to securely deploy Jupyter far outweighed the benefits, so we will likely not go that direction again.

The environment we've used most recently (and the one I will continue to use for now) is Google Colab (Google Colab 2021). Like PythonAnywhere, most packages you'd want to use come preinstalled. Others can be installed inside your notebook using "pip" commands. While the notebook environment comes with plenty of temporary storage for files, perhaps the biggest advantage of using Colab is the fact that it painlessly interfaces with Google Drive, so I can upload shared data, set the permissions to read-only, and all students can access it. Given the collaborative nature of DH, it also helps that Python notebooks you create in Colab can be easily shared as links, encouraging the collaboration implied by the platform's namesake. Having created my syllabus and settled on Google Colab, I email Nancy a copy of the syllabus, set aside P4H, and resume my other duties.

Nancy here. Time has passed – it's now a month and a half before the start of the Spring semester, so it's time to post Bryan's syllabus and update the "course

description," "meeting details," and "registration" pages on our Programming4Humanists site. Once those pages have been edited appropriately, we have a registration link to share. I must now start advertising. For this purpose, we send emails out on our CoDHR listserv, which grows over time. It ideally includes all faculty, staff, students, and collaborators we've worked with in the past. We also send out messages to department heads and the DHSI listserv. Beyond emailing, we also create posts on our CoDHR Twitter and Facebook pages, and otherwise rely on word-of-mouth to promote the course. If enrollment isn't moving along the way we'd like, we'll create subsequent social media posts as reminders.

Once advertising is taken care of, I must ensure that our university's online payment system is set up to allow participants to register. Since we started P4H, the university has transitioned to a couple of different payment systems. It's always a hassle to figure out how they work. Ideally, however, we have three different "products" available on the payment system, corresponding to the three different kinds of students we enroll. The first and most common type of student we have is TAMU affiliated (either faculty, staff, or students at our university). For these students, there are no registration fees; yet, we still have a product listing. Despite not having to pay anything, we still route them through the payment system so we get all the information we need for registration purposes.

The second "product" we offer via the payment system is for individual non-TAMU affiliates. The amount we charge for their registration depends on how many instruction hours will be offered during the semester. As a general rule, we charge around $25 per hour, along with a $50 administrative fee. Given that a typical semester consists of 14 two-hour class sessions, this amounts to $750. The third "product" available offers non-TAMU affiliates a discount for registering up to five students from the same institution, for which we charge $2,500 (a discount of roughly $1,250). The "per institution" option is popular with many universities.

Once the payment system is set up, and once we're about two and a half weeks away from the beginning of class, we open up registration and send out announcements to enrolled students. Upon registration, I send each student a "welcome" email confirming their enrollment, providing information about how the course operates, and letting them know we use the P4H listserv as the official method of communication. This is important, as many email services will initially mark listserv messages as spam. We generally leave registration open until two days before the beginning of class. We need that buffer of a couple of days for a few reasons. The first is so I have time to set up the P4H listserv for the semester, which will include all class participants, the instructor, the host, and myself. We must also ensure we have all the software licenses we need for our students. While Bryan's Python course doesn't require any software licensing, the digital editions course involves a lot of heavy work with XML (including validation and XSLT transformation). We always provide students a one-year licensed copy of Oxygen XML at a cost of about $50 per student. We also reserve the right to cancel the class at this point if we don't receive enough registrants. While this has yet to happen for one of our semester-length courses, we have occasionally experimented with short-courses at different times in the summer. We have found, for instance,

that a late-summer short-course doesn't always meet our minimum. In general, we require 25–30 non-TAMU affiliated students to cover costs and justify the expenditure of the instructor's time. The day before our first class, I send out the first of my weekly listserv emails to all class participants with the Zoom link, as well as instructions for installing Zoom and for reaching out with any technical issues. Once this happens, the most time-consuming part of my role in the P4H dance has concluded.

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Bryan here. It's the day before my first P4H class session of the semester and I'm exceedingly nervous. In fact, I get nervous before *every* class session, much more than I would before teaching a typical university class. Aside from the anxieties surrounding the nature of my audience (fellow professionals in the field), I suspect this feeling comes from the unidirectional nature of large, web-based pedagogy, where the bandwidth of audience feedback is low. There's no body-language to read alerting you to the fact that you've lost your audience, no chuckles to hear when your attempt at humor lands, no gasps of excitement when that "eureka!" moment happens. While P4H participants tend to be as verbose as they come in the chat, that feedback rarely occurs in real-time – it takes time to type things out. There's also the anxiety in knowing that everything you do is being recorded, and will be registered by people over and over in disparate, asynchronous moments.

For these reasons, I've never worked harder at course prep than I have for P4H. Even after teaching the Python course several times now, I've found that I can do little else during the eight-hour workday preceding a class session. For this reason, I block out every Thursday on my calendar for the semester, and often find myself prepping late into the evening. How can this be possible, especially given how many times I've taught this class before? The answer has to do with what I call "adaptive pedagogy." Each cohort of students brings its own unique, knit-together fabric of technical proficiency and fluency in the concepts of procedural programming. As a result, I cannot predict how much ground we'll cover on a given day. This is especially true once we start learning about loops and functions, which forces people to think beyond a strictly linear order of execution.

Aside from adjusting the pace with which we cover material, I must also adapt according to what's happening with Python in a given year. One semester, I started going over all of my material concerning the Natural Language Toolkit (NLTK) library, only to discover that the field of Natural Language Processing (NLP) had largely moved away from NLTK, favoring NLP pipelines like spaCy (https://spacy.io/) that were heavily reliant on machine learning. I suddenly found myself faced with having to learn everything I could about spaCy, while also needing to lay some groundwork with my students about the nature and limitations of machine learning.

Finally, I must be adaptive because I never know exactly what I'm teaching after the first six weeks of class. My students get to decide what we cover for the remaining eight weeks. This means that where one semester I'll spend a week

or two covering Optical Character Recognition (OCR), the next we'll cover the Twitter API instead. While part of me is thrilled by the constant novelty (I love learning new things!), the rest of me is filled with a kind of dread – What if I can't figure it out? What if it's too complicated given the scope of our class? What if a new Python library makes this so trivial that there's not enough material for a two-hour class? etc.

———

"Good morning, everyone. My name is Kayley Hart, and I'll be hosting this class." I've spoken that sentence at the beginning of every P4H class session offered by CoDHR since 2019. When I first served in the capacity of "host," I was pursuing an MA in English here at TAMU. I was working in the capacity of a graduate research assistant at CoDHR. I've since attained that degree and am planning my next career moves. For now, I remain at CoDHR as a research assistant, and when I'm not hosting P4H, I work on major grant-funded projects, such as the "Feminist Controversy in England" project which seeks to tag and analyze a large corpus of 18th-century novels with the goal of historicizing gender by surfacing non-binary identities that have been derived from the texts themselves (The Feminist Controversy 2020).

P4H is a machine with a lot of moving parts. Given the various modalities of participation available to students, my role is crucial, if largely behind-the-scenes. Before the COVID-19 pandemic hit, one of my duties was to be physically present at least 30 minutes before the start of a given class session so I could get the classroom set up. CoDHR is fortunate enough to have the "Humanities Visualization Space," which is a black-box room with a wall of screens allowing instructors and researchers to display and analyze cultural artifacts (or data visualizations) in a large, high-resolution format (HVS 2019). We have historically used that space for P4H. Part of my preparation involves turning on the screens, ensuring power strips are available for the instructor and any attending students, and setting up my own laptop with a wired internet connection in case the instructor's wireless connection fails.

Once the physical space is set up for the instructor and any in-person attendees, I log into Zoom about 15 minutes before class and start the meeting. As the instructor gets settled in, we do a quick check to ensure their camera, microphone, and screen-sharing are in working order. At 9AM, I kick things off by reading an introductory script that includes instructions for participating in chat and reaching out for technical support. From a classroom support perspective, the biggest obstacle to running a smooth P4H class session before the pandemic was a lack of familiarity with video chat on the part of participants. However, given the recent prevalence of Zoom meetings, much of the introductory script I read has become increasingly irrelevant, as it's now second nature for participants to mute themselves when not speaking, or to find the chat icon in order to ask a question. As such, my script is now limited to introducing myself and the instructor, letting participants know they can email me (or reach out via direct chat message) with any technical issues, and reminding them that the class session will be recorded.

At that point, I start the recording, hand things off to the instructor, and largely slip into the background, monitoring the chat and my inbox. Especially during the beginning of the semester, I'll receive a few panicked emails from participants about not receiving the Zoom link for our class session largely due to spam filters. Beyond this, much of my interaction with students is about traffic control. They like to report to me when they show up late, and often ask what they missed. They also prefer to inform me directly (as opposed to messaging the entire class) when they need to leave early. Aside from responding to direct messaging, I like to keep an eye out on the chat in case individual student questions get lost in the flow of chat messages. Most of the time either the instructor or another student sees them and eventually responds, but occasionally I need to alert the instructor to their presence.

On rare occasions, something goes very wrong with either the instructor's internet connection or the video conferencing service. The instructor's video or audio freezes, or they get knocked offline altogether. These moments are the least comfortable for me, as I have to pop in and take control of the situation, establish a line of communication with the instructor, and relay their decision as to whether to continue to the other participants. In moments like these, the power dynamics of being a grad student in a virtual room full of DH scholars and professionals make themselves most evident. This is mostly just a feeling on my part, as the DH community tends to be a welcoming one. There's an ethos that tries to attend to power dynamics like these. Nonetheless, I've certainly had the experience of encountering professors who recognize me primarily as the P4H host – it can be challenging to move beyond that perception.

Regardless, from my perspective, with an eye on the flow of traffic and the tenor of the conversation, I've witnessed several different types of classes and developed a few observations about what constitutes a smoothly run class. Things seem to work best when the instructor uses chat questions to establish the comfort level of the students with the material in question and adjusts the pace accordingly. We've had the occasional guest lecturer who was not expecting so many questions, and who became flustered or off-put by them, perhaps feeling the need to get through all of the material they prepared. That never goes well. Conversely, I've seen classes where the instructor intends for the students to determine where things should go through discussion, with little preparation beforehand. This can also backfire, as students might unknowingly ask questions that lead off into chaotic directions, or might not have questions at all, forcing the instructor to just wing it. Finally, I'll say that class runs best when students are eager to help each other, especially when answering chat questions about something an instructor has already covered, or when helping to debug some code.

Bryan here. Kayley has made her introductions and handed things over to me. It's time to teach Python! I've spent the previous day agonizing over what to teach, so now that I'm on the stage, my fear evaporates and I start having a good time. Generally speaking, I break my classes into three parts. The first is a brief roadmapping

session, where I take a moment to talk about what we've done so far, what we'll be covering today, and what we'll do next. We also handle any classroom business here. The way my semester is structured, for instance, involves having students decide what topics we'll be covering during the last eight weeks. As such, I like to prompt them on the first class period to be thinking about what specifically they'd like to accomplish with Python. I provide them with a list of past topics, such as NLP, web scraping, XML parsing, querying application programming interfaces (API's), performing optical character recognition (OCR) on images, etc. This gives them a sense of the scope of a particular topic so they know the kind of thing I'm looking for. I then ask them to email me individually, telling me a little about themselves in terms of their familiarity with procedural programming, the kind of work they do, and what topics they'd be interested in – particularly topics that aren't in the list of past topics.

By the fourth class period, I've collected their topic suggestions and concocted a Google Form that serves as a survey for ranking interest in new and past topics. I give them a week or so to fill it out. By the sixth class period, I use the results to determine overall class interest in the topics, and am able to plan out the remainder of the semester at that time. I allot however many class sessions to a particular topic as I see fit. Over the years, I've yet to teach a class that didn't include NLP. It tends to take up the most time of any topic, as it includes so many different concepts, such as stopwords, lemmatization, part of speech tagging, and named entity recognition. This prefaces the kind of second-order analyses you can perform with NLP data, like word frequency and topic modeling. Beyond NLP, however, there's no telling which direction things will go. I find that our discount for institutional enrollment of four to five students encourages groups of people from specific places to come to the course en masse with an overarching project need. DH is a big tent! This keeps me on my toes.

After that brief roadmapping/classroom business session, I often provide a short lecture (no more than 15–20 minutes) using Google Slides. Toward the beginning of the semester, I use this lecture time to lay a foundation of important terms and concepts – an ontology, so to speak, for the self-referential (and Python-flavored) world of procedural programming. While preparing these lectures, I scour my memory for concepts I acquired during my education in the humanities that might serve as helpful metaphors to bridge the epistemic gap between the "D" and the "H" of the digital humanities. I no doubt stretch and abuse these metaphors in gimmicky ways, but students seem to find it helpful to think, for instance, of a line of code as a "speech act" and therefore a bug as an infelicity (Austin 1962), of a variable and its value as the signifier and the signified (Saussure 1916), of the difference between a class and an object being like the difference between the platonic ideal of a chair and an instance of a chair, etc. This, I suppose, is another way in which DH workshop pedagogy is "adaptive" – it raids the jargon and ways of thinking intrinsic to the humanities for resources that serve, however clumsily, as accessible on-ramps to a world otherwise inscrutable outside of Silicon Valley.

In the end, however, no amount of clever analogy presented on Google Slide decks substitutes for just getting in there and coding. Procedural programming,

like all ways of "doing things with words," is best learned iteratively via lots and lots of practice. As the semester progresses, I find myself making fewer lectures, to the point that if there's any lecturing at all, it's about recapping what we learned last week, usually in the form of providing visual representations of what's happening in the Python namespace as we execute a short script one line at a time.

Once my lecture is done (if it happens at all), we jump into a live coding session which takes up the remainder of our class period. Before I describe these sessions, however, I must note something crucial, which is that I religiously adhere to the practice of providing a seven to ten minute break halfway through our two hour class meeting. Aside from providing a needed respite from the level of concentration required to scrutinize code together, these little breaks also give me a minute to check in with any stragglers – often my most productive debugging sessions occur during this break. I suspect that part of the reason for this is that some students feel reluctant to ask questions while the camera is rolling, so to speak. We always stop the recording during these breaks. For the same reason, after the official class session is over and the recording has stopped, I explicitly make time (five to ten minutes) for anyone who wants to stick around and ask a question in a safe, non-recorded space. I should also note that I'm not the only one responding to questions and debugging code. There are usually a few students who graciously serve as a kind of first line of defense for handling questions. Before the pandemic, we also had anywhere from four to six students physically attend class. While their primary interface with the class is much the same as the other synchronous students (they bring their laptops and log into Zoom), something about that physical proximity encourages them to be among those "first responders" to questions. I was always grateful for their presence.

As for the live coding session itself, I tend to create a new, blank iPython notebook in Google Colab for each lesson. Before writing a single line, I share the notebook out to the class by pasting a view-only link in the Zoom chat. This is especially helpful once we've written enough code to spill over the confines of my shared screen, as it allows students to scroll around and look at the code in context as we write it. I then do my best to type the code in myself, one line at a time, so we can discuss what's happening. What's great about this is that I'm bound to make mistakes when typing things out. I often go to run a snippet of code to find that I've misspelled a variable name or forgotten a colon. This presents an opportunity to demonstrate how to parse the esoteric error messages the Python interpreter spits out for the purpose of debugging code. Typing things in manually also, of course, ensures that the pace is sufficiently slow enough to discuss the step-by-step nuances of my choices.

Another benefit to typing things out like this over, say, pasting in a pre-written script, is the fact that students will inevitably ask interesting questions I could not have foreseen, leading me to modify (or even drastically overhaul) how I'd originally planned on writing the code for the purpose of exploring their avenues of inquiry. Being improvisational in this way helps imbue the act of coding with a sense of play. It also enlists the students into the creative process so they feel a sense of ownership over the code we make together.

This "slow motion" approach to the pedagogy of code, however, has its limitations. Once we get far enough into the weeds of a particularly complex script with a lot of moving parts, there's simply not enough time to talk through every line. This is especially true once we start tackling things like NLP. I always register a moment of discomfort from my students as we kick things into a higher gear – a discomfort often accompanied by notable attrition in terms of class attendance. This transition is painful for me, as I feel like I've cold-heartedly left people behind in the name of delivering on what I've agreed to cover via the semi-contract of the "topics of interest" survey. Over the years, however, I've noticed that the vast majority of attrition occurs with TAMU-affiliated students who haven't paid to take the class. This suggests to me that once we reach the point where study and practice outside of class are necessary in order to keep up, the people who drop out are the people who were there only so long as class is conveniently self-contained in that 9–11AM time frame on Fridays. As a way to compensate, however, for my inability to narrate every line of code in a live session, I spend around two hours meticulously commenting within the script, at times writing several paragraphs of explanation before a given block of code.

Once I've wrapped up our live coding session, dismissed the class, asked Kayley to stop the recording, and hung around for any last-minute troubleshooting, I gather together any sharable materials that were covered that day. This might include the Google Slide deck I used during my lecture, any important links I might have referenced, and of course the link to the iPython notebook we worked on together, replete with my copious comments. I then compose an email to send on the P4H listserv and share everything out. I also ensure that, within our course's shared Google Drive folder, a folder for that day is created and versions of those materials exist there as well. This wrap-up email is important, as it provides those who are taking the class asynchronously with the resources referenced by the videos, and also offers a ready opportunity for students to reply with any questions. Those questions filter in throughout the week and tend to be about problematic snippets of code. I do my best to respond within 24 hours.

Kayley here. After stopping the recording for this morning's P4H session, I keep an eye out for the notification from Zoom that the video recordings (one video for the first half of class, another for the second half after the break) are available for download. Once they're ready, I download them to my computer and do a quick review to make sure everything looks and sounds right. I then upload those videos (as well as the chat transcript) to our P4H Wordpress site and let Nancy know they're ready.

It's Nancy. While I've received Kayley's notification about the videos and transcript on Friday afternoon, I won't make them available on the P4H site until Monday morning. The reason for this has to do with setting expectations. Historically,

it's not always the case that whatever video conferencing platform we've used for P4H (and there have been many) is able to make the recordings immediately available after a class session. And sometimes, due to technical difficulties during class, videos require editing (asynchronous students don't want to sit through troubleshooting Zoom issues). As such, our policy is that videos will be posted on Monday morning after Friday's class, giving us ample time to adjust as necessary.

It's Monday now, so I find the videos Kayley has uploaded, embed them on a special, password protected page on our P4H Wordpress site (only the current semester's students know the password), and then send out a notification on our P4H listserv. Aside from this weekly chore, I will receive inquiries from students about the course. A few of these are content related, so I'll forward them to Bryan. Most of the questions directed to me, however, are administrative. Occasionally, a student will come to the realization that they've bitten off more than they can chew, and want to know what their options are for dropping the course. If they want to drop before the third class session, our policy is to provide non-TAMU affiliates a 90% refund of their registration fees. Some students are concerned about how their lack of participation will affect their "grade" or their ability to receive a course completion certificate.

Because P4H is a continuing education course, it isn't accredited, so we never assign grades to participants. We also choose not to keep tabs on a given student's participation in any way. Given all the modalities of participation, it would be a difficult enough task, for instance, to determine whether an asynchronous student has watched all the videos. We simply take it on good faith that our students are getting what they can out of the course. We do, however, offer a course completion certificate for any enrolled student. These aren't sent automatically – a week before the last class session, I send a notification out on the listserv letting students know they can request the certificate. Usually about half of the students request them, and for some of them it's an important piece of documentation, as certain institutions require the certificate in order to reimburse participants for their registration fees.

While tracking student performance remains outside the scope of P4H, we're very much interested in tracking our own performance. The Friday after our last session, I send out a survey where we ask participants to provide ratings on specific metrics related to the instructor, content, and overall experience, while also providing a space for broad feedback and comments. As with most feedback surveys, we typically only receive about a 5% response rate. We nevertheless pay close attention to these metrics – we go over them during a CoDHR project meeting and discuss strategies for improvement.

Kayley here! With the P4H dance thus concluded, there's a palpable sense of relief in myself, the instructor, and of course Nancy. Before long, other duties will flood in to fill the time vacuum left by P4H, but until then, there's a celebratory tone to the wrap-up session during our project meeting. As we review what worked well and what needs attention, I think about my favorite moments of the dance, and at the risk of sounding sentimental, I'll share what that looks like as a way to bring

things to a close. It's one of those things that isn't readily reproducible – it's hard to describe, and it either happens or it doesn't, but I recognize it when I see it. It's the moments when the instructor has hit a stride and the students are really getting it. The weird distances inherent in the virtual space of the video conference melt away and are replaced by comradery. Students get excited about how this will help them in their projects and start sharing details about their work – there's a kind of exuberance, in other words, about the horizon of possibility opened up by things clicking into place just so. I know this happens in other contexts of learning, but when it happens in P4H, it makes all the effort and emotional energy totally worth it.

Notes

1 Because lecturers already employed by our university tend to be salaried for 100% effort, any direct compensation above that amount must go through several layers of approval (including the dean's office and the office of the dean of faculties), and that approval is not guaranteed. This process proved so time-consuming and unreliable that all parties prefer compensation via research funds.
2 Procedural programming can be considered a subset of "coding" that is oriented around providing step-by-step instructions for the computer to execute. This is opposed to other forms of coding like creating TEI or HTML markup, which is oriented around presenting or encoding data.

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3 From Curiosity to Importance

DH Workshops for Teachers/ Researchers

Miriam Peña-Pimentel

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How does a digital humanities workshop differ from a workshop that simply uses Information and Communication Technologies (ICT)? DH not only proposes the use of digital tools and content, it also incorporates appropriate methodologies for each humanistic discipline using said technologies. This suggests a critical approach to their use that appeals to novices as well as "expert users" of said tools. It suggests the requirement of adapting tools and methods to the particular needs of each research or teaching program. Reflecting on two workshops offered to different audiences, this chapter suggests how we can adapt digital humanities workshops to meet the needs of specific communities and their goals. What do teachers, researchers, and Continuing Education participants need from an Introduction to Digital Humanities workshop and how do we meet those needs?

Creating a specific workshop in DH within the humanities realm is difficult, as most of the humanities faculty relates to "technology" as a means of communication, not necessarily as a tool to produce research or develop a course program. To date it is necessary to link it to a humanistic discipline and generate knowledge of both areas together, using DH methodologies and tools as a complementary tool. In a course about literature, for example, tools for text analysis and NLP are still regarded as "illustrations" to clarify a point of view or a critical analysis and not as a methodology and analysis process in itself. At the National Autonomous University of Mexico (UNAM), these issues are problematized by the need to expand and diversify the educational offerings and professional training programs to "include knowledge about the use of technology as part of the curricular structure of the study plans and programs in which it is relevant as part of the academic training" (Facultad de Filosofía y Letras 2017). How we should go about doing so is left to the faculty. While the offering of workshops that include the name "digital" in the title has increased, they have been oriented towards workshops whose themes include the use of technologies rather than their critical application, theories, and methods. Courses about how to use ICT in either in-person or online formats have become

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the way for the faculty to keep up to date. These courses, though, are centered on how to use Google Drive tools or how to model a course using Moodle. This has caused a methodological confusion in which administrators tend to view the inclusion of Information and Communication Technologies (ICT) in the classroom as digital humanities, but without the critical positioning of the use of technologies or the methodological support of the digital humanities that professors, researchers, and students need. Each humanistic discipline has particular methodologies and procedures. Depending on each area of study in which a DH teaching project is developed, the link that will be established between both forms of teaching and the content of the workshop must vary with each discipline (e.g. it is more likely to use XML-TEI for academic critical editions, such as it is usual to relay into 3D modeling for archaeological reconstructions). There is a difference between workshops that promote the use of ICT and DH. As Paul Fyfe (2011) points out:

> [p]erhaps the most common shortcoming of digital pedagogy is how frequently it gets conceived in terms of instructional technology. For many teachers, especially early- or non-adopters, digital pedagogy is often presumed to be just something that uses electronic tools or computers. This is unsatisfying as it often limits the teaching to the extent of its tools. Two familiar problems arise. First, if the tool you have is a hammer, it is tempting to treat problems as nails. If presentation software makes it easy to share lecture notes, the lecture hall can turn into a place for showing bullet points instead of teaching. The second problem is treating technology as merely a tool: something that accomplishes a task you were already doing, but with (electro-) mechanical advantage. For the pedagogy, not much has changed.

Thus, ICT or pedagogy alone cannot meet the needs of professors, researchers, and students. Instead, it is the critical lens of digital humanities that must be deployed within workshops to meet the needs of UNAM audiences. As Cro and Kearns (2020) propose, "steeped in a methodology that values collaboration, creativity, and digital literacy, DH is perhaps most successful in helping students to consider critically the potential for interdisciplinary, cooperative, and generative approaches to cultural and literary studies." Anchoring digital humanities to institutionally established disciplines is not perceived so much as a limitation, but rather as an opportunity to highlight the importance of incorporating new methodologies and knowledge production processes in consolidated disciplines.

In "Acculturation and the Digital Humanities Community," Geoffrey Rockwell and Stéfan Sinclair (2012) present the description of a workshop created specifically to teach DH, in which they propose a model that differs from the traditional model of university teaching. A workshop starts with the creation of a specific project and requires students to work together. The development of the workshop focuses on the creation of capacities by using tools that complement each other and advance in a degree of specialization. The workshop is based on the creation of competencies: the student has a series of skills applied at the end of each module and the theory that is taught is put into practice in a real project. The main objective is teamwork

where students have a shared specific goal from the beginning. Students must have knowledge of more than one discipline in order to develop the required competencies and thus are directly interdisciplinary. Despite the fact that everyone works for the development of the same project, teaching is done from back to front. We work towards a hypothetical goal, such as the digital publication of the results of the project. To reach this goal we begin by creating a list of the necessary contents (articles, archive documents, etc.) and a list of methodologies (text labeling, document digitization, descriptive metadata). Then we review the skills we have, and if we are missing any, we pause to train ourselves in that skill. Occasionally, in the middle of training, we realize that the methodology we are learning can be applied to other materials in our corpus. When this happens, we go back to the original hypothesis and rethink the project if necessary. This process leads us to also rethink the final product and its visualization/dissemination (Rockwell and Sinclair 2012).

Humanities professors generate knowledge, following a series of well-established and delimited processes that will lead them to disseminate knowledge in a traditional format: academic article, monograph, teaching materials. The knowledge produced is evaluated by peers and is disseminated through specialized journals and academic publishers; maintaining a cycle of production-consumption within an academic elite and leaving aside the population outside it. Not only are research groups infrequent, there is also a tradition that they are monothematic and with little room for interdisciplinarity. Therefore, the inclusion of models "outside" those already known or the use of digital tools is considered too far removed from traditional forms of study. Academic freedom offers the teacher the possibility of modifying their class program in such a way that it covers not only area teaching, but also trains students in the use of technologies; however, there is a commensurate need for a continuous updating of programs, for teachers, in the methodologies, themes, tools, etc., of the digital humanities. However, this inclusion can be perceived as "threatening" for the development of traditional studies. For this reason, the workshops we carry out have two general objectives: a) to show the potential that the incorporation of DH methodologies and tools has for the advancement of humanistic studies, and b) to show that these can be complementary to traditional forms but that they can also exist independently of them. Therefore the "disruption" of traditional studies will only take place to the extent that the researcher/teacher wishes; with academic freedom and DH we are not fighting for a competition, we are looking for a coexistence of models.

At UNAM, DH is the umbrella of practices and methodologies that combine humanities studies and digital practices. At an institutional level, taking into account that UNAM is the most important university in the country and that its Development Plan (UNAM 2017) establishes training and updating of study programs with tendencies towards "digital," it must have teachers and researchers – who the methods and debates of each one of the subjects they engage with – develop capacities that place them at the educational forefront. They must make adequate use of the tools and resources at their disposal, among which are digital repositories, digital research projects, etc. They also must be participants in debates related to the use of resources and tools and the implications that these have both for education and

for their professional performance. Given the importance of staying up to date with technologies and methodological approaches, digital humanities workshops are the central means of meeting the needs of teachers, researchers, and students.

Introduction to Digital Humanities Workshops at UNAM

The flexibility of Continuous Training programs and academic freedom allows the renewal of the contents of their courses, allowing the introduction of innovative topics in university classrooms, through the training of the teaching staff, which generally produces research.

This chapter explores four workshops:

1 The Introduction to Digital Humanities workshop offered twenty contact hours spread over four to five days (part of the Teacher Update and Improvement Program (PASD)) from 2016 to 2018.
2 The Introduction to Digital Humanities workshop offered twenty-one contact hours over seven weeks (part of the UNAM Continuing Education Program) in 2019 and 2021 which is open to both UNAM staff and the general public.
3 The Development of Digital Projects in the Humanities workshop.
4 Introduction to Digital Humanities sponsored by Continuing Education as both in-person and a virtual offering over twenty-one hours and seven weeks.

As this chapter explains, the Continuing Education workshop built on the successes of previous teacher and researcher training workshops, broadening the audience to the general public.

In the Introduction to Digital Humanities workshops, content includes epistemological reflections and, of course, practices and analysis of digital resources and tools for research and teaching. Participants read Digital_Humanities (Burdick et al. 2012) to learn about aspects of pragmatics of digital pedagogy and the institutional aspects that teaching in DH entails. The Introduction to DH workshop had four basic objectives: to introduce participants to the main discussions about the use of DH tools and models applied to research and teaching; to encourage reflection on the methodological problems related to the construction of knowledge in digital environments; to become familiar with different digital tools for humanistic research; and to design a digital research or teaching product. This was accomplished by providing general theory on digital humanities and different perspectives and uses in Latin America compared to the rest of the world. We highlighted research and education projects that were reviewed from their theoretical conception to their structure and final publication.

The workshop Introduction to Digital Humanities was carried out in two parts each session: theory and application. In the first part, we reviewed theory and methodology and explored a project that exemplified those specific approaches. In the second part, we investigated digital tools used in the development of the revised project in order to find a similar tool that would meet the needs of the humanities faculty at UNAM. We reviewed each of the tools and their technical

descriptions and compared similar tools with the intention of selecting the one that was more accessible in its use to non-advanced users.

This first workshop was aimed mainly at professors and teaching assistants of humanities majors at UNAM, which offers almost twenty undergraduate and postgraduate degrees in humanities ranging from Greco-Latin studies to geography, as well as drama, literature and intercultural studies. The personnel who were enrolled were professors who were familiar with the development of proposals and the development of approaches; they knew their objects of study, the guidelines and norms of publication and of the processes to follow, both for research and teaching. The workshop was designed so teachers and their assistants could incorporate digital humanities methodologies into their academic courses and programs. It also emphasized the use of digital tools that could help them interact with their students. Projects included as examples in the curriculum all had a teaching component and were focused on the creation of educational content and materials, such as Pleiades (Bagnall and Talber 2016, pleiades.stoa.org) and 3D archaeological reconstructions. We also reviewed geolocation applications and projects (Vizzuality, carto.com), glossaries, and literary and linguistic text tagging projects (Navarro Colorado 2019), among others. We distributed and shared teaching materials online to encourage reuse among faculty (Álvarez Sánchez and Peña Pimentel 2021, elaborahd.unam.mx). Many of the teachers reused the end of the workshop publication that was created (such as Lucotti 2016). They continued adding content and developing new exercises as they implemented it in their lessons, thus complementing the reading/working materials for students.

The second workshop, Development of Digital Projects in the Humanities, was offered in conjunction with the General Directorate of Academic Personnel (DGAPA; UNAM 2016), and aimed at an audience of researchers from the institution. UNAM has two main models of academic staff: professors located in the main faculty who focus on teaching and institute-based researchers. The binary is not absolute: teaching-focused professors also participate in research, while researchers also contribute to student training, particularly at the postgraduate level. We created the workshop Development of Digital Projects in the Humanities for academic staff who undertake research (either as professors or institute-affiliated individuals). Similar to the Introductory workshop, this workshop ran over a week and spanned twenty hours. It was recommended but not mandatory that those attending the workshop had previously taken the Introduction to Digital Humanities workshop or that they had general knowledge about this field of study. We realized that the majority of researchers and teachers who came to the workshop Development of Digital Projects in the Humanities sought to solve specific humanist problems, or digitize or publish humanities research, rather than caring about the nature of digital humanities itself. Therefore, we incorporated a consulting space to support these researchers in creating a final product that can be published electronically once the development process is finished.

Unlike the Introduction workshop, the Development of Digital Projects in the Humanities workshop did not have a fixed review of tools and methodologies, since those registered for this workshop already had research projects or had

already contemplated a publication format. Our main focus was on getting published or getting support for the publication of an ongoing research project, or in the case of initial projects to be able to plan it from the beginning and manage to finish the workshop with a well-developed proposal that would contain the purposes of the research, the materials to be researched, the publication tools, and the technical and economic requirements to achieve the publication. We only reviewed tools and methodologies that were specifically used for the development of the projects of those enrolled. We dedicated the first part of the workshop to get to know the participants; in this introduction they comment on the projects they are working on or that they plan to develop throughout the workshop; we review the needs they have and adapt the contents of the workshops so that they are useful to them. Thus, in this second workshop it was not possible for us to present a single program that would be repeated year after year; instead, each was customized to that particular group of attendees. For this reason, the researchers who entered our workshop ended up delivering a proposal to their respective faculties, with the intention of obtaining institutional support to develop the project in the long term. The instructors in charge of this workshop shared their own eLaboraHD project (elaborahd.unam.mx).

Both the teaching focused Introduction to Digital Humanities workshop and the research-focused Development of Digital Projects in the Humanities workshop had outstanding results. These workshops fostered a community of academics interested in the knowledge of a relatively new field of study in the Mexican Academy. They recognized the value of this type of approach to humanistic studies and sought to implement what they had learned in their classrooms and in programs for undergraduate and graduate degrees. We learned that humanities teachers and researchers in Mexico, particularly at UNAM, had been interested for years in developing different academic projects and products. They wanted to leave the structure of the book and the printed article behind to enter the world of electronic publications. Turning to digital projects allowed researchers to approach their objects of study in a novel way and share these results in a different way. The community of humanities researchers interested in creating digital projects continues to thrive and welcome peers well after the end of the workshop.

Following on the success of these first two workshops, years later, we partnered with the university's Continuing Education program at the Bibliographical Research Institute (Instituto de Investigaciones Bibliográficas-UNAM 2022) to offer a version of the Introduction to Digital Humanities workshop. Continuing Education is open to the general public, who develop or carry out educational or research work, but who are not necessarily part of the National University Community and each university unit manages the courses it offers through this model. Those attending these workshops were editors, architects, humanities graduate students, copyright lawyers, heads of institutional repositories, academic research support technicians, and so on. We ran the Continuing Education Introduction to Digital Humanities workshop twice: once in person and once virtually as a result of the COVID-19 pandemic. The group registered in this workshop was

much more diverse than those in the previously mentioned workshops; therefore, the content of the workshop had to expand and include issues of digital culture, but also of practices and use of electronic resources for the creation of own resources with adequate licensing. The theoretical contents of the Continuing Education workshops were similar to our previous; we began with a chronological review from the beginning of the digital humanities until the inclusion of the latest discussions on this field of study. We include the discussion around digital humanities in the global south and we focus the greatest number of examples on Latin American and Mexican projects that ranged from basic teaching and digital literacy to national projects, such as the creation of institutional repositories. The diversity in the type of workshop participants made it necessary to make much more specific and detailed remarks than in the previous workshops. This variety of registrants redirected us to begin the workshop by recognizing the group, identifying the needs but also the objectives that they wanted to solve, and what they wanted to obtain from this course. This recognition of the group changed the program significantly since we could incorporate all the theoretical parts in a similar way to the previous workshops, but without deepening the discussion or theoretical debates. We gave more importance to the recognition of tools and the development of our own methodologies, adapting recognized methodologies, recognized processes and using them with our own examples, from each of their areas and each of their professional tasks. We had to take into account that most of the workshop participants were not completely familiar with virtual environments for the development of their professional work. Thus, we started from a standpoint of developing basic digital literacy with a review of operating systems, differences between open access and free software, differences between educational materials and research materials and, in many cases, training to use some of the tools that we would review.

In the Continuing Education workshops we had the advantage of having a week between sessions; therefore, it was possible to leave tasks in which the registrants would experiment over the course of a week. At the start of each week's session, participants raised the questions, uncertainties, and problems that emerged from learning a different and completely unknown methodology. Unlike the previous workshops, the Continuing Education workshops required much more supervision on the part of the workshop instructors, more individual work with each of the attendees, and personalized follow-ups.

Given the public audience in the Continuing Education workshops, we expanded our discussions of the use of licenses, especially by promoting Creative Commons licenses and public domain licenses. We also explored copyright according to Mexican law. We reviewed much more in depth the differences, advantages, and disadvantages of free software versus proprietary software, and what one or the other implies for the development of a National Project. In the virtual version of the Continuing Education workshop, we also focused much more on distance collaboration tools. As they were attending a completely virtual workshop during the pandemic, many of the attendees needed to know about collaborative tools and platforms, both to carry out their teaching or professional work, as well as to publish

digitally without the need for a formal editorial process. Many of the attendees of the virtual workshop were employed as support for the academic development of curricular programs, not as teachers but as administrators and providers of work environments.

Lessons Learned

The joint experience of these two types of workshops (Introduction to Digital Humanities in 2015, 2016, 2019, and 2020 and Development of Digital Projects in 2015 and 2016) resulted in conclusions regarding the usefulness and need of these types of workshops for the staff of the university. Many of those attending the workshops were still challenged by virtual environments and new software and platforms. The combination of traditional disciplines, methods, and their outputs conflicts with models of digital humanities which encourage interdisciplinarity, updated methods, as well as new models of publishing and scholarship. These traditional disciplinary approaches must be balanced against the innovations of digital humanities without one exceeding the other. Thanks to these workshops, we were able to open a much more honest discussion about incorporating the digital into humanities classrooms and research projects.

Traditional scholarship is based on a model where a researcher creates their resources and passes them on to the editorial department or the educational management department to disseminate the information. The author, once they hand over their materials to these individuals, practically loses control of the product. Thanks to the knowledge of simple text mining tools, tools to create and generate licenses, and digital publishing tools, researchers and professors can disrupt that transfer of power. They felt much closer and much more in control of the products that they generated throughout the workshops and beyond. With digital publication models, researchers and teachers feel in control from the choice of their study material to the final publication of the article, the book, the website, etc. Digital publications for teaching and research should be institutionally valued for the purposes of employment, promotion, and tenure; and as of yet, there are no guidelines for digital projects to be evaluated at UNAM. We seek institutional support for this work, especially the academic and administrative work needed to sustain this type of research. One of the long-term intentions is to obtain Digital Object Identifiers (DOIs) so that they have their own identifier, which in addition to granting the creators a unique record, has academic value to grow their curriculum.

Ultimately, the success of these workshops, we believe, lies above all in the recognition of a field of study that, although relatively new to Mexico, has made clear the need for a change in the way we approach humanist studies. We need to grow this knowledge and share it with our students to enable them to lose their fear of technology and the digital world. In the not-too-distant future, we hope that digital humanities in Mexico will become one more degree or postgraduate degree and stop being complementary to the different fields and humanistic studies.

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4 Digital Humanities Workshops in India

Effective Organizing Pedagogies and Sustainable Contributions to Academia

Justy Joseph, Kaviarasu P, Jyothi Justin, and Nirmala Menon

Digital humanities workshops are places of production and means of making that convene students, researchers, faculty, and technologists for intensive, analytical, pragmatic, and collaborative experiences in developing digital humanities pedagogy and practice. They are designed to facilitate empirical development, research competence, problem-solving, skill-building, and experiential learning on new applications in the field (Brooks-Harris and Stock-Ward 1999, 5). We define digital humanities workshops as a multidisciplinary arena of theoretical and methodological training on digital tools related to humanities and social sciences. DH is still an emerging field of scholarship in India, as Nirmala Menon and T. Shanmugapriya (2020) note. Based on the recent rise in DH practices across the sub-continent, DH has shifted from an "incipient stage" to a "progressive stage" with academic DH programs and courses offered by IIT Indore, IIT Jodhpur, Jadavpur University, Pune University, FLAME University, IIIT Hyderabad, Presidency University Kolkata, EFLU Hyderabad, and Srishti Institute of Art, Design and Technology, Bengaluru.[1] Given the nascent state of the field, digital humanities workshops act as an essential format in inculcating DH into the academic curriculum of Indian institutions. This chapter analyzes eight selected digital humanities workshops conducted by Indian institutes in an attempt to understand their contribution to the pedagogy and development of DH in India in terms of curriculum development, training, and teaching (see Table 4.1).

We deployed Sufi et al.'s (2018) tripartite classification of workshops. The first category, exploratory workshops, aids participants to better understand a topic and its associated problems, current solutions, and future challenges. They comprise mainly of lightning talks, lectures, keynote speeches, and discussion sessions. The second category, learning workshops, teaches a particular skill set, application, or technique including practical exercises with assistance provided by the workshop organizers. The third category, multidisciplinary workshops, brings together individuals with common or intersecting interests in order to collectively build and solve problems. The DH workshops we analyze sit at the intersections of all these three categories. They are multi-disciplinary, collaborative, and committed to establishing the field with learning of skill sets and tools as a primary expected

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Table 4.1 Description of the workshops

No	*Title of the Workshop*	*Organizer*	*Length*	*Mode*	*Link*
1	Winter Institute in Digital Humanities: An International School	The University of Saskatchewan (USask) and Indian Institute of Technology Gandhinagar (IITGN)	14 days	Offline	https://hss.iitgn.ac.in/k-event/winter-institute-in-digital-humanities/
2	International Workshop on DH: Theory and Praxis	Jamia Millia Islamia	7 days	Online	www.jmi.ac.in/upload/EventDetail/workshop_eg_2020december12_18.pdf
3	Mapping Digital Humanities Practices in/on India: Access, Tools, and Criticism. A Digital Humanities (DH) Workshop	IIT Indore and Jamia Millia Islamia	3 days	Online	www.jmi.ac.in/bulletinboard/eventmodule/latest/detail/2391/27760
4	MHRD SPARC Sponsored Three day Workshop on Digital Humanities	Pondichery University and IIT Kharagpur	3 days	In-person	https://backup.pondiuni.edu.in/news/three-day-workshop-digital-humanities
5	Digital Heritage Workshop	Lancaster University and IIT Indore	3 days	Online	www.lancaster.ac.uk/dighum/digital-heritage-workshops/
6	AI Narratives in India	Ahemedabad University, Leverhulme CFI Cambridge	2 days	Online	www.ainarratives.com/india-programme
7	Memories and Mixed-Media: A Workshop on Curating Controversial Media Accounts of the 1970s	IIT Jodhpur and IIT Ropar	2 days	Online	https://iitj.ac.in/dh/index.php?id=events&num=706&item=IRDP_DH_events
8	Curating for Culture Workshops	Curating for culture	variable	Online and in-person	https://sites.google.com/curatingforculture.com/curatingforculture

outcome. The selected workshops mostly aimed to initiate an interdisciplinary dialogue on digital humanities.

The workshops were proposed by the respective organizers as a primer to digital humanities scholarship in India aiming to open threads and potential areas of reflection like textual scholarship, social media and ethics, theories of digital media, network society, archiving, open-access digital scholarship, tools, project management, diversity and digital humanities, text encoding initiatives, geographic information systems (GIS), and spatial humanities. The hands-on sessions of the workshops selected for this study focused on GIS, Python, R, ATLAS.ti, and other annotating tools.

Though all the workshops except one were organized online, the primary organizers are from different parts of the country, especially from institutes of national importance and renowned universities. The workshop speakers were deans, directors, professors, writers, artists, Senior Research Fellows, and professionals like journalists, training managers, and technologists. Out of the selected speakers 24 percent are employed by the National Institutes of India, 12 percent at State Universities of India (Presidency University, University of Hyderabad, Ahmedabad University, and CIDASIA), 9 percent at private colleges or Institutes of India (Flames University, BITS Pilani, Shiv Nadar University), 37 percent were employed at foreign institutes (Lancaster University, University of Saskatchewan, King's College London, University of Pennsylvania, Lingnan University, University of Maryland, University of Toronto, and Michigan State University), and 18 percent were from non-academic professions. The speakers list demonstrates the availability of interdisciplinary facilitators to cater the research, academic, and digital skill set development of participants from different fields.

The eight workshops described here (see Table 4.1) vary in length (two to fifteen days) and the year of organization (from 20192021). The workshops were conducted in different formats (virtual and in-person) and varied in pedagogical and learning outcomes which in turn offer insights on how these variables affect the quality of the workshops. Along with our personal experiences we turned to these workshops' websites, brochures, and recordings (where available) to collect the relevant details. To supplement this information, we prepared and circulated three separate surveys for the organizers, speakers, and the participants of the selected workshops in order to undertake an analysis of pedagogy and value of digital humanities workshops, and to ascertain the challenges faced by organizers, speakers, and participants. Our survey method also helped to overcome the temporal and geographical constraints, as they were circulated via email and WhatsApp to organizers, speakers, and to the targeted participants of the study. Conducted over about two months, the key questions of the survey were limited to productivity of the teaching and learning platforms (online and offline), pedagogy of the workshop, research and academic adaptability of the DH tools taught, organizational and infrastructural challenges, and the academic contributions of the workshop. Survey findings are reported here in percentages and in a generalized pattern in order to maintain confidentiality that was promised to the participants of the surveys. The participants of the selected workshops who responded to the

survey belonged to technical institutes (either central government institutes like IITs, IIMs or private ones like VIT etc.) with most numbers from the organizing institutes themselves. This is directly a reflection of the lack of private and public institutes offering DH courses in India. Ninety percent of the respondents belonged to Humanities and Social Sciences (HSS) departments, which sheds light on the need for more interdisciplinary and multidisciplinary collaborations in the field with more focus on aiding researchers in identifying their work within the field and helping them to develop necessary technical skill sets ranging from a rudimentary understanding of available digital tools to basic programming skills, depending on their learning stage.

As most of the workshops were conducted post COVID, online platforms were extensively used by the speakers and organizers. The workshops (both online and offline) utilized Zoom, Google meet, YouTube, Microsoft Teams, DeXTER, and other multimedia presentation software for teaching DH. Twenty-one percent of the respondents (speakers) were fully satisfied with the performance of these platforms. Whereas the speakers commented that interaction is critical in teaching digital tools, "with the shift in online format both the span of attention and interaction has severely been affected." They observe that poor internet connectivity, lack of deeper engagement, and hard labor in educating the students about DH tools are the biggest hindrances in delivering DH workshops online. They remark that "one of the primary necessities of DH workshop[s] is in-person interactions especially when it involves learning tools." The only benefit of the online mode that the respondents appreciated was the recording of presentations, which could be shared, archived, and accessed in the future. Forty-four percent of those who completed the in-person workshop were fully satisfied with the introductory sessions to the DH tools (hands-on or otherwise), significantly higher than the online participants. Fifty percent of the organizers responded that online platforms have accentuated the organizational challenges, while 16 percent thought that it was the same online or offline. Though online platforms transcend geographical boundaries and ensure better participation, in person was more important for introducing people to the digital humanities: "it really helps to have experts in the room to help students when they get stuck. Online tutorials and workshops might be an excellent option to build skills after the initial workshop."

Major objectives identified by workshop organizers and speakers included, but were not limited to: familiarizing the participants with the DH tools for text mining, qualitative and quantitative analysis; aiding them in preparing methodology and research questions for future DH projects; generating curiosity and understanding towards this emerging field; enabling the participants to experience cross-disciplinary work; exposing the students to leading digital humanities projects; and discussion with theorists, scholars, and makers of such projects and archives.

Most of the organizers stated lack of interested participants who had basic familiarity with digital humanities, and they have used submission of abstracts as one major criterion for selection of participants. Two of the selected workshops were part of an existing curricular DH course and thus were made compulsory for students and researchers from the host institute. Workshop speakers and leaders

used interactive and collaborative methods, engagements with participants, group activities, crowdsourcing, critical approach, and demonstrative methods for delivering the content. For instance, a speaker on interactive essays used Mentimeter (menti.com) to interact with the audience and to collect their responses while navigating the participants through the digital literary platform *ncase.me*. In another workshop session discussing digital literary archives and TEI for representing books and manuscripts, participants were encouraged to work with a mentor to identify and discuss potential data/texts, sources, and approaches for digitization. Assignments, blog posts, discussions, and group presentations were included in the workshops to assess the learning of the participants. While in one workshop where digital tools like Voyant, Atlas.ti, and NLTK were introduced, the participants were encouraged to employ these tools in small scale projects, and they gave short presentations on the same. In another workshop participants were directed to write blog posts on their learning from each day.

It was also observed that the participants who attended the workshop with a longer duration responded positively towards the questions related to pedagogy and impact whereas those who attended the shorter two-day workshop reported the need for more in-depth, intensive training. Most respondents suggested focused, intensive hands-on training as a way to improve the workshop. Additional suggestions included beginner level programs, interactive sessions with more focus on the participants, and workshops with a strict theme or tool-oriented approach. Iantorno notes, "Just as pedagogy has begun to receive more consideration in print and online, workshops and other events examining how scholars can incorporate DH in the classroom have increased" (2014, 141). Despite this increased attention on DH pedagogy, formats that have long been central to DH knowledge transmission – including workshops – have not been explicitly addressed in the literature. These shorter format sessions share some of the same challenges encountered in longer format semester courses, but they also have unique considerations that must be addressed (Powell and Kong 2017).

As the survey demonstrates, training on a tool needs sufficient time allotment. Sixty-four percent of organizers and speakers noted that the time allotted was adequate for the session. Seven percent felt the fixed time was insufficient to deliver the prepared material though they managed to complete within the limited time. The other 28.6 percent of respondents of the speakers' survey gave mixed response, all of which resonated with the following statement:

> There wasn't enough time to let the audience try the tool themselves, teaching a programming language to the participants who do not have previous experience in coding would require more strategies, space and time. That said, it would have been much more productive if we had more time to teach text mining through Python modules. Hard to cover the basics of XML editing in an hour and a half.

These responses state that digital humanities workshops should require a specific strategy in allotting the time for the hands-on training on DH tools. Most of the

workshops had a quarter of its schedule assigned for training of tools, but when it comes to teaching programming languages (Python in this case) and/or QGIS, it requires a longer time frame for the learners to acquire the basic skill set when compared to web based readily usable tools. Allotting equal time frame and focus, adapting the same pedagogy of teaching, and not setting a wider and disparate prerequisite for learners in advanced sessions like programming and similar subjects have negatively affected the fecundity of the workshops.

The major challenges cited by the respondents include the resistance to the digital and disparity in digital skills amongst participants: "Humanities Scholars come from diverse disciplines, so most of them had a confusion about the meaningfulness of DH with respect to their discipline." Secondly, their fear of interacting with a computer-loaded term like coding which is similar to what Phillips, Bordelon, and Terry Kapral (2023) cites as "technology anxiety" in chapter ten. Developing their positive attitude and breaking this 'fear of technology' was a challenging aspect.

There was also a wide gap between the technical skills of the participants, which made the delivering of the content and hands-on training inefficient. Categorizing the workshops into different streams for beginner, intermediate, and advanced learners will solve the issue of disparity to a certain extent. Sometimes the speakers who are only tangentially connected to digital humanities have also crucially affected the focus of the workshop. Lack of a shared vocabulary with the audience, bypassing the digital and delivering the traditional humanities content, inaccurate assumptions about the learning level of the participants and lack of pragmatic methods to teach tools have further resulted in participants not receiving the promised outcomes from the sessions. A generalized approach towards the selected themes from the speakers has also hindered the focused learning opportunities of the participants.

Absence of necessary open-source tools is another infrastructural issue noted in responses. The organizers commented,

> We used only freely available DH tools online. . . . We are unable to provide demonstrations [of] DH tools which are behind the paywall. Both the facilitators and participants do not have access to such tools, which prevented our exploration in DH methodologies and tools.

In online mode the challenge of accessibility was even higher due to technical fallibilities and lack of proper internet connectivity.

Sixty-two-point-five percent of the offline participants received infrastructural support (systems, storage devices) from the organizers and host institute whereas 37 percent had to find their own infrastructural support. While using pay walled software like ATLAS.ti and/or Arc GIS and/or accessing repositories and archives that provide access based on location, the participants had to find their own resources. Half of all workshops were undertaken with no DH lab or similar necessary infrastructure in the institute; of the half that had DH labs, the lab was only introduced as an infrastructural support 20 percent of the time. This again

indicates the lack of infrastructure, funding, and collaboration opportunities in Indian humanities departments that can facilitate DH practices.

DH workshop speakers responded unanimously that the DH workshops can be an effective accompaniment to DH courses in India. Workshops are a much-needed entity in India. It helps multidisciplinary research and learning using DH tools. It also provides a sustainable resource on the subject through archived training. As rightly stated by a respondent, "Hands-on training should be considered as an integral part of DH education." Workshops are also critically important as they connect multiple professionals and academic communities of India. Thus, "We need more workshops in DH in order to engage interested students and scholars in hands-on training, group projects and learning DH tools and Methodologies." Eighty percent of the respondents stated that the workshops addressed the DH practices and issues in India and all of them stated that they were introduced to existing DH scholarship/practices/projects in India. The participants were directly introduced to working DH projects by speakers who are active DH practitioners. There were assignments encouraging exploring DH projects and archives in India. The workshops provided secondary reading materials and other resources on DH scholarship in India, and also through platforms like DHARTI (the Digital Humanities Alliance for Research and Teaching Innovations, dhdharti.in) and DIGRA India (Digital Games Research Association, digra.org/the-association/chapters/digra-india/) participants were introduced to opportunities to further interact with digital humanities stakeholders. The workshop participants were positive about gaining new perspectives on DH and were able to identify the different features of the field like "multidisciplinary aspects," sub-fields, tools, practices, and criticism as well as its limitations in Indian academia. All respondents indicated that they were introduced to DH organizations in India (like DHARTI). Eighty percent reported that they have indulged in DH (or related activities) activities post-workshops.

The digital humanities workshops analyzed here have been mainly confined to premier institutions – the organizers, speakers, and participants belonged to IITs, central and foreign universities. The same people were repeatedly organizing, speaking, and participating in digital humanities workshops. This raises questions about accessibility and visibility of DH in general and digital humanities workshops in India as state universities and colleges are yet to be included in DH practices. The DH community in India should harness the available resources from higher education organizations and funding agencies to organize digital humanities workshops at the state level that will result in equal and open access. DH workshops in India (especially the ones offered by the premiere institutes) should therefore encourage and cater to the needs of, as one respondent put it, "participants without institutional funding for travel and accommodation, and those without prior training in digital humanities." The digital humanities workshops and their related details should be sustainably recorded (only a few workshops had recordings of the sessions and workshop details available open access). The tools and themes of the workshops are also repeated, which leads to an inefficient use of the already scarce resources available to DH. The responses collected also reveal that there has been an emphasis on spatial and textual tools in the selected workshops

thereby indicating the need to shift the focus of future workshops to further unexplored fields as well. If digital humanities workshops should act as a sub-field in itself to advance DH in India, then it should be both open and accessible to more and it should focus on the less explored tools and practices as well instead of repeating existing workshop models. The entry into the Indian DH community (institutional and non-institutional) post training should be smooth and transparent thereby allowing the aspiring DH practitioners to understand the process easily. While reaching out to researchers irrespective of demographic divisions being the primary concern, the DH community in India should also focus on the current infrastructural limitations and spreading out to the global digital humanities community. Developing a theoretical vocabulary that can delineate DH in India grounded on principles of open access, multilingualism, inclusivity, and collaboration is also of significant importance.

Note

1 According to the latest report from the Ministry of Education (AISHE 2019–2020), there are 1043 universities, 42343 colleges, and 11779 stand-alone institutions of higher education in India.

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5 Challenges and Opportunities of Digital Humanities Training in South Africa

Moving Beyond the Silos

Anelda Van der Walt, Juan Steyn, Angelique Trusler, and Menno Van Zaanen

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Humanities and social sciences (HSS) scholars have largely been excluded from conversations around data science-related research infrastructure and human capacity development (HCD). Globally these conversations and training opportunities typically include stakeholders from traditionally more computationally intense disciplines such as science, technology, engineering, and mathematics (STEM). In South Africa, there has been a significant focus on astronomy and computational biology or bioinformatics. Even though pockets of excellence in digital humanities (DH) research exist in South Africa, most HSS scholars are unfamiliar with foundational digital and computational research methodologies, applications, and training opportunities. They are also not actively involved in relevant professional and social networks. This chapter describes the challenges faced in DH human capacity development in South Africa, highlights the critical role of partnerships in guiding DH training in the country, and outlines the design and implementation of ESCALATOR, a program for developing a DH community of practice (https://escalator.sadilar.org).

Despite several "research data science" training programs in South Africa, most are either exclusive or inaccessible to a non-STEM audience. As elsewhere, collaboration between HSS departments or research groups and more computationally inclined groups is not standard (Macfarlane et al. 2017). Because the South African DH and Computational Social Sciences (CSS) community is small, learners from HSS who gain access to computational and digital research training opportunities are often isolated and have limited access to mentors or role models with computational backgrounds. The shortage of foundational digital and computational experience and interdisciplinary research within HSS research has inhibited the adoption of DH and CSS research methodologies and practices. DH and CSS

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research projects with an African focus are limited and often not visible online. The same holds for localized African learning resources such as textbooks, tutorials, and course material. Learners regularly request examples that apply to their research focus and to which they can relate culturally. Fulfilling the request is challenging, given that available DH research project portfolios and online educational resources are primarily geared towards the Global North.

Additional systemic challenges relate to infrastructure and resources. Universities falling in the category of historically disadvantaged institutions (HDIs) and rural campuses are still relatively under-resourced in terms of internet access and computer laboratories with poorly set up low-capacity personal computers and limited support and training. This, combined with issues around electricity supply, has aggravated these challenges. Since 2008, South Africa has experienced intermittent periods (known as "load shedding") when the electricity grid shuts down due to supply shortages (Mbomvu et al. 2021). In early 2020 the COVID-19 pandemic exacerbated these challenges. Scholars suddenly had to work from home, mainly without backup power and internet connectivity available on campuses. As elsewhere, in-person events were banned and planned follow-ups and support for regional and institutional-based communities of practice were halted. In-person events transitioned to virtual formats, and opportunities for informal networking during workshops and break times were lost. These interactions are critical to building rapport with participants and gaining contextual insights, and the changed landscape of workshops severely hampered HCD initiatives around the world. When hands-on computer-based training (originally designed as in-person training) was converted to virtual contexts, instructors struggled to observe progress and intervene when necessary. This was specifically true for instructors with little experience teaching in a virtual setting. The disconnect between learners and facilitators during online training can cause learners to fall behind even faster than in person, negatively impacting motivation and increasing dropout rates. Furthermore, due to the absence of technical support and participants generally having limited experience with digital scholarship, less material is covered during online training compared to similar in-person events (Elsheikh et al. 2020; Paropkari et al. 2020).

In 2016, the South African Centre for Digital Language Resources (SADiLaR) (https://sadilar.org) was established as one of 13 infrastructures funded through the South African Research Infrastructure Roadmap (SARIR), a Department of Science and Innovation project. SARIR provides long-term funding and support from the government, which was previously unavailable for DH and digital language resources (Roux 2016). SADiLaR consists of a hub connected to nodes at four academic institutions, an inter-university partnership, and a research council. The center runs two programs: a digitization program that facilitates the creation, management, and distribution of digital language resources for the 11 official South African languages, and a DH program that promotes innovative computational and digital methodological approaches through human capacity development and community building initiatives. SADiLaR collaborates with various stakeholders and builds on foundations laid by multiple initiatives in South Africa and abroad. Since its inception, the center has hosted over 90 activities, including seminars,

workshops, language celebrations, and networking events. Activities ranged from introductions to DH to training on specific tools or methodologies required for more specialized work such as natural language processing or digitization workflows. However, despite numerous HCD activities hosted by SADiLaR and other entities over the years, pervasive uptake of foundational digital tools and computational practices within HSS across the academic landscape remains elusive. Many siloes still exist, with computational and digital expertise mostly available outside of HSS or within pockets of excellence in DH situated in isolated, small groups around the country. Note that the South African context is not so different from that in Mexico as described in "From Curiosity to Importance: DH Workshops for Teachers/Researchers" (Chapter 3 in this volume).

SADiLaR partnered with initiatives with complementary goals and approaches to address several challenges outlined earlier. One of the most vital partnerships has been between SADiLaR and The Carpentries (https://carpentries.org). Since 1998, The Carpentries has provided foundational coding and data science skills training to researchers worldwide. This non-profit organization has an international reach: over 3000 workshops, including over 80000 learners and 3200 volunteer instructors in 61 countries. The Carpentries' interdisciplinary teaching and learning community consists of researchers, students, and professional staff from various research and support environments. Carpentries workshop curricula are published under open licenses and are collaboratively developed by the community (https://carpentries.org/workshops/#workshop-curriculum). In South Africa, the first locally organized Carpentries event was held in conjunction with the inaugural eResearch Africa Conference in 2014 (Duckles 2014). The community received The Carpentries' training model with great enthusiasm. Its interdisciplinary, inter-institutional nature provided fertile ground for new collaborations and the sharing of different perspectives. Through instructor training and mentoring (which became available in 2015 in South Africa), the local community has grown to 61 active instructors. These instructors represent various disciplines, institutions, and geographic locations. Over 100 workshops and 12 instructor training events have taken place in South Africa alone, with SADiLaR acting as an organizational, funding, or training partner for many of these events.

From 2014 to 2018, South African Carpentries workshops were funded through small grants and contributions from different sources (Lino et al. 2018). In 2018 the Rural Campuses Connection Project phase 2 (RCCPII) initiated a year-long national HCD program (https://tenet-rccpii.github.io/rccpii-2018/). This program, funded by the Department of Higher Education and Training, included 14 Carpentries workshops and instructor training activities. Several networking activities also took place to support the development of a community of practice in the country. Although The Carpentries community originally primarily consisted of STEM scholars, the learning practices and curricula have been adopted and adapted by members of the HSS community. SADiLaR and RCCPII joined forces in running workshops to grow digital and computational skills amongst librarians and HSS scholars. In 2019, SADiLaR became a formal Carpentries member, culminating in establishing a Regional Consultant position within The Carpentries organization. The role evolved into an African Capacity Development Manager, supporting

and growing the volunteer instructor community and increasing the impact on researchers across Africa (Trusler 2019; Jordan and Trusler 2021).

The most successful approach to addressing issues outlined earlier has been joining forces with complementary initiatives and existing communities, including partnerships between SADiLaR, the RCCPII project, The Carpentries, Talarify, and various emerging or existing initiatives. Through collaboration with RCCPII, available funding resources from SADiLaR and the RCCPII were leveraged to reach broader audiences and host larger-scale events. For example, CarpentryConnect, held in 2018, brought together 108 learners, instructors, and helpers from South Africa (van der Walt and Steyn 2019). These events facilitated interdisciplinary, interinstitutional conversation and collaboration, which has been identified as one of the challenges in growing DH capacity. Working with existing communities of practice offers ways for workshop participants to stay involved, get support, and grow their networks in between workshops and events. In The Carpentries community, learners can, for example, access instructor training (through SADiLaR's membership) or join workshops in a more informal capacity as helpers. Numerous community-held positions exist and offer members opportunities to continue learning and growing their social network. The African Carpentries community's monthly virtual meeting provides a space to meet peers and discuss workshops, opportunities, resources, and challenges. Due to the interdisciplinary nature of The Carpentries, HSS scholars can learn from those in other disciplines who have more experience with adopting computational practices. The partnership also provides access to internationally collaboratively developed resources, such as recommendations for running better online workshops. Before the pandemic, most Carpentries' workshops were run over two or three days as interactive, hands-on events, but the pandemic necessitated a shift towards virtual workshops. The recommendations, compiled by The Carpentries Core Team members during the early stages of the COVID-19 pandemic (https://carpentries.org/online-workshop-recommendations/), were trialed during South African workshops, and a group of local instructors refined the guidelines to be more contextually relevant.

Challenges of HCD Activities

Even though collaborations such as those between SADiLaR and The Carpentries provide many opportunities and benefits, the current state of affairs in South Africa related to the information and training in DH requires consideration of a wide range of challenges. Challenges related to communication and marketing of events, opportunities, funding, and resources have continuously been highlighted as a problem by stakeholders (i.e., organizations and individuals interested in contributing to the community of practice) and potential beneficiaries (those mentioned earlier as well as researchers, lecturers, students, librarians, IT staff, etc.). Organizational mailing lists, newsletters, Slack workspaces, targeted emails to collaborators, social media, websites, and communication channels of partners, funders, and other stakeholders are used to disseminate information. However, we continuously observe the absence of scholars who previously indicated an interest. The breakdown of communication channels has been identified as a big challenge. Important information

either never reaches those who could take action, or relevant information arrives too late (e.g., after a deadline or when an event has already taken place).

This challenge, unfortunately, does not have an easy solution. It requires a continuous process of sharing information with all stakeholders. Direct communication channels to beneficiaries must also be established. Even when information reaches the right audience, significant percentages (even up to 50%) of registrants do not show up or drop out before events have concluded, frequently with no prior notice to organizers. These no-shows and dropouts are observed for in-person and virtual events. The latter is hit harder. No-shows lead to other learners losing opportunities when participant numbers must be limited to maintain a balance between instructors, helpers, and learners. If participants do not cancel in time, funding (provided by hosts such as SADiLaR and other collaborators) is wasted when accommodation, travel, or catering expenses are incurred. The reasons for not showing up or leaving early range from no excuse to family responsibilities or shuffled priorities at work at short notice, although no clear pattern has emerged. In the past, support has been obtained from line managers or faculty heads to nominate participants and formally support nominees to participate in events to address no-shows. However, this approach can only be employed for high-profile activities and not every workshop or webinar due to the administrative burden. Implementing a no-show fee has worked for events that had considerable costs associated with it, such as funded attendance of in-person workshops or conferences.

The South African government has significantly improved university internet access over the past years through organizations such as the Tertiary Education and Research Network of South Africa (TENET) and the Rural Campuses Connectivity Project (RCCP). However, due to the pandemic and occasional campus shutdowns, students and researchers regularly depend on mobile data to continue off-campus work. Since mobile data is notoriously expensive in South Africa, data costs further exacerbate the challenges people face in accessing online training and resources (Moyo and Munoriyarwa 2021). Despite the perceived benefit of online HCD activities regarding accessibility and cutting costs (related to logistics and travel), online events probably excluded more people than anticipated. Participants are regularly disconnected from virtual meeting platforms due to unstable internet connections, impacting their ability to follow along, which is disruptive to other participants and the instructor(s). Diverse infrastructural access (mobile phones, laptops, desktops) also means each participant has a unique experience that instructors or facilitators have to consider when planning hands-on activities. To address limitations in internet access and related data cost issues, the Code for Science and Society Event Fund (through a Mobile Data Connectivity Platform service provider) sponsored mobile data bundles to workshop participants. This platform was instrumental in distributing an estimated 300 GB of mobile data to 71 attendees over 19 African network providers during CarpentryConnect South Africa 2021, an interdisciplinary research data science training and networking week hosted online by The Carpentries and collaborators, including SADiLaR (Trusler 2021).

In contrast to in-person events, group sizes of online hands-on workshops were reduced considerably, from up to 40 participants to between five and 15, to allow

optimal interaction between participants and instructors. In the South African context, which requires planning for low bandwidth setups, cameras are mostly switched off during the events, limiting access to visual cues and body language. "Zoom fatigue" has also diminished participant numbers and contributed to high drop-out rates despite a sustained appetite for participating in events (Nadler 2020). One of the approaches employed to address "Zoom fatigue" involves moving from full-day events to shorter events spread over extended periods including a sufficient numbers of breaks. A delicate balance needs to be struck between the duration of an event to facilitate an appropriate level of learning and fitting events into participants' schedules. HSS scholars who have minimal prior exposure to computational thinking skills (such as abstraction, algorithms, data, problem decomposition, parallelism, debugging, and testing and control structures (Zhang and Nouri 2019)) and digital scholarship often indicate that the time allocated to learn new skills during workshops is too short.

Over the years, various solutions have been tried and implemented to improve accessibility and inclusivity of both in-person and online events. SADiLaR and other partners have funded travel, accommodation, and workshop-related costs (conference venue fee, conference package, catering) for in-person events. Most virtual events offered by SADiLaR are recorded and made available online under open licenses (with permission from participants and instructors). Collaborative, cloud-hosted documents are used during events to support note-taking and encourage information and question sharing. Participants without access to second screens are encouraged to use mobile devices to view lecture notes or join the virtual meeting platform. When time is limited, participants introduce themselves and interact via collaborative documents rather than speaking during online meetings to minimize delays with muting and unmuting and decrease connectivity challenges. Limiting the number of technologies or platforms used during sessions simplifies troubleshooting and enhances participation.

In 2020, SADiLaR considered the challenges and the impact of its HCD activities. The activities shifted from face-to-face workshops to online activities, primarily due to the COVID-19 pandemic. Additionally, a growing understanding of the community's diversity in terms of digital skills and resources indicated a significant need for foundational awareness and training. This knowledge led to a shift from specialized, hands-on training to more general events, which provide an overview of the scope and possibilities of DH along with an introduction to foundational knowledge and skills. SADiLaR launched the ESCALATOR program to tackle the different challenges and create a scaffold for HCD activities.

The ESCALATOR Program

ESCALATOR, established in 2020, is much more than an HCD program (https://escalator.sadilar.org). It includes opportunities for networking, knowledge sharing, prolonged engagement, mentorship, and more. The program offers a welcoming environment for communities ranging from digital scholarship novices to experts in DH, CSS, and other computational fields. The overarching goal of ESCALATOR is to support the development of an active and inclusive community of practice in digitally and

computationally enabled HSS research in South Africa. This goal is similar to that of the Digital Humanities Summer Institute (DHSI), described in "The Digital Humanities Summer Institute (DHSI): Community Training Toward Open Social Scholarship" (Chapter 1), although the focus here is specifically on the development of a community of practice in South Africa, whereas DHSI has a more international focus.

According to Wenger and Snyder (2000), a community of practice supports the development of members' capabilities and builds and exchanges knowledge. Through sustained interaction, members of communities of practice develop a shared repertoire of resources, including ways of solving recurring problems. ESCALATOR explicitly includes scholars and practitioners across a wide range of disciplines. The program is open to academics as well as librarians, archivists, IT professionals, research support staff, and teaching and learning professionals. A theory of change outlines the linkages between the ESCALATOR program's inputs, activities, outputs, short- and medium-term outcomes, and the desired long-term impact (van der Walt, van Zaanen, and Steyn 2021). The program design is based on experience with related initiatives (van der Walt et al. 2016) and lessons learned through similar programs in other disciplines such as computational life science (Pawlik et al. 2017; Stevens et al. 2018; Batut et al. 2021). ESCALATOR is built on openness and agility. Documentation is published under open licenses via Zenodo, an open science repository, and the program website. It implements a monitoring and evaluation strategy and incorporates feedback from the community, allowing for program adaptation as information becomes available. ESCALATOR's community of practice is foreseen to develop in a hybrid fashion, offering opportunities to connect, share knowledge, and collaborate in person and using virtual platforms through synchronous and asynchronous interaction. This approach will encourage broader participation across the country and provide an opportunity to develop special interest groups within and across disciplines, institutions, and geographical boundaries.

The ESCALATOR program builds on two cornerstones: a regional stakeholder map and the digital champions initiative. The **regional stakeholder map** project started in December 2020 with a survey of local organizations and initiatives involved in DH and CSS. The project aims to capture information about existing South African researchers, projects, datasets, tools, publications, training initiatives, learning resources, and more. Information about the state of DH and CSS in South Africa allows potential students to identify undergraduate and postgraduate training programs, assist researchers looking for collaborators, help funders motivate where funding should be directed, and encourage faculties and departments to identify gaps and opportunities in research and teaching. A workflow to capture and share the information via the ESCALATOR website was designed and is currently under development (Figure 5.1). This offers various access points to the data and interactive visualizations to cater to different stakeholders' specific needs.

The second flagstone activity is the **digital champions initiative,** which aims to support HSS scholars in growing their digital and computational skills and networks and eventually becoming champions for DH and CSS in their communities. The initiative addresses a large number of the previously identified needs and obstacles. By supporting the development of local champions at each of the 26 public universities and other academic institutions, the initiative will improve

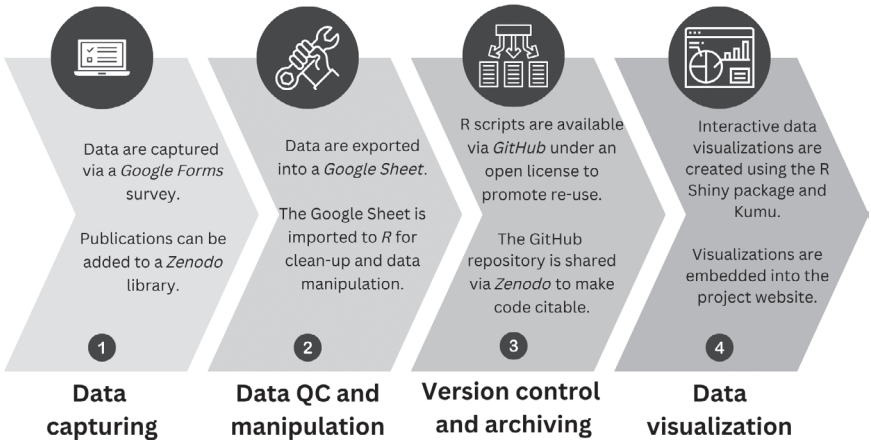

Figure 5.1 A schematic representation of the draft DH and CSS stakeholder map workflow. Data about South African projects, researchers, learning materials, courses, data sets and repositories, software, etc., are captured via Google Forms. The data will be manipulated via R scripts, available from Github, and archived in Zenodo. An interactive Shiny app allows the community to explore the data through a web interface, while a Kumu network visualization will also be available. Research articles can be added to an open collection in Zotero (van der Walt and Treasure 2022).

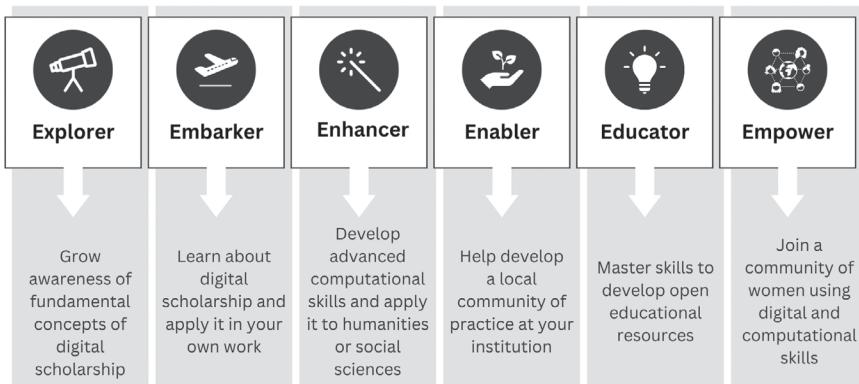

Figure 5.2 The initial six mentorship tracks of ESCALATOR'S Digital Champions Initiative. New tracks will be added as the need arises.

connection and communication within and between these communities. It will also explicitly provide networking and collaboration opportunities for HSS scholars and scholars from computational domains. The digital champions initiative contains various mentorship tracks customized to the needs of subgroups identified in the community (Figure 5.2). The team is collaborating with, and learning from, existing mentorship programs in the areas of Open Education (OE4BW

International online mentoring program), Open Science (Open Life Science), Machine Learning (Indaba Mentorship Programme), Research (CORE Africa), Data Journalism (WanaData), and more (van der Walt 2021; Treasure et al. 2022).

The **Explorer** track offers a low-barrier-to-entry opportunity to learn about foundational concepts in digital scholarship as a self-paced program with a monthly meetup where scholars can ask questions, participate in discussions, and meet peers and members of the program team. The **Embarker** track focuses on scholars who already have some concept of digital scholarship. It will take the form of more structured two- to three-month engagements where participants apply digital scholarship practices across the research lifecycle. We aim to develop this track together with partners who can deploy it with their students. The **Enhancer** track is for scholars looking for one-on-one mentorship for specific skills such as natural language processing or digitization of artifacts. In 2021 a virtual Python and R for HSS study group was launched as a precursor to the Enhancer track. The **Enabler** track assists those in support roles (e.g., knowledge brokers) in learning best practices for growing and supporting communities of practice. The target audience includes professionals in academic libraries, maker spaces, IT departments, research support offices, and faculty administrative and academic staff supporting research HCD. The lack of contextualized (localized) DH educational resources hinders learning in South Africa. The **Educator** track, developed with the South African UNESCO Chair on Multimodal Learning and Open Educational Resources (OER), tackles this. Educator is open to scholars interested in developing localized OERs for DH in South Africa and is based on the OER Fellows program (North-West University) launched in 2021. According to a report published by the Organization for Economic Co-operation and Development (OECD), women are still far less likely to use technology (Borgonovi et al. 2018). The **Empower** track explicitly encourages women and other underrepresented individuals in computing to join the community and become active members.

ESCALATOR offers activities and opportunities to support the development of a community of practice beyond the stakeholder map project and the digital champions initiative. The variety of tracks provided through the digital champions initiative and other activities that form part of ESCALATOR aims to broaden the target audience. It gives community members multiple learning pathways and opportunities to be involved at different personal and professional development stages.

Conclusions: Future Directions for DH HCD in South Africa

Building social and professional networks and establishing a community where members actively contribute and co-create takes many years. Although SADiLaR took the lead in developing a community of practice, the aim is to move from a transmissive community of practice to one where members will increasingly play a role in defining the community of practice. ESCALATOR provides a scaffold for community members from all 26 public universities, the relevant research councils, and other sectors who play a role in DH and CSS to collaborate, contribute and shape the community and its activities. Much has been learned about hosting successful

online hands-on workshops and interactive community-building events. There will be an emphasis on virtual activities for the foreseeable future, but pandemic permitting, more in-person events will be hosted. However, virtual joining opportunities should be available for participants unable to travel. The focus of workshops and webinars will be better aligned with the community's needs through enhanced communication and closer collaboration with a broader audience. Already, new channels and methods are being explored to ensure information about opportunities and resources reaches end-users on time. ESCALATOR aims to become an all-inclusive platform and community for DH, CSS, and related initiatives in South Africa. It is not a competitor but rather a unifier to bootstrap investment of both time and money and catalyze innovation and collaboration in these fields. Relevant existing and emerging projects, tools, and resources (including datasets and learning materials) across all spheres, including government, academia, industry, and civil society, will be showcased through the program.

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6 Data, Tools, Platforms, Cooperative Platforms, and Thematically Linked Data

Chao-Lin Liu

CONTENTS

Acknowledgements 72

The development of digital humanities in Taiwan began as computing resources became more available and research activities blossomed that sought to preserve physical documents and artifacts in digital forms. From there, sharing the digital forms of the original items for searching and studying via the Internet or via digital museums became an obvious next step. Important landmarks include a project for digitizing a large corpora of classical Chinese between 1984 and 1990 followed by a project of digital libraries between 1998 and 2001. Then came the two stages of the National Digital Archives Project between 2002 and 2012. Starting from 2009, the National Taiwan University started to host the annual international conference of digital archives and digital humanities. In 2013, the topic of digital humanities debuted as a main research direction for soliciting proposals at the Ministry of Science and Technology (**MOST,** www.most.gov.tw/?l=en). In 2014 and 2017, the MOST and the Ministry of Education (**MOE,** https://english.moe.gov.tw/mp-1.html), respectively, started to support education activities for encouraging and disseminating the concept of digital humanities. (Hsiang and Tu 2011; Hsiang, Lu, and Liu 2017; Lin 2017; Svensson 2010). Collectively, these activities encouraged the growth of digital humanities in Taiwan. Pedagogical and learning events served as a crucial though relatively inconspicuous component of this growth. Successful stories of digital humanities were presented and discussed in academic contexts to attract more researchers, educators, and students to the new opportunities.

Considering the development of digital humanities in Taiwan, this chapter provides a context for the gradual expansions and the current shape of the educational activities including workshops funded by the MOST and the MOE. Before we begin to introduce the workshops in Taiwan, we note that the Taiwanese Association for Digital Humanities (TADH) is a member of the Alliance for Digital Humanities Organizations (ADHO). Therefore, TADH will pass information about the workshops that are organized by other constituent organizations of ADHO to her members, such as DHSI (Siemens, Arbuckle, El Khatib 2023).

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The Department of Humanities and Social Sciences of the Ministry of Science and Technology (www.most.gov.tw/hum/en) started to support workshops for digital humanities in 2014. Until 2017, this series of workshops was announced under the name of "DH in Taiwan"; Ping-tze Chu of the National Tsing Hua University organized the series.[1] The Research Institute for the Humanities and Social Sciences (www.hss.ntu.edu.tw/en/index.aspx), which was directly funded by the MOST, began to fund the series of DH workshops and to host the related information in 2017.[2] Chu continued to organize the series until Jenjou Hung of the Dharma Drum Institute of Libra Arts took over the mission in 2020. This series of DH courses consists of half-day and full-day workshops that focus on a wide range of specific topics. The list of previously and currently offered workshops is very long.[3] They cover software tools for specific analysis including social network analysis (e.g. Gephi), geographical information systems (e.g. Excel2Earth), text analysis (e.g. TaiwanDH and Voyant), text annotation (e.g. MARKUS); general technical concepts including databases, International Image Interoperability Framework (IIIF), corpus linguistics, text mining, Text Encoding Initiative (TEI), style analysis, and Natural Language Processing (NLP); open and free sources of research materials, such as CBETA (Chinese Electronic Buddhist Association), CBDB (China Biographical Database Project), and TBDB (Taiwan Biographical Database); and specific applications of digital humanities research works that link to local history.[4] The series started to include courses for the platform DocuSky (docusky.org.tw/DocuSky/home/) in 2020, which is discussed in more detail later in this chapter.

The organizers of the series invited well-known research teams or their representatives to discuss and teach (or share) the methods or tools which they used or designed for their DH works. A major source of the speakers was the presenters in the annual meetings on digital humanities, the International Conference of Digital Archives and Digital Humanities. The invited speakers could offer their workshops many times in a year. Academic units (e.g. departments or colleges of universities) apply to invite the speakers to the host universities. If the application of the wish-to-host university is approved, the RIHSS, not the host university, is responsible for the costs of the workshops. The speakers can visit the hosts at the time and locations that are convenient for both the hosts and speakers. The lengths of the workshops are less flexible, and can be either half-day or full-day workshops. The workshops can be integrated into relevant university courses as a one-time meeting. As long as the hosts consider it necessary, it is possible to host multiple workshops in a semester to form a mini-course.

The audiences of the workshops or tutorial activities included university professors, students, and even amateur researchers. The successful applications and projects that were presented in academic contexts stimulated others to follow analogous paths for their own studies. Such motivations served as the basis for a wave of needs for tutorials for digital humanities. As we attracted more people to the field of digital humanities, we had more successful cases to invite more people to join us, thereby scaling up the field incrementally and recursively. University educators and students have complicatedly-related roles in this process. Students

of younger generations tended to notice the trends of digital humanities quickly and were more likely to explore the new promises, partially because of their own digital competence. In contrast, established university educators tended to stay with their original styles of doing research. In some cases, they worried that relying too much on possibly unreliable results that were produced with computational assistance might bring negative influences to the traditional culture of humanistic research. For example, it took time for people to accept the idea of using software tools and digitized texts in academic studies for the purposes of distant reading (Moretti 2000).

The focuses of the workshops may change year over year, depending on the available speakers and on the growing trends of digital humanities. The contents of the workshops can be designed for either graduate or undergraduate students. The format of the workshops usually includes both lectures and hands-on practices. When the workshop time is sufficient, participants may even use their own data in the workshops. The coverage of this group of workshops is broad so that hosts of different needs and interests may integrate whichever selections that they consider helpful. In addition to basic computer programming (Tarpley, Sumpter, and Hart 2023), teaching the use of databases is obviously an important category of workshop topics, e.g. CBDB, CBETA, CTEXT (Chinese Text Project), Kanripo, and Wikisource.[5] In such workshops, the emphasis is typically on the availability, downloading, and reading of the stored data. The annotation and/or the analysis parts are usually included, but might not be the main focus, depending on the length and audience of the workshops.

The definition of software tools is extensible. A tool may be designed for a very specific type of function: for instance, Gephi is for social network analysis, whereas QGIS (qgis.org) is a geographical information system. A tool set can offer a group of related functions. TaiwanDH and Voyant both offer selected functions or text analysis. They are software tools. It became clear in the years of our promotion of DH concepts that DH research works need more than just separated software tools and databases. It may be preferable to combine them in one working environment. A combined environment offers some additional opportunities. For one thing, it would be more convenient if, via an integrated mechanism, a researcher can access and investigate research materials from multiple sources and apply the analysis tools that are maintained at different websites. We should also offer personalized support for managing research materials including personal research notes, the text corpora, the images of artifacts, or the historical maps of cities. A *platform* is an environment that provides support for important works for doing research, including assessing, reading, managing, and analyzing data. A more full-fledged platform may support the management, publication, and exchange of the research results. Many, if not most, mentions of software tools are meant to refer to tools only for analysis and perhaps visualization. In fact, there should be no limit on the services that an excellent platform can provide. DocuSky and DASH (Digital Analysis System for Humanities, dh.ascdc.sinica.edu.tw) are two large platforms in Taiwan. They are developed and maintained by the Research Center for Digital Humanities (digital.ntu.edu.tw/) of the National Taiwan University and

the Academia Sinica Center for Digital Cultures (ascdc.sinica.edu.tw), respectively. These platforms have built interfaces that can accept data downloaded from the sources like CBETA, CTEXT, Kanripo, Wikisource as well as data generated by RISE and SHINE[6] or MARKUS. In fact, some developers of databases are adding the analysis tools to the original websites as well (CBDB, CBETA, and CTEXT), and are moving toward transforming themselves from data providers to platform providers. These platforms usually support a wide variety of functions for DH research, so they may take a longer time to learn. The DocuSky team organizes multi-day workshops, and offers half-day and daily MOST workshops. They were also invited to teach DocuSky in academic events in China. In addition to these tutorial events, the Taiwanese Association for Digital Humanities (TADH, http://tadh.org.tw/en/) organizes half-day or day-long introductory workshops for each of these platforms during the annual International Conference on Digital Archives and Digital Humanities.

Teaching participants how to use software tools is a common purpose for DH workshops. The designs of the workshops need to consider the backgrounds and needs of the learners, while most, if not all, of the workshops will attempt to let learners gain hands-on experience during the workshops. Take DocuSky for example, and we may find three typical types of workshops. The first type is fairly intuitive and typically takes a relatively short time to complete. It is fairly easy, for example, to teach learners the operations of tools directly. Hu (2018) showed an example for teaching learners how to use MARKUS and part of DocuSky tools to create a word cloud for a novel that was written in classical Chinese; Hung (2021) showed learners how to convert ordinary data files to the DocuXML format for DocuSky to do the further analyses. A more complete type of workshops would include a lecture part that provides the information about the technical background and the humanities research goals before teaching the operations of the tools. This may need a couple of hours or longer. For instance, Stanley-Baker (2017) delineated the construction of a corpus about Chinese medicines with MARKUS and DocuSky and its applications, and Hu (2022) showed the steps to build social networks with DocuSky. It is conceivable that we will need workshops that span multiple days to cover all of the tools available on a platform.[7]

The extended demands from separated tools and databases to platforms leap to an advanced level. Here, *cooperative platforms* represent a mechanism to share and link the data that are hosted by individual platforms or isolated databases (Bol 2018; Liu 2018c). Boosting the level of reachability to data helps researchers expand their scope of visions and potentially enhance the depths of their observations and conclusions. For example, the studies of history of East Asia, where people in China, Japan, Korea, and Taiwan might move around and their activities might appear in historical documents recorded in different languages and saved in the libraries in different countries, require cooperative structures and multi-country access. Software tools can help us identify the mentions of the same person in texts that were stored in different databases. Internationally cooperative platforms can also allow us to find and compare the viewpoints on the same historical events,

domestic or international, in the documents that were stored in different countries. For example, we may find information about some lost history about Taiwan in the historical documents stored in the Netherlands as the Netherlands once governed a large part of Taiwan between 1624 and 1662. This is also possible for the studies of comparative literature, in which researchers might be interested in the connotations that a certain word or a certain phrase, at the level of the surface structure, would induce in readers' minds of different cultures.

Given the growing number of sources of open data on the Internet, we hope that software tools can help researchers identify data that might be relevant for the research themes of the researchers. Dynamically linking the relevant data that are stored at different platforms can be a very challenging technical goal, but that will offer powerful assistance to humanistic research.

Figure 6.1 sketches the fundamental ideas of cooperative platforms (Liu 2018a, 2018b). On the left, a platform may receive data from multiple sources. The platforms may assist to certify the quality of the sources; convert the received data to a standard format so that tools of different sources can process; and perhaps handle the proprietary rights, including payments, authorization, and authentication, if a data source is not completely open and free. The triangles in the red rectangles indicate the software agents for these interfacing steps. We call the external data "theirData" in Figure 6.1. The platform may have the flexibility of allowing the researchers to adopt external tools to work with the tools of the host platform. Similar to using external data as "theirData," the platform certifies the tools (maybe for issues of information security and system security), and may have to pay for the use of these external tools via the interface agents (shown as triangles again). The admitted tools will work with the tools of the host platform, and are shown as "ourTools" in Figure 6.1.

After obtaining "theirData" and "ourTools," the researchers can analyze their own data, shown as "ourData." "ourTools" may help the researchers analyze the contents of the data and link related information in "ourData" and "theirData" to produce the final "Results." The large rounded square, in Figure 6.1, that surrounds "theirData," "ourData," and "ourTools" indicates that there is a security mechanism that attempts to ensure appropriate usages of the proprietary data and tools. The ideas of cooperative platforms were discussed among many

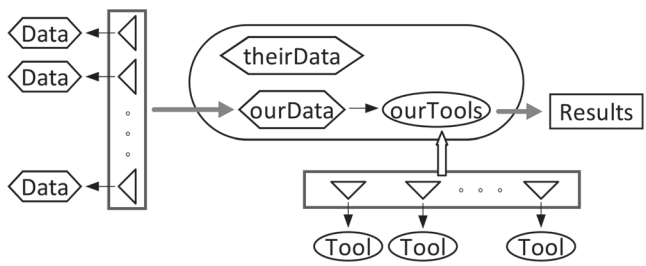

Figure 6.1 A possible mechanism to link data and tools while protecting proprietary rights

participants of the 2018 International Conference on the Cyberinfrastructure for Historical China Studies.[8] Many providers are realizing some of the ideas of cooperative platforms; for instance, CBETA, DASH, DocuSky, MARKUS, and Rise and Shine are collaborators.[9] Therefore, concepts about cooperative platforms are already being disseminated and applied in actual workshops and research activities.

Most of the DH workshops, tutorials, or even programs for degrees assume the participating students are from the humanities. Although that might be statistically correct, that is a biased and imperfect misconception. Even when a group of researchers is working on a closely related topic, their viewpoints and needs may differ. The best tools for them may have to be customized, and that may require the software designers to understand the actual needs of the ongoing research. The best designers for tools for DH are those who know the humanities, not treating historical and classical documents as "just everyday data" for example. In the multi-day workshops of the DocuSky, the organizers would ask the participants to use their own data in the workshop courses. The participants would have to try to conduct their research works while learning to use the DocuSky. The tutorials do not encourage the use of textbook examples in the hands-on sessions. Through this practical endeavor, the participating researchers may learn the benefits of doing research on a cooperative platform, and they may also find something more to expect from the software functions. The DocuSky organizers ask the participants to offer their critiques of the DocuSky so that the designers of the DocuSky can improve the system based on real-world experiences and demands.

The influences of the concept of digital humanities are expanding strongly based on nearly four decades of contribution and endeavor of the pioneers in Taiwan. The offering of academic programs for degrees is not very common yet, due to the rigid regulations for offering academic degrees in Taiwan. The availability of open databases, software tools, platforms, cooperative platforms, tutorials, workshops, and courses is being funded in a healthy manner. The formats and subject contents of the workshops will have to evolve with the escalated needs and visions of the increasing number of current and future humanities researchers who adopt digital assistance.

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Notes

1 For more on DH in Taiwan, see https://sites.google.com/a/ptc.cl.nthu.edu.tw/dhintaiwan/home?authuser=0 and https://dhit.kktix.cc/.
2 See, for instance, information on the RIHSS tutorial series: www.hss.ntu.edu.tw/model.aspx?no=411.
3 The list of MOST workshops (in Chinese): www.hss.ntu.edu.tw/upload/file/202001/0d203ea6-4d98-4f69-9a3b-1ae98acafbb4.pdf
4 These resources are available as follows: Gephi, gephi.org; Excel2Earth, http://excel2earth.blogspot.com/2015/06/43-excel2earth.html; TaiwanDH, https://sites.google.com/site/taiwandigitalhumanities; Voyant, voyant-tools.org; MARKUS, https://dh.chinese-empires.eu/markus/beta; IIIF (International Image Interoperability Framework): https://iiif.io; TEI (Text Encoding Initiative): tei-c.org; CDBD (China Biographical Database Project), https://projects.iq.harvard.edu/cbdb; CBETA (Chinese Buddhist Electronic Texts Association), http://cbeta.org; TBDB (Taiwan Biographical Database): http://tbdb.ntnu.edu.tw/.
5 For CDBD and CBETA, see note 4; see also CTEXT (Chinese Text Project), ctext.org; Kanripo, www.kanripo.org/; and Wikisource, https://zh.wikisource.org/ (in Chinese).
6 RISE (Research Infrastructure for the Study of Eurasia) and SHINE: www.mpiwg-berlin.mpg.de/research/projects/rise-and-shine-research-infrastructure-study-eurasia
7 See also the DocuSky YouTube channel: www.youtube.com/channel/UCLoyEGPnBrUjAnjT7mThH-A.
8 The International Conference on the Cyberinfrastructure for Historical China Studies was organized by Peter K. Bol and Donald Sturgeon of Harvard University: https://projects.iq.harvard.edu/cbdb/international-conference-cyberinfrastructure-historical-china-studies.
9 For details on the collaboration, visit docusky.org.tw and https://dh.ascdc.sinica.edu.tw/member/ (see the list of functions).

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Part II

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7 Views Through Student Lenses

How Workshops With Student Research Assistants Can Enhance a Lab's Research Program

Paul Millar, Maggie Blackwood, Geoffrey Ford, Davide Garello, Dorian Ghosh, Natalie Looyer, Donald Matheson, Caleb Middendorf, Kaspar Middendorf, Laura Moir, Clemency Montelle, Emanuel Stoakes, Christopher Thomson, and Mengjun Yu

From 2010 onwards, four quakes of magnitude 6 or greater shook the Canterbury region of Aotearoa New Zealand, with over 15,000 aftershocks. One hundred eighty-five people died and significant parts of the city of Ōtautahi Christchurch were either destroyed or required demolition, resulting in financial losses of an estimated NZ$40 billion. Since 2019, "'Kōrero mai. Tell us your earthquake story' – A longitudinal study of post-disaster narratives"[1] has been the focus of the Arts Digital Lab (ADL) at the University of Canterbury (UC)/Te Pokapū Aronui ā-Matihiko o Te Whare Wānanga o Waitaha and its research assistants. Supported by a 2018 grant from Aotearoa New Zealand's largest blue skies research funder, the Marsden Fund,[2] "Kōrero mai"[3] is a joint project between the ADL and the New Zealand Institute of Language, Brain and Behaviour (NZILBB, www.canterbury.ac.nz/nzilbb/). It seeks to study comparative disaster narratives, re-told after seven years, from a cohort of similarly affected participants who first gave their earthquake stories to the QuakeBox[4] – a shipping container initially deployed as a mobile recording studio in 2012 to create a "permanent record of the mindset of Christchurch people in the time after these disastrous events" (Walsh et al. 2013, 31).

In 2021, the final tranche of these recorded retellings was being linguistically transcribed and uploaded to the NZILBB's corpus analysis tool, LaBB-CAT (https://labbcat.canterbury.ac.nz/system/). Four of the RAs contributing to this chapter – Natalie Looyer, Laura Moir, Maggie Blackwood and Caleb Middendorf – were involved in this project. Work on "Kōrero mai" also generated two sub-projects requiring RA support, one around "Retelling Earthquake Stories" and the other to study "The Post-Quake Diaspora." Funding for both sub-projects came from QuakeCoRE/Te Hiranga Rū, the NZ Centre for Earthquake Resilience (www.quakecore.nz/). The aim of the "Retelling Earthquake Stories" project was to understand more about the impacts of re-telling traumatic narratives on "Kōrero

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mai" participants, and involved RAs collecting data via a questionnaire and associated conversation. Emanuel Stokes (Manny), Davide Garello and Dorian Ghosh worked on this project. "The Post-Quake Diaspora" project, which engaged PhD candidate Mengjun Yu, was a major literature and resources review, intended as a step towards securing funding for a larger study of post-disaster re-locators. Work on "Kōrero mai" had highlighted how big and largely invisible was the group of Canterbury people who had relocated after the earthquakes. It was considered that this group might be important, particularly in a future of increasing climate-related disasters, because so little seems to be understood about the extent to which the experience of recovery from a disaster is different for participants who move away from the disaster zone and re-start or re-invent their lives compared to those who remain.

This chapter arises out of a transformative seminar and follow-up workshop held in the ADL where RAs shared their experiences and reflections on the work. In gathering the teams' insights together, we are convinced that the work we produced as a lab was stronger the more we were able to build a work environment for the RAs that was stable, where care and self-care could be practiced and where ethical reflection was woven through.

The ADL has its origins in the 2011 UC CEISMIC Canterbury Earthquakes Digital Archive (CEISMIC) project. It was proposed that its success "as a model for post-disaster digital archiving" owed much to it being a combined "national federated archive and a bespoke [research] archive [QuakeStudies]" which "cemented a broad community of content providers." CEISMIC "insist[ed] on the use of open-source tools and the implementation of open access policies" (Smithies, Millar, and Thomson 2015, 33). Based on Urszula Pawlicka-Deger's classification of digital humanities laboratories, the Arts Digital Lab at UC is appropriately designated a "social challenges-centric lab" in that it is a space "created around people, social issues, and public engagement," which seeks "'new research methods, new lines of inquiry, and new ways of engaging with public audiences' . . . for tackling real-world problems and stimulating social changes" (Pawlicka-Deger 2020).

Developing the CEISMIC project through the lengthy and difficult post-quake period, there was often cause for us to reflect on the ways our digital humanities research practices were uniquely, even idiosyncratically, determined. We discovered that our research could not develop in any logical or predictable fashion in the post-disaster environment. At times the best of humanity, community, society and government was on display. The impression existed that anything was possible. At other times the sheer scale of the disaster, the inconsistent and seemingly endless recovery process, and the capricious nature of the bureaucratic response led to despair. The chapter on lessons learned after six years of work on the CEISMIC archive reflects this tension:

> Despite our many efforts to ensure fairness and equity in what we collect, CEISMIC over-represents the experiences of the articulate, the resourced, the controllers of media, the networked, the beneficiaries of various sorts of privilege, and the structures of power. The barriers to inclusiveness were never

> properly breached. . . . Technology, despite its remarkable powers, tends to only look where its owners or creators direct it. One of the greatest challenges . . . is how to be constantly vigilant to reach the nameless, faceless, silenced victims of any disaster. Such stories must be heard, and issues of fairness and equity must be addressed, if recovery from disaster is to be meaningful.
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> (Millar et al. 2019, 177)

As CEISMIC evolved to meet the teaching and research needs of a growing digital humanities program at UC, it made sense to set in place the more broadly configured Arts Digital Lab, still operating on principles of open source, open access, and collaboration. By 2021, the ADL encompassed a variety of digital humanities research projects, ranging from "The Canterbury Roll," a digital edition of a Medieval scroll (http://canterburyroll.canterbury.ac.nz/), to *Pacific Dynamics*, an interdisciplinary journal of Pacific research (http://pacificdynamics.nz/). Although the lab's research agenda had widened, the social-challenge dimension still dominated. This was due in part to ongoing commitments and researcher preoccupations, but also because the ADL is largely project-funded. Substantial external funding opportunities remained available to study the aftermath of the disaster; thus, the three research projects that this chapter refers to are all earthquake-related, and all depend upon scholar/student collaboration for success:

> CEISMIC could never have succeeded without a team of scholars and students with a shared commitment to the Digital Humanities aims and ethos. Indeed, the CEISMIC project was never a stand-alone digital proposal; it was tied to the introduction of Digital Humanities as an academic discipline at the University of Canterbury. . . . The initial CEISMIC team combined English academics, a Historian, a Linguist, and students with backgrounds in Fine Arts, Art History and Theory, English, Psychology, and the like. This team was united in the view that the thing that needed to be fore-grounded in the archive was the human experience, which led to a decision that every digital object would have human-curated metadata, even though it was a demanding, resource-intensive, time-consuming approach with such large collections.
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> (Millar et al. 2019, 169)

What began as a single seminar for RAs led to a highly productive follow-up workshop, and a commitment to integrate such workshops into the ADL's key activities. The seminar held in June 2021 was originally intended by ADL Manager Kaspar Middendorf to showcase the variety of projects the ADL was involved in to give students a fuller idea of what their fellow RAs were doing. Middendorf, who manages all student RAs, had been involved with CEISMIC since its inception and knew better than almost anyone the value that student RAs brought not only to discrete projects, but to the life and culture of the lab. They invited RAs currently working on the projects to prepare short (3–5 minute) seminar presentations on any aspect they found interesting about the project they were working on. Ten did so, seven of whom made their presentation notes available for this chapter.

All the participants were remunerated for the time this took. The RAs ranged from first-year students to a recent PhD graduate, and represented a wide range of majors, including Linguistics, Classics, Media and Communication, Gender Studies, Comparative Literature and Chemistry.

The RAs presenting to the seminar demonstrated a flair for storytelling, employing a range of rhetorical approaches to evoke recognition and empathy. This allowed them to establish their bona fides with regards to participating in the project(s) and presenting in the seminar. This often involved some form of positioning of themselves in relation to the earthquakes, the material collected, the project participants, the seminar audience, or even in relation to the ADL as an entity within the university. Mengjun and Natalie, who had worked on earlier projects, related their current work to previous project experience: Mengjun, for example, considered how the "Post-Quake Diaspora" project linked back to her assistance with QuakeBox interviewing, and with work "transferring earthquake stories . . . to the QuakeStudies website for long-term archiving." Natalie, as well as mentioning projects she had worked on earlier, connected her transcriptions of people's earthquake narratives with her own experience of being caught up in the COVID-19 pandemic, noting that "one of my own major lockdown memories is sitting on the couch transcribing quake story interviews!" (Looyer 2021). Like Natalie, Manny referred to personal experience to establish reasons for empathy with the project participants, noting that he too had gone "through both of the biggest earthquakes." He also reflected on his work as a journalist, establishing a more complex RA perspective linked to a career path that continued alongside his current studies:

> On the one hand, I was aware that I have experience in interviewing people, which is a plus, on the other I know we are collecting data about a specific set of questions so any potentially (even slightly) unconscious leading phrasing of questions or affirming follow-ups have to be strictly avoided. . . . So on a personal and professional level I anticipated a certain degree of having to control my natural instincts to respond to some of the responses (not sure what that says about my professionalism as a journalist!)

Manny's mildly self-deprecating humor was also a feature of Caleb's presentation when, for example, he commented "we're not here to prove or disprove that *earthquakes suck*" (Middendorf 2021). Caleb began by noting that he was in the second year of a BSc, majoring in chemistry, and that

> working in the field of linguistics has been a *different* experience for me. It's been enlightening in and of itself, seeing the way that people speak, which is so much weirder and less intuitive than I'd ever given it credit for.

He went on to compare his chemistry training in the scientific method that produces "binary outcome(s)" which risk "a fallacy called pathological science" and/or "confirmation bias" with the more open-ended approaches taken by social science and humanities researchers:

> Rather than trying to prove or disprove a binary hypothesis – I mean, we're not here to prove or disprove that *earthquakes suck* – it's a very open ended and sensitive operation that collects so many different voices in a very holistic way that doesn't reduce what the participants are saying to a simple yes or no answer. This sort of nuance in data collection actually makes us better, more objective researchers, and makes us less likely to twist our facts to suit the theory, rather than twisting our theory to fit the facts.

Caleb then related this approach back to his own discipline, arguing that it would

> benefit things like large scale pharmaceutical tests, since if you listen closely to everything people have to say you get way more useful and relevant data than if you were simply collecting a single number or answer from every person as is usually the case with these studies.

Like Caleb, Natalie also interrogated the precepts of her major, noting with a smile that her Classics background had given her a "fairly bog-standard Humanities degree" without "much opportunity to broaden basic tech skills, understand basic computer programs, learn simple ways of adapting media." She emphasized "how useful it has been to get some experience in the Arts Digital Lab, working on projects, using the LaBB-CAT and QuakeStudies databases, using programs like ELAN, PowerShell, working with XML files and largely understanding how computers actually work."

Where Caleb and Natalie referred to their main disciplinary areas in order to draw attention to the value of different approaches to research and learning, Dorian used their grounding in gender studies and associated theories as a lens to examine the responses received as part of the "Retelling Earthquake Stories" project. After considering participant demographics, and the content of various interviews, Dorian argued that a lot of responses

> can be traced back to the gender norms that the society expects men and women to adhere to. Women are supposed to be kind, nurturing, empathetic and sensitive while men are supposed to be tough, emotionless and stoic, they are supposed to be the rock that others can lean on (Ghosh 2021).

Dorian's conclusion suggested that some of the things they observed are societal issues that require systemic cultural change:

> I found a lot of stoicism and suppressed rage in responses by men, and some very unhealthy coping mechanisms. It is important that there is a shift in social expectations of men and women, as it has stopped men from healing properly, being constantly told to 'man-up' and has robbed women of the chance to be angry and this needs to change for effective palliative care in mental distress and PTSD issues.

Where Dorian identified major societal issues in need of addressing at the heart of their research, Laura's approach was to notice subtle trends and anomalies, in ways that presented them as potential research questions (Moir 2021). Why did some couples not tell each other about their interviews? Why did some people say they didn't know what to talk about and then spoke at length, unprompted? Why were so many of the (self-selected) participants "librarians, teachers, and people who worked with people"? Why did people recounting their experience of the most destructive earthquake tend to focus on the difficulty of getting home? Laura also noticed something that would have satisfied Dorian, namely that men were more dogmatic about the physical facts and geology of the quakes, often asserting they "knew it was coming." The people who exhibited the most distress about the earthquake aftermath "were generally those who had lost houses or had difficult insurance cases." She concluded by commenting on the project methodology, and specifically the problems that arose after it was decided to turn the 2012 QuakeBox study into the "Kōrero mai" longitudinal study. As QuakeBox had been intended as a one-off project, participant contact details weren't available, and securing a sufficient number of re-tellers for "Kōrero mai" was a major challenge. Laura outlined the pros and cons of physical letters, phone calls (landlines were better for contacting older participants, but also risked skewing demographics), social media (the questionable practice of RAs using their own Facebook accounts to make contact), publicly listed email addresses (people with public profiles were easier to contact, but again risked unbalancing the sample) and finally the number of contacts that occurred through the project team's social networks. She concluded by wondering whether it was "possibly interesting" that of the twenty-three QuakeBox participants who were deceased when attempts were made to make contact, fourteen were male. Given that of the total QuakeBox cohort 334 identified as female and 213 as male, male mortality in excess of 50% seems definitely interesting.

Where Laura paid attention to the larger picture and looked for trends and anomalies, Maggie's presentation focused on just four participants whose stories resonated with her personally and were in some way representative of a type of experience (Blackwood 2021). "Pamela" for example, who "had been in the central city at the time of the February quake" told a story of "real selflessness" as she helped two friends from overseas escape the city safely. Her story was "inspiring because it was an example of how we all hope we would act if we were in a situation like that." Also in the central city was "Garth," working his first day at a new job. His story was of his "journey towards better mental health that he has gone through over the past ten years," and Maggie "could tell that recognising the impact that the earthquakes had had on his mental health was not an easy thing for him to do." "Jan" was a feisty community activist fighting "to save her community of Brooklands, as well as against her insurance company and EQC [Earthquake Commission]." Her tenacity, refusal to back down, and unwavering dedication impressed Maggie. The final story was of "Fiona" who was determined to see the affected areas as "part of Christchurch's character and . . . what makes the city different," and who argued that "[w]e need a reminder – we don't ever want to forget." Maggie

expressed particular appreciation for this viewpoint, which has prompted her "to start looking at Christchurch's history in a more positive light."

Mengjun, who was preparing a review of literature about post-disaster relocators, began her presentation with an elegant thanks to everyone "for your presence, though my attention will be given to the absence today, the Christchurch earthquake diaspora." Then she explained that at first she had "no idea how bad the earthquake was for some people," until she read a story she was transferring into the CEISMIC QuakeStudies archive:

> This narrator was working in the city centre in 1987. An engineer told him that the area was a major problem for liquefaction, and said to him, 'be glad you are not in that piece of rubbish that was built with no knowledge of the sub-strata.' That building was the PGC building. When it collapsed, killing 18 people in 2011, the narrator remembered the conversation 24 years ago and was devastated and extremely guilty, feeling that he was somehow complicit in the building's failure.

That was when Mengjun herself "realised with great clarity that the earthquake affected people in so many different ways." That people "have different coping strategies dealing with trauma and stresses" which is why after the earthquakes "[s]ome choose to stay while others choose to leave." However, she had learned from her research into re-location that leaving "does not mean life gets better" and that it is important to "give special attention to individual human experience, especially of those who are absent."

In the discussion that followed the RA presentations, there was general appreciation for the timely reminder that from the lens of these individual RA presentations and perspectives on the projects, there was scope to expand what was learned and perceived. It was thus agreed that a second, follow-up workshop was desirable for a more substantial consideration of the possibilities that had come to light for greater RA input into research projects. The follow-up workshop occurred a month later, focusing on ways of involving student RAs more closely in research projects, and building our community of digital humanities researchers. A useful way of framing the outcomes of the workshop is Mila Oiva and Urszula Pawlicka-Deger's taxonomy of "the different aspects of situated research practices of the digital humanities" that "determine digital humanities research in both physical and virtual places" (Oiva and Pawlicka-Deger 2020) These are:

> infrastructure (material and non-material), social interaction (communication and collaboration), and context (social, cultural, and political situatedness). The aspects influence each other and changes in one of them can affect the others. They have also impact on what is studied, the ways research can be done, and, in the end the results of our knowledge, what kind of knowledge digital humanities research can provide.

Developing the ADL through the lengthy and difficult post-quake period, we often had cause to reflect on the ways such aspects have uniquely, even idiosyncratically, determined our digital humanities research practices, and thus we have categorized the workshop outcomes accordingly.

An important lesson to come out of the seminar and follow-up workshop was effectively a reminder that a lab must be vigilant to ensure issues of fairness and equity are continually addressed with regards to the social, cultural and political situatedness of that most vital cohort, our student and graduate RAs. Permeating the workshop was therefore the concern of investigators to ensure RAs were treated fairly and ethically, given that student labor in the university sector can be too-easily casualized and RA contributions under-acknowledged. Power imbalances exist when student RAs are taking courses of study in which the investigator they are assisting is also their examiner. So, too, when graduates take on successive fixed-term or temporary contracts in the hope they will lead to more substantial academic career opportunities alongside investigators. In such cases there is the risk that RAs will go over and above contractual expectations, not necessarily willingly, in order not to jeopardize future opportunities. To quote Rachel Mann (2019), "collaboration comes with its own potential pitfalls, especially when the collaborative relationship includes faculty members and graduate students working in the same field." It was acknowledged that this creates a tension for the ADL, given the lab's status as a social challenges-centric lab originating as a response to a major natural disaster, which has made it heavily dependent on grants, sometimes leading to uncertainty about its future, and thus creating problems regarding long-term staffing and support.

With regards to the current research, there was a robust discussion in the workshop about the difficulties encountered by RAs across various projects, for example issues occurring when interviewers had different levels of training and experience. Some RAs said more training would be beneficial, which investigators agreed with, although they also felt the need to explain the challenges of doing so on constrained project budgets. In the context of a discussion around the extent to which RAs would benefit from exposure to the project proposal, someone commented that there were lower levels of information that would be helpful, for example regarding why certain things, such as gestures, needed to be aligned in a transcription, or what the end product of their work might look like, i.e. "what does ELAN spit out?"

Questions were also asked about consent in relation to the narratives being collected, and the extent to which a story might be able to be discussed with friends and family, or talked about with other RAs. It was noted that a clear understanding of the approvals granted to the project by the UC Ethics Committee would ensure RAs were certain about what could and couldn't be shared in relation to the research. Thinking about ways to ensure RAs were appropriately acknowledged, it was pointed out that there are more ways to support RAs than simply remuneration, for example by ensuring every RA leaves with a reference outlining their contributions. As well, there could be recognition for workshop participation via UC's Co-curricular Record.[5] Lastly, an area of discussion which was of particular

interest to the investigating team related to the personal impacts of the material. Many of the RAs found themselves having to deal with the emotional impact of what they were hearing or transcribing. As one RA put it, "Certain stories get to you."

Infrastructure, which had been a major determinant of research practice for the ADL for many years, has assumed less significance recently. The UC campus rebuild following the earthquakes cost nearly NZ$750 million, and meant years of disruption for students and staff. However, the ADL recently moved into its fourth and best location since 2011 – a strengthened, repaired and refurbished building, in a space it is fortunate to share with the Macmillan Brown Centre for Pacific Studies (www.canterbury.ac.nz/mbc/). RAs commented that the ADL's physical location and facilities offer a congenial workspace, with some commenting that they wished they'd known more about the lab earlier in their student careers (particularly if that included access to the VR gear, one joked). Naturally the impacts of the COVID-19 pandemic on the research were an important issue. It was noted that while some training was harder by distance, as were some of the quality assurance processes, RAs appreciated the way that utilization of non-material digital resources made working from home, even on complex tasks, possible.

One of the most positive discussion threads was around building collegiality and teamwork, making RAs feel valued as researcher collaborators with ownership of outcomes. It was proposed that if workshops became a more regular feature of the ADL's operations, RAs might benefit from investigator guidance in ways they could make an original contribution, and also that investigators might benefit from RAs feeling free in this structured setting to talk to them about things they have noticed. One participant suggested making it standard practice to solicit, include and acknowledge RA insights, particularly as their role in dealing with large amounts of primary material means they often have a deeper knowledge of the raw data. It was also proposed that investigators do more to emphasize the value and the relevance of projects, for example to understanding recovery in areas affected by disaster.

This led to an interesting conversation, mentioned earlier, regarding whether RAs should be provided with access to the original research proposal. Some felt that sharing the original research application would provide an education in formulating research projects and writing grant applications. For a large project, it would be a way for RAs to get to know who all the investigators were as well as familiarize themselves with the aims of research. But questions were asked about whether having insight into the hoped-for outcomes and hypothesis might be detrimental if it caused RAs to be too focused on particular outcomes from the tasks they were performing. Was it more useful to know what the research aims to achieve, or to approach tasks blind in order to avoid bias?

A discussion then ensued around RAs keeping notes and journals. One RA said that they had been keeping notes, but didn't know if they were useful. Another RA thought it might be useful to look through a fellow RA's notes, especially if such notes evolve over time as projects progress. This led to the proposal that RAs might be encouraged and remunerated to keep a research "journal" as a desirable

adjunct to the main research work, with "the message that if you find interesting stuff put it aside." It was noted that, ethically, the ADL would need a policy that any use of RA notes would need to be attributed, that RAs should be assured that keeping a journal was not compulsory or relevant in terms of job performance, and also that all journals would be secure and their production subject to UC Ethics Committee approval. It was agreed that given the ADL's current resource constraints any major initiative around RA journals would require funding, but that it was a potential project worth pursuing. An interesting discussion then ensued regarding whether there was a good DH way of keeping research journals. Finally, among the blue skies ideas put forward at the workshop was the proposal that RAs might be brought into projects at the inauguration phase, with workshops focusing on future projects, and input into the design of questions, perhaps even the possibility of pitching their own project ideas.

It is evident that the seminar and associated workshop described earlier were of value, and having a program of such events can only serve to benefit the ADL. Rather than repeat the points supporting this, we will comment on four lessons emerging from the workshops that we think deserve greater consideration, particularly by researchers working in similar spaces. Firstly, the lesson that a meaningful program of workshops will ideally have a settled cohort of participants, which means we must try to improve RA continuity by re-thinking the way our social challenges-centric lab is resourced. Secondly, the lesson that a lab like the ADL can play a valuable role as an interdisciplinary research space. Thirdly, the lesson that thinking of research assistants as "research alongsiders" can open up opportunities for reframing and re-thinking research. Finally, the lesson that there should be an absolute commitment to prioritizing ethical practice and RA wellbeing, and workshops can play a key role in ensuring this is occurring.

The disaster that meant the ADL came into being as a social challenges-centric lab embedded a reliance on one-off, earthquake-related grants to maintain a research presence. This uncertainty means that as projects and participants waxed and waned, so did the cohort available to participate in workshops. As noted earlier, one consequence is that a meaningful program of workshops is compromized by the lack of a settled cohort of participants. We imagine (perhaps naively) that labs founded through an internal organizational research strategy have at least a baseline of funding certainty. Unfortunately, even after a decade of productive work, the ADL has minimal budget for supporting ongoing activities, underwriting long-term strategies or supporting the continuity of key positions. This may represent the biggest barrier to a program of RA workshops of the sort we have discussed. Ensuring their continuity as part of an ongoing program is problematic when they are constrained by the scope and scale of funded projects, with consequent fluctuations in the number of RA's being employed. That said, as the ADL evolves and expands in conjunction with the renewal of our communities, we see the evident value of RA workshops as a further, compelling argument for altering the lab's nature and resourcing.

Our second lesson, that a lab like the ADL can play a valuable role as an interdisciplinary research space, is grounded in Natalie and Caleb's comments about

the things their respective majors – Natalie's "bog-standard Humanities degree" and Caleb's "old science" qualification – *weren't* equipping them for. It is relevant, here, to note that UC is seen as more STEM-oriented than some other New Zealand universities. While the ADL has close connections with some STEM disciplines at UC,[6] in other disciplinary areas hard skills versus soft skills remains a gendered dichotomy. Though greater interdisciplinary collaboration occurs and is encouraged, it remains unevenly distributed, and it is arguable that not all proponents of the natural sciences would find it as easy as Caleb to remark in a digital humanities workshop that "humans don't make perfect scientists [because] we tend to find patterns where none exist." In some respects, this is an issue of what Jennifer K. Bosson, Jennifer Prewitt-Freilino, and Jenel Taylor (2005) call "role rigidity," where people who identify with specific roles feel "discomfort during an actual role violation" – but find it can be "significantly alleviated when they publicly disclaimed membership in the devalued group of which their behavior was diagnostic." They argue that "[a]s long as role violators have an opportunity to inform potential observers that they are not true targets of stigma, their unpleasant reactions to role-violating behaviors may be substantially diminished" (Bosson, Prewitt-Freilino, and Taylor 2005, 561).

An alternative approach might therefore be to provide a space outside the traditional disciplines, where role violation is actively encouraged and observers react positively to association between groups that may have traditionally devalued each other. Natalie's freedom to reflect on the technical skills that would be a valuable addition to her Humanities degree and Caleb's freely-voiced aspiration to bring social science and humanities methods "of properly and closely listening to people . . . into chemistry in the future" suggest that digital humanities labs like the ADL have the capacity to act as such spaces. Mike Cosgrave points out that for young researchers to succeed as academics these days "they must demonstrate digital skills in both research methods and teaching . . . as well as a grasp of the use of 'interdisciplinarity' as a tactical term to win research grants" (Cosgrave 2021, 31). He goes on to argue that "understanding the tools and methods which disciplines have in common can provide a practical basis for interdisciplinary collaboration," and comes to a conclusion that endorses the outcomes of our seminar and workshop:

> The digital turn in the humanities offers opportunities and challenges. Initially, it offered new research possibilities both in the extent of material explored and the type of questions which might be asked. Data, once captured, cleaned and encoded, could be easily interrogated using simple methods but from a variety of perspectives, allowing researchers to escape disciplinary silos so their work better reflected the complexity which humanities seek to make sense of. (32)

Our third lesson, that thinking of research assistants as "research alongsiders" can open up opportunities for reframing and re-thinking research, reflects a key outcome of these workshops – the realization for some, and reminder for others,

that rigid hierarchies and constrained roles risk limiting outcomes within research projects. It is an approach that might bring us nearer to Caleb's "open ended and sensitive" projects that collect "many different voices in a very holistic way that doesn't reduce what the participants are saying to a simple yes or no answer." The term "research alongsiders" is adapted from education researchers Wickins and Crossley who, in talking about positioning in a teacher leadership study, make an interesting point for the relationships between investigators and RAs in the ADL's ongoing research projects when they argue that "the fluidity offered by what became an 'alongsider' approach better reflected the complexity of the research process and supported the emergence of more nuanced and effectively contextualized conclusions" (Wickins and Crossley 2016, 225). What this might mean for the ADL and the UC digital humanities program is nicely spelled out in a proposal by Rachel Mann that merits quoting in full:

> I propose this as a general rule: projects that employ graduate students should include student publication as among the key metrics of their overall success. After all, graduate students are expected to complete coursework, teach introductory classes, pass exams, write a dissertation, and publish all along the way. Writing is not only the most important part; it is also the fun part. In Daniel Cohen's words, 'We wake up with ideas swirling around inside our head about the topic we're currently thinking about, and the act of writing is a way to satisfy our obsession and communicate our ideas to others' (40). Project directors should nurture this instinct. Working and thinking are similarly inextricable. The graduate students who are paid to do the work should therefore also be allowed to do some of the thinking.
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> (Mann 2019)

The final lesson, that there should be an absolute commitment to prioritizing ethical practice and RA wellbeing, and workshops can play a key role in ensuring this is occurring, has a strong personal dimension. The ADL's manager and co-directors all went through the Canterbury earthquakes and "know what it's like trying to carry out disaster research when we're enmeshed, personally, in the aftermath of a disaster" (Millar 2020). Because of this, they are acutely aware of the impacts of researching traumatic events, and consider managing the wellbeing of RAs to be an ethical imperative. They endorse and intend to implement the recommendation of human geographer Christine Eriksen who, having reflected on her own trauma researching Australian bushfires, proposed that:

> students and academics, including human geographers, could be trained on a regular basis on researcher self-care, just as, for example, research methods, critical data analysis skills, risk assessments, and protocols for safe travel are part and parcel of their education and career development. In this way, ethical research and research ethics become distinct yet intimately entwined aspects of sound geographical research.
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> (Eriksen 2017)

With regards to the transcribing of sensitive material, which has been an essential element of the ADL's studies of disaster narratives, Nikki Kiyimba and Michelle O'Reilly observe that "transcribing is not merely a neutral and mechanical process, but is active and requires careful engagement with the qualitative data" and "repeated listening to participants' personal narratives" (Kiyimba and O'Reilly 2016, 468). As the "cumulative effect on the transcriptionist" of hearing "personal narratives of a sensitive or distressing nature, can have an emotional impact," they argue that, "a qualitative research community [has] an onus . . . as ethical practitioners to be more aware of the possible effects of transcribing qualitative data . . . [consider] more carefully the role of the transcriptionist regarding the potential emotional impact, and foster a culture of inclusivity." They also recommend measures "to promote briefing and debriefing in order to mitigate against possible vicarious impact of listening to sensitive or traumatic data" (474).

Similarly, Smita Kumar and Liz Cavallaro propose that a "mind-set of care and well-being among individuals and institutions will result in more responsible research practices, as well as healthier researchers" (2018, 657). They contend that "it is essential for researchers conducting emotionally demanding research to engage in self-care to avoid researcher fatigue and negative impact on participants, themselves, and their research and to aid in knowledge creation." They also offer a timely reminder that institutions "have a responsibility to provide the necessary support for researcher self-care" and must make it "an essential component of the research process."

One thing that is clear from the ADL's RA seminar and workshop is that despite the challenges, and with due attention paid across the board to ethics, responsibilities, and well-being, it remains a privilege to research something that may be of benefit to our fellow humans. As Mengjun put it in her seminar presentation:

> In our research we give special attention to individual human experience, especially of those who are absent in this case. I love this project because although it is on a specific group of people, from the lens of these individual narratives and perspectives, we are actually learning about something more universal (Yu 2021).

Notes

1 See www.royalsociety.org.nz/what-we-do/funds-and-opportunities/marsden/awarded-grants/marsden-fund-awards-2018/

2 Marsden grants are "the main form of contestable funding for fundamental, 'blue skies' research in New Zealand. Grants are made in all areas of research, in both science and the humanities. . . . The Fund is administered by the Royal Society of New Zealand." See https://en.wikipedia.org/wiki/Marsden_grant

3 "Kōrero mai" is also known as UC QuakeBox Take 2. See http://dh.canterbury.ac.nz/quake-box-take-2/

4 The QuakeBox files are available at https://QuakeStudies.canterbury.ac.nz/store/collection/235

5 See www.canterbury.ac.nz/life/co-curricular-record-ccr/
6 Among the ADL's connections with UC's STEM areas, the ADL and the UC Digital Humanities program are closely linked to Applied Data Science; one of the ADL co-directors is the current Head of Mathematics and Statistics; and the CEISMIC project is part-funded by QuakeCoRE for new research initiatives.

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8 Remodeling the Text Encoding Initiative (TEI) Workshop

John Russell, Maria Isabel Maza, Lauren M. Cenci, and Claire M.L. Bourne

The Digital Beaumont and Fletcher project (Bourne et al. 2021) is a student-centered digital edition of *Comedies and Tragedies* (1647), a folio collection of the previously unpublished plays in the Francis Beaumont and John Fletcher canon now housed in the Eberly Family Special Collections Library at Penn State (PR2420 1647 Q, PSU Libraries). The project is student-centered in a couple of ways. Undergraduate and graduate students edit the selected plays, learning about editorial theory and practice as well as early modern language and historical context. The intended readers for these plays are undergraduate students. Thus, the student editors themselves have to be student-centered while considering how to modernize spelling and punctuation, as well as what words to gloss and what kinds of contextual annotations would be most helpful.

The project team decided early on that the plays would be encoded in Extensible Markup Language (XML) according to the Text Encoding Initiative (TEI) *P5 Guidelines* (Text Encoding Initiative 2021; hereafter, TEI *Guidelines*). Consequently, there were a series of training sessions required: a summer session for graduate student research assistants establishing a base encoded text which a fall graduate course in the Penn State English Department would work with; a session for the graduate students in the fall course; and a session for the graduate assistant for the academic year who would generally edit and encode the play modernized, glossed, and annotated (but not encoded) by undergraduates as part of their upper-level coursework.

The graduate course, consisting of doctoral students with one MA and one advanced undergraduate student, was designed for students with no prior editorial experience. It was set up to help them negotiate decisions related to a playtext printed using moveable type in the seventeenth century. This included textual cruxes, rhetorical punctuation, inconsistent scene divisions, and incomplete stage directions. Students also had to decide how to handle the early handwritten performance notes in the Penn State copy in their editorial treatments of the text. The first few weeks of the course focused on histories and theories of editing early modern plays, including scholarship on the ethics and politics of editing. This was followed by more practical matters: how to "establish" the playtext and then (because students were also charged with encoding their editorial decisions) how to "mediate" the playtext and editorial interventions using XML in accordance with the TEI *Guidelines*.

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During each week of the semester, students (who were each responsible for editing one act of the five-act play) focused their editorial labors on one feature of the playtext: modernization (especially spelling and punctuation but also lineation and meter); stage directions; act and scene divisions; character (speech tags and *dramatis personæ*); editorial apparatus (glossing and annotation); and copy-specific features (marginalia). Students read scholarship about the editorial challenges presented by each textual feature and about practical strategies for handling them on the editing side. In preparation for class, they were then asked to articulate how they would, in theory, approach a particular feature (say, spelling and punctuation) in the act of the play they had chosen to edit. They brought their individual theories to the seminar table and hashed out how to turn various theoretical commitments to the book, to the text, to the reader, to the theatrical dynamics of the play, etc., into practice. The outcome of these discussions was a set of shared editorial principles. These guidelines were meant to inform how students actually edited the text, a detail-oriented process that left too little time for encoding and almost no bandwidth for considering, let alone discussing, the interplay between the two, interrelated practices, or how knowledge of TEI *Guidelines* and XML might inform the development of editorial principles in the first place.

The initial trainings for the students were geared towards basic facilities with XML markup and the TEI *Guidelines*. After an introduction to what XML is and how it works, the focus was on working through the core elements and attributes of the TEI *Guidelines*, especially document structure and the drama module. The goal was to get the students to know enough of the *Guidelines* to be able to do the work they needed to do. There was space for the summer student and the graduate assistant to explore the TEI *Guidelines* more thoroughly and thus to interrogate some of the issues that arise when trying to translate the messy reality of an early modern base text into the more rigid, hierarchical structure of the TEI. However, for students in the graduate course, who also had to learn the theories and practices of textual editing for the first time, instruction around XML markup and the TEI *Guidelines* was firmly focused on learning just enough to accomplish the task at hand. The workshops were successful in that all the students learned what they needed to in order to complete their tasks. While there were some students in the graduate course who needed reminders and some reinstruction over the course of the semester, everyone successfully encoded their text.

Still, there were some obvious problems. While the summer student and the graduate assistant really enjoyed text encoding, course feedback from the graduate students was mixed. Even though students were aware that their work in the course was building towards an online, open-access edition of the play, some students never really understood why encoding was a necessary component of the course and complained that it was just extra work with no immediate payoff. None of this is novel: as Stella Dee (2014) found in her survey of TEI teachers and learners, students frequently wondered why they should bother with text encoding. However, reflecting on student comments after the course, the project leaders realized that there

was too little class time provided for the graduate students to consider and discuss the implications of editorial decisions on encoding practices and vice versa.

It's easy to think that with digital scholarship workshops, not everyone is going to "get it" and there will always be a few unhappy learners. This is especially true with text encoding, which is an acquired taste that not everyone acquires. However, when instructors take the time to reflect on what worked less well in course design, it can bring into focus what people are actually learning and whether or not one's learning objectives are appropriate. In the case of this project, learning objectives that linked the encoding component to the editing component were underdeveloped: learn enough to accomplish a task and expose students to an aspect of the digital humanities. We had focused too heavily on accomplishing project goals and, as a result, student learning outcomes around encoding were suboptimal.

For any kind of digital skills workshop, there is a tendency to train to the tool, and in the case of the TEI, training to the *Guidelines* is a variation of this mistake. As the digital humanities pedagogy literature increasingly argues, this is not always the best approach. For John Russell and Merinda Kaye Hensley (2017), tool-based pedagogy takes the focus of instruction away from the real issues at play in the digital humanities. When we focus our workshops solely on technical processes, they argue, we create the impression that the digital humanities are merely the ability to use the right software rather than a computational or data-driven methodology. As Andrew Goldstone (2019) explains, students in his courses trained on technology missed out on how to ask research questions in a data-driven methodology, and therefore digital humanities instruction should attend more to the perspectival change required to think of humanities objects as data. Zoe LeBlanc and Brandon Walsh provide examples for reconceptualizing tool-focused workshops by first covering the relevant concepts before introducing a specific tool, asserting that "starting with these concepts and then introducing the tool, audience members will have a stronger understanding of why the platform is necessary and how it can be used" (2019). The task, then, for the leaders of the Digital Beaumont and Fletcher project was to reconceptualize text encoding training in a way that facilitated student learning of the conceptual bases of digital scholarly editing, specifically.

Working through the pedagogy of text encoding literature, data modeling stood out as a key concept. Mackenzie Brooks (2017) lists a series of learning objectives for an undergraduate TEI course, one of which is learning how to translate material texts into a digital form (document modeling). Francesca Giannetti (2019) describes two different approaches to document modeling as part of her own encoding projects, making strong connections to information literacy concepts. Julia Flanders et al. (2020) set out a model of TEI pedagogy, with "learning general data concepts" the primary learning outcome. With modeling as a central concept, a new approach to training fell into place for the next pedagogical phase of the project.

Because the graduate students in the course were presented with a set of rules for encoding, the concept of modeling was hidden from them. Even when they were

participating in creating the model by helping to create editorial rules, from their perspective they were just creating rules for a process. In order to better empower graduate students working on the project, we incorporated these reflections to change the workshop procedures. For the two students who would be encoding parts of the Beaumont and Fletcher Folio during the 2020–2021 academic year (and who are co-authors on this chapter), we created a multi-session workshop, held online over the course of the spring semester. The initial focus was on the concept of models and how they relate to texts, using readings from Julia Flanders and Fotis Jannidis's collection *The Shape of Data in Digital Humanities* (2019) to define modeling and show how it can be applied in the humanities, especially literary studies. From there, we moved on to creating models for the texts the students were editing, focusing on the general structure of the texts and on what aspects of literary form were significant to them. After some discussion of the models, the focus turned to the TEI *Guidelines*: now that you have identified what's important to you as an editor, find how to encode those things. The rest of the sessions were simply focused on discussing encoding decisions and thinking about different options for approaching the complexities that arise when boiling down complex and often irregular early modern texts to fit into an XML-based model.

The two graduate students in the revised workshop, Maria Isabel Maza and Lauren M. Cenci, had different levels of experience: Lauren had been a student in the Fall 2019 editing course and had some experience with encoding, while Maria was completely new to it. Both found the TEI *Guidelines* hard to navigate in their initial exposure to it, noting that the breadth of information and level of detail were confusing. We found that working through models before getting to encoding helped with thinking through assumptions about how early modern texts are structured and to, in the words of Michael Sperberg-McQueen, "make explicit our assumptions about the nature of a text/artefact" (quoted in Flanders and Jannidis 2019, 3).

For Maria, who had limited exposure to TEI and encoding before this project, the TEI *Guidelines* were overwhelming. However, in having established her priorities in her model and having explained and discussed her model during the workshop sessions, she was able to move through the TEI *Guidelines* in a way that emphasized her voice as the editor of the play she had chosen to edit. Even with the existing project guidelines in place, she could choose what would best serve the audience of undergraduate students for whom she had created her modernized edition. If the TEI *Guidelines* had been introduced before or as she worked on her model, her own interests would have been secondary to what was suggested by the guidelines. Maria worked alone on her editing, making the experience of encoding vastly different from the seminar setting wherein a group of students all worked on sections of the same play and had to create a cohesive encoded text. If the students in the graduate course had been confronted with their own assumptions about the structure and form of an early modern dramatic text first, come to terms with what worked best for the collaborative setting, and then moved on to encoding, Maria believes more connections could have been established between the encoding of the text and the text itself.

The one drawback of creating models first and then moving to an introduction of the TEI *Guidelines* is the reality-check that comes with the sheer amount of labor required by the encoding process. In focusing on theory and modeling first, Maria imagined an edition of the play that would be possible to encode, but it was unfeasible considering the limited size of the project team and the time she would have to spend on her edition to realize her entire vision. Lauren approached modeling with an understanding of the limitations presented by encoding rules as well as time constraints. Modeling allowed her to determine priorities for her text (the collection of commendatory verses at the beginning of the Folio), creating a hierarchical approach that proposed a core set of features to encode first and a secondary set of features to encode as time allowed. In future iterations of this training, the project team can incorporate this idea of project scale by asking students to determine primary and secondary features in the model. Then, when the TEI *Guidelines* are introduced, students will be primed to think about the editorial process as a series of stages, which will help with conceptualizing a timeline for the project.

Our experience with text encoding workshops as part of a digital project has helped us see the importance of training for conceptual context in addition (and prior) to training to the technical process. The models provided a point of access into the TEI *Guidelines* that helped with navigation and generated a stronger connection between editorial intention and the nuts and bolts of elements and attributes. Susan Powell and Ningning Nicole Kong (2017) argue that it takes time to provide the context needed to help novices fully understand how to do digital scholarship and our experience of doing text encoding trainings backs that up. We argue that there needs to be ample time for learners to make stronger connections between their goals and the requirements of digital methods and software. Taking the focus away from text encoding requirements allowed the students to find their own voice first and prioritize their voice as editor throughout the process. The result is an approach to digital humanities methods that foregrounds humanistic concerns and the development of an editorial voice and centers both throughout the process.

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9 Building Community and Collaboration Through the Digital Humanities Toolbox Series

Sarah Simpkin and Jada Watson

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Coinciding with a new minor in digital humanities in Fall 2016, the University of Ottawa's DH Toolbox series was launched by the Library in Fall 2017.[1] Workshop titles and speakers included:

- Making it together: Connections, creation, and collaboration in the digital humanities, by Constrance Crompton (Department of Communication)
- The sounds of science/Les sons de la science, by Jean-François Lozier (Department of History) and Tom Everrett (Canada Science and Technology Museum, now Ingenium)
- Where in the world is all the DH data? Locating existing data for use in the digital humanities, by Catie Sahadath (University of Ottawa Library)
- Testing the limits: A panel on digital exhibits and copyright, by Jada Watson (School of Music/School of Information Studies), Mélanie Brunet (University of Ottawa Library), Mary Aksim (School of Information Studies), Amy Tector (School of Information Studies/Library and Archives Canada)
- Lather, rinse, repeat: Cleaning and structuring your DH data, by Sarah Simpkin and Catie Sahadath (University of Ottawa Library)
- Online social network analysis with Netlytic, by Elizabeth Dubois (Department of Communication)

This bi-weekly series creates a space where researchers can network, learn about new cutting-edge techniques and methods, and discover research tools. Now coordinated through the Faculty of Arts, DH Toolbox offers a "way in" and opportunity to build community, to share work, and exchange feedback.

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Though originally intended to support researchers at the University of Ottawa, one of the unexpected outcomes of the DH Toolbox series was community engagement beyond the campus. Over the course of the first four years, researchers and students from other institutions in the region, from the Galleries, Libraries, Archives and Museums (GLAM) sector, and arts organizations more broadly, have participated as both attendees and presenters. These workshops have become a hub of regional community engagement and have served as a launching pad for multi-institution research and teaching collaborations.

While we have had some great successes with the workshop series, the one-off model that seeks to serve a variety of learners comes with many challenges (Bowles-Terry and Donovan 2016; Powell and Kong 2017). Not only do our participants come to the sessions with varying levels of technical skills, but they do so from a variety of disciplinary backgrounds that can make effective workshop delivery challenging. This chapter will reflect on the benefits and challenges that have arisen with developing the DH Toolbox series, and address the creative approaches required to address learning gaps, maintain student and faculty engagement, and ensure that sessions are attracting presenters and participants from a broad range of disciplines.

Digital Humanities at the University of Ottawa

At the University of Ottawa, digital humanities workshops have benefited greatly from the support of librarians. In fact, the University of Ottawa Library was an early player in the growing digital humanities movement on campus with the establishment of a Digital Humanities Librarian position in 2013. With a mandate to promote the advancement of digital technologies and resources for humanities research, teaching, and scholarship, as well as to work collaboratively with faculty and students in producing scholarly projects, the Digital Humanities Librarian participated in the task force that proposed the minor in digital humanities in 2015. Since then, digital humanities support has become a team effort at the Library, with librarians and specialists serving as co-instructors and guest speakers in digital humanities courses, working with faculty members to design and deliver courses centered around digital exhibit creation (Makaryk and Hemingway 2019), and developing expertise in a range of data visualization and curation tools. In several instances, the resulting digital projects have incorporated materials from the Library's own Archives and Special Collections unit, drawing attention to unique holdings such as the Canadian Women's Movement Archives.

With a mandate to serve all members of the university community, the Library is a natural hub for interdisciplinary knowledge exchange and resource development. Library staff regularly offer workshops for learners interested in sharpening their research, data analysis, and writing skills, including tutorials on citation management, and statistical and GIS software. Desiring to build on this workshop tradition, while also seeking to bring together the informal, yet rapidly expanding, network of digital humanities scholars on campus, then-Digital Scholarship Librarian Sarah Simpkin launched the DH Toolbox workshops in September 2017. Designed as a twice-monthly series of lunchtime talks by digital humanities

practitioners, the sessions were focused on developing practical skills as well as introducing common tools.

Although there is a long history of digital humanities scholarship at the University of Ottawa (thanks in part to the foundational work of Chad Gaffield), the DH Toolbox series coincided with several critical advancements in digitally-oriented initiatives in the Faculty of Arts.[2] These initiatives included the launch of a new minor in the digital humanities in September 2016; the appointment of a Canada Research Chair in Digital Humanities, Constance Crompton, in July 2017; and the development of new and innovative research facilities in the fine arts. In this period, digital humanities at the University of Ottawa emerged at the intersection of creative and critical investigation of computationally aided analysis and the creation of digital artifacts. One of the avenues through which this work is fostered and shared is through our suite of pedagogical workshops and micro-courses, including the summer research institute (SHNTech/DHSITE), a DH Lecture Series, and the bi-weekly workshop series – DH Toolbox. Interest in the series was high and speakers were readily recruited from the Library and across the Faculty of Arts.[3]

The launch of the DH Toolbox series also coincided with a project to reimagine the existing Isobel Firestone Music Library as an active learning and research space equipped to support composition, audio, and video production and performance as it relates to music and other sonic research activities. Co-located with the School of Music, the newly branded CreatorSpace features a small seminar room, study rooms, lendable technologies, and an open event space with reconfigurable furniture. The DH Toolbox series became the first regularly scheduled event in the renovated space, drawing attention to the CreatorSpace as a center for digital scholarship on campus.

Reaching Outside the University

In September 2018, during the second year of the DH Toolbox series, changing roles at the Library and a new position created within the Faculty of Arts brought Jada Watson on board as co-coordinator of the DH Toolbox series. As Coordinator of DH (a role that she assumed in January 2019), Watson sought to expand the DH Toolbox series' scope to include digital initiatives unfolding *outside* of the university. Located in Canada's National Capital Region, the University of Ottawa is situated in close proximity to national GLAM sector institutions, and professors have a long history of collaborating with museums and archives through teaching and research. This was evident in the first Toolbox series in Fall 2017, where professors had co-presented with their GLAM collaborators (see earlier list of workshops). To showcase and learn from the innovative work undertaken by colleagues in this sector, we featured curation projects conducted by researchers at Ingenium – Canada's Museums of Science and Innovation, which highlighted their efforts to rebuild artifacts or historic technologies (and their sounds) as part of institutional initiatives to capture changing technologies. In a subsequent season, members of the Ottawa Symphony Orchestra also visited the series to present their collaborative 3D-printed string instruments initiative. Not only did this presentation afford the opportunity for the orchestra to highlight the innovative work of

luthiers and digital designers to develop a suite of violins and violas, but they also spoke of the potential benefits of this design technology in bringing instruments to underserved regions of the country.[4]

While the Covid-19 pandemic initially forced the series cancellation in March 2020, we embraced our remote working culture when we returned for the Fall 2020 semester with a virtual series. The 2020–2021 series, centered around the world of data, brought in presenters from around the city, including a special presentation on digital pedagogy with Laura Estill from St. Francis Xavier University. Running the sessions via Zoom meant that we were able to record the sessions and host them on a YouTube channel, which we launched in January 2021 as a resource for archiving these sessions.[5] Our highest attendance rate during the pandemic was a session with ninety-six guests. As we emerge from Covid restrictions, we are eager to continue offering an online option for the sessions and are exploring how a hybrid delivery method might work.

The DH Toolbox series has quickly become one of the most popular outreach events in digital humanities on campus, drawing in participants from arts, medicine, engineering, and the University of Ottawa and Saint Paul University Libraries. What has been an exciting development as the series has evolved is the interest from practitioners from outside of the university. Attendance has exploded in this remote environment as we have welcomed guests from Canada, the United States, and around the world. We have had regular attendance of graduate students from Carleton University, as well as the regular participation of librarians, archivists, and curators from national GLAM-sector organizations such as Library and Archives Canada and Ingenium. This widened audience has exposed the uOttawa community to groundbreaking projects unfolding outside of the university and influenced the development of research projects on campus. Perhaps most critically, the DH Toolbox series has become an important networking site in which new collaborative relationships emerged.

Overcoming Challenges

While the workshop series has been successful at bringing together the local DH community to learn from one another, we recognize that the decision to offer a range of workshops as one-off sessions comes with several challenges. Our participants not only have varied levels of digital expertise, but they also come from a range of disciplinary backgrounds, which can make delivering effective workshops challenging.

(1) Attendee Expectations

The DH Toolbox was initially conceptualized as a "hands-on" workshop series, with participants encouraged to bring their laptops and follow along with the lessons and demonstrations. The DH Toolbox workshops cover a range of methodological and theoretical approaches, and early on sought to introduce tools to participants. Over time, however, we noticed that participants generally preferred to watch the presentations without completing the lessons in real-time. While it is not possible to know exactly why this shift occurred, we learned from talking with students that

tech anxiety and shyness around making mistakes in public were significant factors (more in the next section). This was sometimes challenging for instructors, who had designed a workshop expecting hands-on participation, but then had to adapt on-the-fly to a more demonstration-oriented model. We learned quickly that some tools lent themselves to this 90-minute workshop model (like Voyant or OpenRefine) and a short session could teach the basics to get participants moving on a project. But other techniques or technologies posed challenges for the one-off DH Toolbox model, largely because some tools regularly used in DH research require a priori knowledge. For example, a workshop on data visualization with Python requires a base-level understanding and comfort with the programming language to follow along with the lesson. The theoretical basis behind TEI and linked open data can be challenging to convey within a 90-minute session. When sessions also include a hands-on component, learners often need time to configure their computers or to familiarize themselves with an uncommon interface. While participants had the opportunity to learn core concepts and be exposed to projects using these languages, they did not always see the direct applicability to their own work. We found that these topics were better suited to a scaffolded learning plan, to allow instructors to break down complex ideas and techniques for participants. For example, in Fall 2021, we ran a four-part series on data visualization featuring four scaffolded 90-minute sessions starting with an introduction to visualization with Python and moving into more complex applications like D3.js. This way, participants could first learn basic theoretic concepts and then have the time to digest an idea, practice on their own, and build enough of a base to use the skill knowledgeably.

Rather than pressuring attendees to follow tutorials during DH Toolbox sessions, we adapted the format to include presentations ranging from demonstrations of a tool or database to sharing a research project (either completed or in progress), to round table discussions about theoretical or methodological approaches or issues. For example, the Fall 2019 session opened with a round table discussion on digital pedagogy with professors from the University of Ottawa and Carleton University, while the Fall 2020 session ended with a round table discussion on the ethical implications of data cleaning. By shifting the format, participation increased. The removal of technical barriers has resulted in greater engagement in the session material, with attendees having more time to ask questions. Participants wishing to develop a deeper understanding of the language, technology, or methodological topic may follow up with the presenters or with the DH Coordinator for resources to help with self-directed learning, or for advice on how to integrate these new approaches into their course syllabi. These interactions have been important to programming in DH; not only do they help us identify interests and gaps in learning, which inform the content of future sessions, but they are critical to community-building in DH. While not wanting to fall into the trap of marginalizing pedagogical expertise of the library staff (as cautioned by Bowles-Terry and Donovan 2016), we have found that this model has often served to bring professors and library staff together, creating a meeting place for building relationships that then lead to in-class workshops.

That said, the desire to learn more complex techniques and tools remains for many of our repeat attendees. Taking recommendations from participants, we

began working with the University of Ottawa's IT Solutions team, a group of computer scientists based in the university's Information Technology department whose roles are dedicated to research support, to offer more workshop-oriented sessions. Much like Susan Powell and Ningning Nicole Kong who revealed the impact of intensive multi-workshop models in supporting the DH community (Powell and Kong 2017), we found the need for a similar model to support the development of critical digital skills. In Fall 2021, a DH Workshops program was launched with a multi-part Data Visualization series on specific tools. These DH Workshops have both lectures and applied sessions, wherein participants follow along with the instructor but then work through a series of small exercises on their own time. Attendees then return for a follow-up workshop where they share their results, ask questions about their work, and then move on to a more advanced technique. This approach is suited for learning more advanced topics, such as Python, which we plan to cover in a future session. Because the 2021–2022 academic year is still largely unfolding in a remote setting, the DH Workshops are taking place via Zoom and have attracted students from around the world.

(2) Outreach

One of the biggest hurdles to planning DH Toolbox sessions is outreach. We have had a core group of regular participants (even during Covid-19) since the DH Toolbox series began, but we are increasingly aware that our potential audience is much broader (Bowles-Terry and Donovan 2016). Digital scholarship happens in all disciplines, but not all scholars working with digital tools self-identify as digital humanists or come from a humanities background. While our goal is to break these disciplinary silos and extend a warm welcome to scholars from across campus, we have found it challenging to expand beyond our core group. Our DH mailing list, social media, and the Library's internal communications system have provided a means of promoting the events. While we would still like to see more engagement from our campus community, our social media outreach and online sessions have enabled us to grow beyond the National Capital Region, reaching a global audience.

How do we reach our students? New students join the university each year and may not be familiar with the digital humanities. They are also constantly bombarded with information that may or may not be relevant to them. One approach that has been effective in attracting students is partnering with DH instructors who include the DH Toolbox sessions in their course plans. The idea emerged after our colleague at Carleton University, Shawn Graham, introduced a component into one of his DH graduate courses requiring students to attend digital humanities events in the city and then report back to the class on what they learned. As a result, Carleton University students began attending the series workshops and have continued to do so, even after completing the course requirements. Since then, similar requirements have been included in the digital humanities courses at the University of Ottawa. For example, in a fourth-year DH course, students are asked to participate in two sessions per semester and write reviews of the sessions they attended, summarizing the content, but also critically evaluating the workshop materials, the

presentation style, and even the use of space and engagement with the audience. Not only did the students learn to think critically about the delivery of pedagogical workshops, but their reviews also provided Watson (the course instructor) with invaluable information about the structure and delivery of the Toolbox sessions. It was through these reviews that she began to realize *why* participants were not always eager to participate in the hands-on learning component and saw the value in bringing in more lecture- and demonstration-oriented sessions.

While this type of relationship has certainly been fruitful, we recognize that we often only reach students enrolled in digital humanities courses. Before the pandemic, we had tried two strategies for building our student audience that had a positive impact: (1) inviting students to present their work in an open house session; and (2) inviting graduate students to deliver Toolbox presentations related to their thesis work. The open house sessions began in Winter 2019 when Watson sent an invitation to her colleagues in the Faculty of Arts to share their students' work in a public event. The CreatorSpace was transformed into an afternoon event open to the public where visitors could walk through the space – like a poster exhibit or science fair – and speak with students about their work. Students were provided with monitors and other technology to help them to display their projects, which included virtual exhibits, social network analyses, and 3D-printed cultural artifacts. One project team, led by Elena Valenzuela of the Department of Modern Languages and Literatures used the opportunity to collect data for an ongoing project in linguistics. Team members handed their visitors a tablet so that they could become active participants in a study of swearing in different languages. The Dean of the Faculty of Arts attended the event, as did Library staff, department chairs, donors, and colleagues from the local GLAM community – all of whom were there to celebrate digital scholarship at the University of Ottawa. The event was a success in spotlighting the work being undertaken in our classrooms. It also highlighted the important role of the Toolbox series in creating educational opportunities and fostering community within the Faculty of Arts. Building from this, we began to consider ways to integrate more student work in the series. In Fall 2019, a graduate student in communication delivered a session on the data mining software RapidMiner, demonstrating how to extract and analyze tweets. Their participation increased attendance of both professors and classmates of the student who wanted to learn more about their innovative work.

Conclusion: Building Community

The DH Toolbox series has grown in ways that we could not have anticipated when we began this project in Fall 2017. One of the most rewarding outcomes has been the warm response from participants and the growth of the digital humanities community on campus and beyond. A core group of participants from the faculty, Library, and local GLAM community have gotten to know each other and their work through these sessions. A network of support has also emerged, with participants beginning to advise and collaborate on each other's projects. Perhaps most notable are the deepened relationships between researchers, students, and

Library staff. As a result of her participation in the series as a regular presenter and attendee, Roxanne Lafleur, Digital Humanities Support Specialist at the Library, has found a significant increase in the number of students and researchers that seek her out to discuss their projects. Not only has this resulted in meetings to discuss and determine appropriate tools for a particular project, but it has also led to classroom-based workshops on Library-supported technologies. In one instance, Lafleur's guidance has enabled a project to grow from a digital archive for preserving period literature into a full-scale pedagogical tool through which the research team is building open access resources for teaching Spanish language and culture in Canada.

It is through collaborative relationships and serendipitous encounters that new ideas in the digital humanities take form. For all of the challenges that we perceive with programming and outreach, we can say without a doubt that the DH Toolbox series is providing a place, a time, and a forum for bringing people together and creating a space for sharing knowledge. We have enjoyed working together on the first five years of the DH Toolbox and look forward to seeing where the next five years takes us.

Notes

1 For more information about studies in the Digital Humanities at the University of Ottawa, visit https://www.uottawa.ca/faculty-arts/programs/undergraduate/digital-humanities.
2 In May 2017, Chad Gaffield was awarded the Order of Canada for his leadership in interdisciplinary collaboration and innovative work in digital humanities. Learn more about this award here: www.gg.ca/en/honours/recipients/146-4665.
3 For more information on SHNTech/DHSITE, DH Lecture Series, and DH Toolbox programming, visit the DH-Hub: https://dhsite.org/. Posters for all events are archived here: https://dhsite.org/archives-des-affiches-event-poster-archive/.
4 Learn more about the Ottawa Symphony Orchestra's 3D String Theory project: https://ottawasymphony.com/3d-stringtheory.
5 Visit the SHN-DH at uOttawa YouTube channel: www.youtube.com/channel/UC_kERIgyZ7WZ-vO-W_gAUQ/featured.

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10 "Push That Button and See What Happens"

Addressing Technology Anxiety in Library Digital Scholarship Pedagogy

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The digital scholarship workshop can be an exciting and inspiring space for learners to encounter new concepts and develop new skills. It can also be a space of anxiety. The importance of the affective dimensions of learning has been well studied in the domain of educational research, and can be adapted to a digital scholarship context. This chapter seeks to contextualize the related issues of information anxiety, information overload, and library anxiety as potential stressors on learners, and to investigate strategies that can be applied in the digital scholarship classroom to further the goal of creating more inclusive, effective, and empowering digital skills instruction. Digital scholarship in this chapter is used as a broad term to encompass computational and data-driven methods and skills aimed at a general audience, including digital humanities practitioners. As digital scholarship training takes place in many contexts, the suggestions in this chapter are primarily designed for general audience workshops and other settings where existing technological competencies are unknown.

The related concepts of information anxiety and information overload are foundational to an understanding of potential negative affective reactions of learners within both formal and informal learning environments. Information anxiety, the discomfort caused by "the ever-widening gap between what we understand and what we think we should understand," can occur in learners who desire to learn digital scholarship skills to support their work but are understandably daunted by the challenge of learning a new skillset (Wurman 2001, 14). Information overload, occurring when "the amount of input to a system exceeds its processing capacity" (Speier, Valcacich, and Vessey 1999, 338), is a danger in any learning environment where learners are encountering a great deal of new information. It is especially problematic when paired with anxiety about that information. Similarly, the concept of cognitive load cautions instructors against presenting learners with too many concepts at once. It emphasizes removing distracting or extraneous factors. Coupled with ambiguity tolerance, or a person's ability to handle situations where they are confronted by unfamiliar, complex, or contradictory information, learning new digital skills is very often fraught with a sense of incomplete

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knowledge (Furnham and Ribchester 1995). Given the range of digital competencies and familiarities which might be expected, learners with a low ambiguity tolerance may feel stress in situations where instruction requires them to proceed even without a complete understanding of what is being taught.

The experience of library anxiety – or the stress that some users, and particularly undergraduates, feel when using the library – may also be at play in the digital scholarship workshop that takes place within the library (Mellon 1986). This concept has been extensively studied, supplemented, and critiqued since its introduction by Mellon in 1986, particularly as related to the increasingly computerized and digital nature of libraries (Jiao and Onwuegbuzie 2004; Bostick 1992; Gremmels 2015). The concept still bears some consideration here for library-initiated workshops given that first-time digital scholarship learners may be unfamiliar with a library's digital scholarship space, instructional space, or with the library as a whole.

Digital skills instruction often focuses on concepts that can be complicated even to learners with some technological proficiency, and which may seem unattainable for a novice who does not conceive of themself as technologically skilled. For general-audience workshops, where the technological proficiency of learners often cannot effectively be ascertained ahead of time, it is especially important to design curricula that take into account the emotional experience of learners.

A great deal of education-focused literature discusses the cognitive domain of learning. Cognitive work is not the only aspect of learning that is relevant during a workshop, as learners bring a host of affective characteristics to the classroom. A consideration of affective responses in an educational setting involves thinking about "a person's attitudes, emotions, interests, motivation, self-efficacy, and values" (Schroeder and Cahoy 2010, 129). In a single session, learners may experience emotions as varied as anxiety, excitement, boredom, pride, shame, discouragement, and capability and may exhibit behaviors tied to these emotional responses. Anxiety in particular is widely reported in educational settings (Jackson 2015, 356). Learners who are experiencing negative affective responses may lean into defensive strategies such as avoidance, giving up, or disruptive behaviors in order to avoid feelings of inability which are threatening in the high-pressure, high-stakes setting of higher education. Investigations into the affective dimensions of learning underscore the importance of instructor attunement to both negative and positive affective reactions in the classroom – including the way the instructor influences those reactions as well as the ways in which they are influenced by them (Jackson 2015).

Information literacy instructors have already delved into the affective dimensions of learning in the library classroom. The work of Carol Kuhlthau and Constance Mellon considers students' emotional reactions to library research in addition to offering strategies to address negative emotions and acknowledge and build on positive responses (Mellon 1986; Kuhlthau 1991). Cahoy and Schroeder note that acknowledging the "anxieties, confusion, or frustration" that learners may experience while building research skills is the first step toward creating learning outcomes that incorporate affective components (2012, 76). Mabee and

Fancher (2020) integrate cognitive load theory, affective learning, and knowledge of the socioeconomic stressors that impact their own students in their work, and suggest that library instructors employ thoughtful design, nuanced models of information assessment and information privilege, process-based assignments, and compassion in their information literacy endeavors. Writing about feminist library pedagogy, Accardi discusses the importance of an ethics of care in teaching, and of a pedagogy that "sees learners as people with thoughts and feelings that they bring into the classroom, and which, in turn, affect how they learn" (2010, 44). In the realm of digital scholarship, when writing about creating digital scholarship safe spaces, Wexelbaum notes the importance to learners of a "perceived non-judgmental, social environment" for learning (2016, 20). The lessons from library colleagues may be particularly relevant to a consideration of the affective dimensions of learning as they pertain to the digital scholarship classroom where digital humanities instruction takes place.

Discussions of anxiety, overload, and affective dimensions of learning suggest some applications to digital scholarship pedagogy. The work by information literacy instructor colleagues and proponents of feminist library pedagogy has laid groundwork for a library pedagogy that is explicitly conscious of learners' emotional reactions toward their struggles and successes in the classroom. Many digital scholarship workshops at the authors' institution are entirely co-curricular and voluntary, so learners in each workshop have self-selected into the opportunity. The instructor of a given workshop does not know of course who has self-selected *out* of the opportunity due to anxiety, fear of failure, or a negative self-concept related to ability to successfully use technology.[1] Learners who opt in have varying motives for choosing to attend a digital scholarship workshop, from outside pressure to general curiosity; although these learners may be more prepared to tackle their technological anxieties when they sign up, these anxieties still crop up in the classroom.

Regardless of context, the workshop instructor cannot completely control the anxiety of learners. A learner's motivations to take a workshop may be anxiety-laden for them – perhaps this workshop is about skills that are necessary for them to learn for their research, and they feel a need to "catch up" with their peers who already possess such skills. The instructor cannot completely dispel these anxieties. However, the classroom environment can promote a sense of experimentation, collaboration, and freedom from expectation or judgment in an attempt to lessen the effects of information anxiety that can lead to negative affective outcomes. Addressing negative affective experiences is not the single end goal of a pedagogy that is built with learner emotions in mind. In acknowledging and actively anticipating bad feelings, a learning environment with affective learning objectives and a supportive atmosphere seeks to instill in the learner a sense of their own competency to learn the material. Similarly, positive feelings about learning – such as excitement, curiosity, inspiration, and pride – should be validated and used as an opportunity to prompt reflection or further growth. No single digital scholarship workshop can comprehensively teach a method or tool; learners must continue learning on their own to master the skills introduced during the workshop.

Instruction that empowers learners by emphasizing their ability to improve, defusing the emotional weight of failure, and identifying support structures can support learners even after the workshop is over.

Learners enter the digital scholarship workshop with a variety of experiences, expectations, interests, and fears. This is part of the excitement of teaching workshops as well as one of its biggest challenges. One goal of the digital scholarship workshop should be to proactively mitigate the effects of technology anxiety. Learners who are new to digital methods may be daunted by the concept of starting to learn an entirely new skillset, while learners with some digital methods experience may struggle with unfamiliar methods. The authors have utilized several strategies when working with learners whose competencies are unknown or when dealing with anxiety responses to technology.

When introducing a new tool or platform, spending some time on unpacking the purpose, known assumptions, and black boxes of the technology can be useful. Not only does this provide additional context which may help to situate learners, but also it is an opportunity to engage in critical appraisal of a tool. For example, if the class focuses on a tool with primarily commercial applications, then it provides good context and critical background to discuss whether the tool was designed with academic use in mind. By the same token, digital scholarship tools – particularly proprietary and "out of the box" tools – contain plenty of unknown assumptions, hidden algorithms, and locked functionalities as well. Explicating major unknowns can validate a learner's sense of incomplete understanding, which is arguably a necessary tension to learn to manage when dealing with technology. Engaging learners in this process can promote an understanding of the technology in question in addition to cultivating a sense of critical engagement with digital scholarship tools.

An incomplete understanding of a tool or interface can also lead to reluctance to engage due to fear of "breaking something." Explaining where learners should take care (e.g. saving frequently, understanding what changes are irreversible) versus where they can push buttons with abandon can be a strategy to get reluctant learners to begin experimenting while also teaching important concepts. When possible, setting up a sandbox environment for learners can be a way to control the effect of any mistakes – in an explicitly temporary setting, the fear of major, permanent mistakes can be lessened. "Push that button and see what happens" is an instruction to learners to engage in investigatory experiential learning, as well as a method of promoting a habit of mind that corresponds with the experimental approach often required when using digital tools.

Of course, becoming proficient with technology entails learning not only how to effectively use tools or platforms but also learning concepts and jargon, how to troubleshoot, and how to search for and locate solutions to problems. Addressing the potential for overwhelm by scaffolding learning and modeling the learning process can help alleviate technology anxiety. Scaffolding, influenced by Lev Vygotsky's (1978) Zone of Proximal Development (ZPD) theory, is an instructional strategy to provide learners with a framework that guides and supports the development of their ability to solve problems and complete tasks with and without

assistance (Wood, Bruner, and Ross 1976). Vygotsky defines the ZPD as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem-solving under adult guidance, or in collaboration with more capable peers" (Vygotsky 1978, 86). In the context of a digital scholarship workshop, scaffolding techniques might include introducing terms and concepts immediately before or while performing related tasks, walking through a task in the tool or platform (e.g., participatory live-coding), facilitating guided practice and activities, and giving learners sufficient time to engage in and reflect on hands-on activities individually or in groups. For a robust discussion of scaffolding in digital scholarship workshops, see Mia Ridge and Eileen J. Manchester's (2023) chapter "Scaffolding Collaboration: Workshop Designs for Digital Humanities Projects."

Normalizing mistakes, false starts, and failures while teaching is a way to model problem solving. Nederbragt et al. suggest to instructors "embrace your mistakes" in the context of participatory live-coding, an instructional strategy that combines an instructor typing and narrating their code while inviting learners to type and execute the same commands (2020). This strategy is also endorsed within the Carpentries Instructor Training modules, pointing to the principle of error framing as an essential pedagogical tool in live coding (Carpentries; for a discussion of Carpentries instruction in action, see Van der Walt et al.'s (2023) chapter "Challenges and Opportunities of Digital Humanities Training in South Africa: Moving Beyond the Silos"). Error framing is the practice of encouraging learners to see errors as useful learning tools, and has been linked to both increased learner exploration with accompanying positive effects on learning (Hardy et al. 2014) as well as an increase in learner self-efficacy (Steele-Johnson and Kalinoski 2012). Clicking the wrong button, becoming momentarily disoriented, or making a typo while coding are all great opportunities to demonstrate how the instructor would reorient themselves. Whether they search for the error online, open the documentation, or simply take a moment to retrace their steps, the instructor can introduce a strategy that learners can use when they encounter a similar situation. Error framing, when combined with experiential learning techniques, offers a chance for learners to experiment with reconceptualizing errors as learning opportunities rather than failures.

Taking a hands-on, applied approach helps to avoid the feelings of overwhelm that often come with learning new technical concepts and vocabulary by favoring practice with specific problems and tasks over theory and general knowledge. A limited number of concepts are introduced before they are put into practice to avoid cognitive overload. Deciding how to structure content requires identifying the discrete concepts that a lesson will cover. How many of these are likely to be new to learners? Of those that are new, which might require some extra orientation? For example, an introductory Python workshop might spend time explaining and doing hands-on exercises with integers and strings because learners new to programming are likely not used to distinguishing between the two. Other data types such as Booleans and arrays would not be introduced until later in order to give learners some time to practice with more familiar concepts (numbers and words) as recontextualized in the unfamiliar landscape of programming. Through activities,

learners can then apply the concepts they are learning immediately, making the theoretical concrete and improving understanding and retention. Terminology may be introduced as learners encounter concepts during activities, such as terms they may see in error messages when practicing writing code. It may be best to avoid jargon if learners will not encounter these terms or concepts otherwise during the session; providing resources for further learning post-session may be more appropriate. Hands-on activities can not only ease anxiety but also help learners build confidence in their competence in technical and problem-solving skills. The Carpentries developers and others (Lin et al. 2014; Swafford, Orr, and Hall 2014; Theobold, Hancock, and Mannheimer 2020) have found that learners feel more confident after solving problems and completing tasks independently. These feelings of self-confidence and independence signal successful movement through the ZPD. Following hands-on activities with times of reflection provides opportunities for the instructor to normalize difficulty and for the learners to acknowledge success, think critically (e.g., identifying limitations of technology and methods), "integrate the insights they gain into their learning/life experience so that they can make better choices and improve their learning" (Rogers 2001, as cited in Huang 2017), and to further develop their self-regulated learning skills which involve "the deliberate planning, monitoring and regulating of cognitive, behavioral and affective or motivational processes towards completion of an academic task" (Hadwin 2008, 179, as cited in Huang 2017).

In considering learners' affective responses, it is important to also plan for and promote positive responses to learning. Strategies to help address technological anxiety such as those discussed in the previous section are likely to benefit the entire learner cohort through their focus on clarity, hands-on learning, and the usefulness of mistakes. However, as most skills will require the learners to practice beyond the duration of the initial workshop session in order to become truly proficient, connecting the skills to learners' experiences and empowering them to ask questions and investigate solutions will model some of the skills necessary to continue learning beyond the workshop setting. Drawing on the feminist library pedagogy principle that instruction should focus on learning together, the digital scholarship classroom can be a space of collaboration between instructor and learners. The instructor themself may still be on their learning journey with regard to a particular skill or tool, and may, in fact, still learn things alongside their workshop participants as surprises arise during lessons. An instructor may ask learners to connect concepts from the workshop to their own experience or subject domain; for example, they may ask for some examples of types of data that participants typically work with in a workshop focused on organizing and cleaning spreadsheet data. Connecting to experiential knowledge and engaging in collaborative construction of knowledge are some tenets of feminist pedagogy that can be adapted in the digital scholarship classroom in order to promote excitement and engagement in learners.

Digital scholarship workshops can be guided by the learners' pace and interests in order to more fully involve them in the knowledge construction process. A workshop should have specific, actionable, and measurable learning goals that

it seeks to fulfill. However, these learning goals may be flexible enough to allow space for learners to bring their own goals and experience to the workshop. In a smaller group, the instructor may ask learners what they hope to achieve during the session in order to reflectively assess together at the end whether learners' goals were met. Similarly, workshop attendees will bring their own prior experiences and knowledge to the session, which the instructor can engage with in order to help make connections. Learners new to learning about metadata, for example, might be asked to provide examples from their own experience about where they have encountered descriptive data, from online shopping to streaming music. Focusing on a learner's own goals and experiences related to a digital tool or method will also connect their learning more strongly to the actual task that they hope to be able to complete. It is important in these highly collaborative and reflective exercises to ensure that discussion is based on the session description and learning objectives to prevent learner goals that are out of the scope of the lesson – however legitimate they might be! – from diverting the workshop from its core purpose.

Of course, larger groups or more complicated material may not allow for this highly flexible and group reflection-based approach. Formative assessment strategies are useful in any context but can be leveraged in these situations in particular in order to give the instructor some insight into the affective responses of their learners as well as their degree of understanding. Periodically asking learners questions to check understanding as well as questions about their areas of confusion (e.g. "muddiest point" exercises) can surface challenges and opportunities, and offer chances to reorient if learning goals are not being met effectively. Alongside formative assessment, an instructor should have some backup plans if the planned lesson is not leading to the necessary learning outcomes. One strategy is to have a flexible amount of content – a core set of concepts that are necessary to cover sufficiently in order to meet the session's learning objectives, as well as content that can be added on if learners are keen to build on those foundational concepts. This two-tiered approach can help the instructor make a plan to prioritize learning – including the factors that affect learning such as learners' excitement, motivation, fatigue, and anxiety – over the lesson plan in order to position learners as active participants in the process who are equipped to continue investigating even after the session is over.

So often, computational work does not "go right" on the first attempt: the user uses incorrect syntax, calls the wrong function, makes a logical mistake, or simply makes a typographical error. These faults may produce an error message (sometimes "fatal"), crash the user's working environment, freeze the computer, or, worst of all, lurk silently and cause cryptic side effects at unexpected times and places. These results can be frustrating and discouraging; failure-based learning provides insight into preparing learners to encounter and respond to failures when they occur.

Failure-based learning is an educational design paradigm which strategically uses the learner's experience of failure to further learning goals. More specifically, learners are given a problem that they will initially fail to solve, but the process of eventually reaching a valid solution is instructive in ways that an easier problem

would not be. Kapur's pioneering work in this area proposes the productive failure (PF) design strategy, in which learners – usually situated in small, collaborative groups – are offered minimal structure initially, and as a result may experience a sense of struggle and initial failure; however, in the long term, such learners turn out better prepared to solve future problems (2008). This runs contrary to the common wisdom of giving only easy and highly structured activities to beginners to ensure their success. Ill-structured problems aren't used exclusively, but in combination with more traditionally designed activities. PF posits that out of the learner's struggle emerges a more nuanced understanding of the problem domain and its parameters.

Failure-based learning is closely concerned with learners' mental models and the process of their revision (Tawfik, Rong, and Choi 2015). Essentially, the instructor targets and challenges the learner's existing mental model of the problem domain; the learner examines "what went wrong" when they initially fail; and finally "a newly modified cognitive structure is achieved by incorporating insights drawn from analyzing the failure" (Tawfik, Rong, and Choi 2015, 985). The learner tests this new structure by reattempting the problem, and the result of the attempt will either validate their new model or provide more data (i.e., a new failure) for them to analyze.

How can we "design for failure"? Kapur (2008) suggests a two-phase activity design of 1) generation and exploration of solutions/methods and 2) consolidation of solutions/methods into "canonical" forms, supported by careful calibration of activity difficulty and maintenance of a safe social environment. A problem scenario with an "affective draw" can further encourage learning; for example, a hypothetical data-wrangling scenario might be used to show the researcher why attention to data types is important. Tawfik, Rong, and Choi (2015) offer a high-level framework for incorporating failure in learning design, which encompasses such guidelines as allowing learners to identify failure (potentially according to more than one perspective), designing intentional encounters with failure, supporting inquiry into failure especially for transferable knowledge, and supporting failure resolution.

Care must be taken when employing failure-based learning in order to avoid discouraging or alienating learners. To the furthest extent possible, learners should feel like the environment is a safe one in which to fail, both in a technical sense ("This won't break my computer if I get it wrong") and a psychosocial sense ("This won't make me feel like a failure if I get it wrong"). Anxiety-reducing strategies such as those discussed earlier in this chapter may help to develop a safe atmosphere, but often library-based instructors will not have sufficient time in a workshop to develop the necessary level of trust with learners to fully engage in, for example, Kapur's concept of productive failure (2008). Therefore, adapting the concepts of failure-based activities to workshop instruction should draw on more general strategies such as the framework offered by Tawfik, Rong, and Choi (2015). Some practical applications of this framework could include: live coding (mistakes and all); faded examples (fill-in-the-blank-style code blocks; Mount 2021); having learners debug nonworking code; or having learners put functions together in new

ways not previously discussed. The instructor can also live-code or use live software examples and make mistakes, which they then acknowledge, narrate, and resolve (Carpentries n.d.).

All learning necessarily involves some setbacks and challenges; working with technology can introduce additional unfamiliar and frustrating issues into the learning process for beginners (and even for experienced users!). Scaffolding micro failures for learners in the digital scholarship classroom can help prepare them to encounter, process, and work through the types of challenges they are likely to encounter with a particular digital tool or method. As with all instructional strategies, failure-based learning must take into account the anxiety, enthusiasm, goals, and level of understanding of learners, so the strategies of remaining open to learners' affective responses, communicating with learners throughout the session, and periodically assessing understanding are essential in this context.

The teaching strategies explored in this chapter are meant to offer some insights into how learners' affective responses can be incorporated into workshop design and instruction. In order for the digital scholarship workshop to truly be a space of inquiry and possibility for a broad range of learners, they need to feel empowered to independently investigate and experiment. Designing for and addressing negative affective responses such as anxiety is a start, but can also be paired with strategies to encourage learner excitement and prepare them for future challenges in order to set learners up for future success with digital methods.

Note

1 See Kumar and Roued, "Critically Reflective and Lighthearted: The Keys to Learning Digital Heritage Skills," Chapter 16, in this volume.

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11 Workshops in Anti-Colonial Digital Humanities

Towards Building Relationships With Critical University and Community Movements

Kush Patel, Ashley Caranto Morford, and Arun Jacob

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> Respect. Reciprocity. Relationship. Responsibility. Restitution. We strive to use respectful language that avoids perpetuating racism, ableism, queerphobia, transphobia, body shaming, sexism, and/or other prejudices. We strive to recognize our own individual subject positionings, and to understand how subjectivity shapes our individual lived experiences, worldviews, and what we do and do not have the ability to speak authoritatively or personally about. We strive to respect experiential knowledge. We strive to keep our hearts open for correction and un-/re-learning.[1]

We opened our 2019 Humanities, Arts, Science and Technology Alliance and Collaboratory (HASTAC) workshop, entitled "Pedagogy of the Digitally Oppressed: Reprogramming Wikipedia to Decolonize Classroom and Community Learning," with these guidelines. The 45-minute session – held at the University of British Columbia (UBC) on unceded Musqueam (xʷməθkʷəy̓əm) territory – was in equal parts an imperative for building knowledge in community and a space to grapple with the seemingly impossible project of decolonizing educational practice with technology and the internet.[2] Centering on Wikipedia and its critiques of structural imbalances, namely, Siobhan Senier on colonial erasures (2014); Shannon Mattern on "Great Man" biographies (2015); Lori Brown on notability (2015); and Anasuya Sengupta, Adele Vrana, and Siko Bouterse of Whose Knowledge? Collective on image sharing and circulation in Wikipedia entries (2018, 2019), we asked two key questions in this discussion-based session: How might we build activist and collective coalitions that allow us to create and sustain digital footprints deemed

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"citable" by Wikipedia? How might feminist, queer, and anti-colonial sensibilities inform alternate engagements with Wikipedia, including, but not limited to, unpacking its genre of biographical writing? In addressing these questions, we went past the conventional use of Wikipedia in the classroom by discussing its limits with and through our institutional experiences, collaboratively drafting guidelines for critical Wikipedia pedagogy, and reflecting on community organizing possibilities in, and with, the format of workshops.

In her lessons from decades-long community organizing work in university and non-university settings, Maria Avila (2018) highlights four key principles to connect organizing and academic scholarship for progressive social change: (a) one-on-one meetings, (b) building a collective of leaders, (c) understanding and using power, and (d) ongoing critical reflection. Together, Avila structures these principles around a shared goal of building deep relationships that not only address structural inequities in research and teaching, but also orient us to mobilize power with a collective of practitioners, in her words, "to understand the web of relationships we need to build, as well as to understand challenges and opportunities for our engagement work" (2018, 29). This work is "slow work" that requires us to "ground our own narratives" (Avila 2018, 83 and 89), which has been a useful reminder for us in our anti-colonial digital humanities practice; a reminder that the workshops we conduct are interconnected, overlapping, and continuous spaces for anti-colonial digital humanities (DH) organizing and relationship-building.

The 2019 HASTAC workshop brought together participants both previously connected through related DH workshops and new to this type of organizing and pedagogy. The work of collaborative reading, annotating, and discussion that followed generated such reflections as "slow down and carefully think through the hard questions, the communities at stake, and the protocols (of Wikipedia)"; "critique the prominence of English as the dominant use language in Wikipedia and other online interventions"; "begin by asking: who has access to computer technology?"; and "build new structures from, on, and through anti-colonial protocols and epistemologies." Together, these conclusions circled us back to the guidelines with which we started and the territorial honoring and call to action with which we positioned ourselves geographically:

> These are the unsurrendered territories of the sovereign Musqueam Peoples. Drawing on the wisdom of Métis-Cree activist Kamala Todd, we firmly emphasize that this city and all cities within the territories of so-called Canada are Indigenous Cities (Todd 2015). While the Canadian nation-state continuously and violently attempts to claim the lands and waters of so-called Canada as what Aileen Moreton-Robinson (Goenpul) has called a 'white possession,' (Moreton-Robinson 2015) these territories are, have always been, and will continue to be Indigenous territories, and Indigenous peoples have always survived and resisted the atrocities of the Canadian regime. We have the responsibility to know, honour, and uphold the Indigenous laws of the lands and waters that we move within, and our partnership is committed to playing a part in challenging and dismantling settler colonialism and bringing into being anti-colonial presents and futures.

Reflecting on the Objectives of DH Workshops: Process as Product

As our collective work has continued on and transformed since our initial coming-together in 2018, our territorial acknowledgement has grown. We regularly open our workshop spaces by situating ourselves in place, space, and community, naming the complexities, precarities, privileges, and accountabilities of our positionings within these places, spaces, and communities. This practice now includes both recognizing the Indigenous lands many of us are living and learning within, and also speaking to the digital infrastructural environments, precarities, and situations that impact Queer Trans and 2S Black Indigenous and People of Color (QT2SBIPOC) communities within the various lands that we are in community with, including North America, the Philippines, and India.

In the broadening of our territorial acknowledgement to include a specifically digital acknowledgement, we follow a practice that various others engage in, including Adrienne Wong (2022) and Deirdre Lee (2020). Guided by the work of Wong and Lee, as well as by Indigenous scholars like Marisa Elena Duarte (2017) and Jennifer Wemigwans (2018), we recognize that many of the digital infrastructures we use to do our work are situated on and have been built from Indigenous lands all throughout the world. Indigenous environments extend from geographic places into digital space. In interweaving land and digital environments in our acknowledgements, we assert and affirm our responsibilities to Indigenous lands. Our commitment is to fight against colonialism and injustices against QT2SBIPOC communities, traverse both land-based and digital spaces, and be accountable to these responsibilities. This must be a core part of our pedagogy and praxis. Territorial acknowledgements are all too often tokenistic and performative. We strive to undo this harmful gesturing to embody in an ongoing way our digital territorial acknowledgement – for acknowledgement not to be a mere noun but, rather, a verb: a call-to-action, an active process.

Speaking to the process of ethical and community engaged curatorial initiatives, Deirdre de la Cruz says, "The process is the product" (2021; University of Michigan 2021). This idea resonates with our pedagogical practice and how we conceptualize DH workshops. In our time planning DH workshops together, we have repeatedly been confronted with the argument that our workshops are too centered on reflection and dialogue, and not focused enough on digital tool learning, hands-on skills building, and digital product creation. In 2018, for instance, we proposed a discussion-based workshop on anti-colonial DH pedagogy and received feedback that:

> [t]he review committee really appreciated the depth of knowledge represented in the proposal as well as the importance of the topic, while at the same time feeling that it might need more development to constitute a workshop per se. In particular, the hands-on component, which we are keen to see in all the workshops, felt like it needed more consideration. . . . Given the extent to which the proposal was oriented strongly towards discussion of conceptual issues surrounding digital pedagogy, we wonder if you would be willing to see it reconfigured for the upcoming spring, and consider offering it as a workshop in a subsequent year.[3]

This feedback suggests that there was too much focus on reflection and not enough focus on tools, skills, or product outcomes for our proposal to be considered a valid DH workshop. Indeed, this idea of the "hands-on" workshop – one that focuses not so much on discussion or process but, rather, primarily on digital tools and skills learning towards product building – is a common objective of many DH workshops, an objective that not only reinforces the traditional knowledge-skill binary in the humanities but also its corresponding and increasingly market-centered push for professionalization to address the so-called crisis of the humanities. In her keyword essay on skill, Miriam Bartha (2009) points out:

> Reorienting professional scholarly practice toward collaborative, community-based engagement requires rethinking and displacing the value hierarchies implicit in distinctions between professional and amateur, work and leisure, art and science. Community based arts practice, for instance, has elaborated extensive methods for bringing together professional and community forms of expertise, surfacing and developing skills, critical insights, and creative capacities within the group that temper, revise, and exceed possessive professional identities . . . In all these cases, bridging academic and nonacademic sectors requires recognizing the conceptual utility and limits of skills as a discourse, as well as the different values indexed by and attributed to skills across various domains.

In conversation with Bartha's critical and genealogical text, our workshops try to imagine and bring into view new possibilities of research and teaching away from the binaries of academic and applied work and towards their contextually grounded, structurally oriented, and community focused integration. In a world wherein colonial, capitalist, queerphobic, transphobic, ableist, casteist, and classist violences are perpetuated, reenacted, and transformed within and through digital infrastructures and environments (Ansloos 2018; Bailey et al. 2016; Benjamin 2019; Cotera 2015; Duarte 2017; Hamraie 2018; Kim 2018; McKittrick 2014; Murray and Hand 2015; Noble 2018; Risam 2015; Ruberg and Phillips 2018), taking the time to slow down and to collectively discuss and collaboratively rethink how we approach this work is urgent, necessary, and utterly important. Such discussions help digital humanists to ensure that we are building the skills to approach this work in an ethical and anti-oppressive way. Such discussions are not stripped from but are, rather, foundational to digital tools, products, and hands-on learning. How can we begin to ethically approach the using of tools to create digital products if we are not first and always grounded in a praxis and an approach to the work that is anti-oppressive? How can we work to stop the perpetuation of colonial violence in digital humanities and cyberspace if we do not first take time to mindfully and accountably discuss the colonialism entrenched in digital infrastructures? Marisa Elena Duarte provides a prompt reminder of how Indigenous peoples whose lands are within the so-called Americas have been actively oppressed by the legal systems, policy frameworks, and regulatory bodies of the settler-colonial state's capitalist communication technology companies from

having access to the technology infrastructures necessary for self-determination and sovereignty (2017). How might we foster the use of digital technologies to learn from, with, and alongside Indigenous discourse networks that settler colonizers have attempted to disrupt through limited media infrastructures, and help to support the accomplishment of community goals and desires?

We ask: what if DH workshops honored and centered process instead? We argue, then, that process is a product. In framing our reflection on DH workshop objectives through the lens of process as product, we recognize the immense capitalist ideologies and violences entangled in the term and concept of product. Indeed, part of the reason why we refuse the idea that DH workshops must be tool and product focused is because of the very capitalist ethos embedded in this idea itself. But this is a term we use here strategically, given the common focus on product creation in many DH workshops. We, therefore, use this language of "process as product" intentionally to turn it on itself, and to challenge and refuse capitalist conceptualizations of product and capitalist agendas often embedded in DH workshops.

By fostering and fighting for this approach to DH workshops, we align with the work and praxis of critical digital pedagogy scholar Jesse Stommel, who similarly asserts that "critical digital pedagogy must be less about what we can build and more about how we can mitigate and stop harm" (Benjamin et al. 2021). So too do we align with Sean Michael Morris's related assertion that digital humanists must think about people and individuals over design, and that the lens of the digital humanist must always be on humanizing pedagogy and praxis surrounding digital humanities (see Benjamin et al. 2021). We understand process as product within DH work as a centering of humanity – as a set of anti-oppressive ethics and morals towards living communities, ongoing acts of relationship building, continuous care work – acts, experiences, communities, and connections that may not be as concretely discernible outcomes of a DH workshop as, say, a website, map, or online archive, but which are verbs and embodied experiences that provide the foundations and nourishment for working within the digital humanities mindfully, responsibly, and accountably, in ways that seek to stop rather than perpetuate colonial harms. What if the process was the pinnacle and long-lasting, ongoing piece of a DH workshop? What would the field of DH look like then?

As part of constantly reflecting on and being mindful of our responsibilities and accountabilities as digital humanists, our workshops have focused on the collective creation of anti-oppressive and respectful research and pedagogy guidelines that seek to disrupt and undo harmful colonial legacies in digital scholarship and spaces, and to contend with and honor, instead, our ethical responsibilities. As one example, at DHSI 2021 (Digital Humanities Summer Institute),[4] members of the class community created a set of keywords and concepts for anti-colonial DH practices and pedagogy out of the selected course readings, involving specific citations, and demonstrating the value of citation politics for higher ed change-making. Since participants drew on and incorporated references from readings and discussions, this glossary also served as an annotated bibliography that centered the work, voices, and perspectives of anti-colonially minded, racialized, 2SLGBTQIA+, disability justice, and caste- and class-oppressed community members

and scholars. Here, we built on Raymond Williams's tradition of developing a social etymology of words in use (2015) and Benjamin Peters's addition to how keywords function within digital discourse (2016). The activity entitled, "DH Keywords, But Make Them Anti-Colonial," generated 250–300-word anti-colonial definitions of familiar concepts in DH pedagogical circles and spaces, such as "accountability," "archive," "assess(ment)," "care," "innovation," "intentionality," "interrogation," "kin/ship," "mentorship," "relationality/relationships," and "search." In this collective theorizing and writing, we worked to understand these keywords from an embodied and communal perspective, one that recognized the importance and ethics of citation politics in challenging, subverting, and re-claiming terms, concepts, and processes that have been intentionally used, co-opted, and exploited by institutions under the guise of change but, in actuality, to enable the systemic perpetuation of capitalist, colonial, and neoliberal purposes.

As another tangible example, at DHSI 2021, our workshop activities included a collective reflection on the DHSI "Statement of Ethics and Inclusion" (Wernimont and Nieves 2015, 2016, revised 2018, dhsi.org/statement-of-ethics-inclusion/) as it functions in fostering accessible online digital humanities environments. Since our first joint classroom work in 2018, we have engaged with the summer institute's ethics and inclusion statement both critically and pedagogically. In the latest iteration of this activity which took place online and across time-zones, we structured a collective and collaborative annotation of the statement, editing it and grounding it further in voice and contextual narratives. In the end, the workshop stood transformed as we deepened our advocacy for ethical and inclusive learning around matters such as including caste in the anti-discrimination policy; making transparent the institute's reporting protocol, accountability process, and redressal mechanism; and providing guidelines to make in-person and virtual presentations accessible to participants by centering disability justice principles. For us – workshop facilitators and workshop participants – the very act of writing these guidelines was a practice of skill- and discourse-building in the digital humanities; skills to think with the material, historical, and embodied locations of digital and community work and their role and value in program building.

Relationship-Centered Care and Conscientization as Freirian Futurities

In our recent work, we have reflected on the ideologies that have shaped our anti-colonial digital humanities practice with the intent to connect with, within, and across campus-community movements of democratic knowledge production (Morford, Jacob, and Patel 2021). Specifically, and following Paulo Freire's writings in "Cultural Action and Conscientization" (1970), we have come to frame this work as one of digital conscientization (Morford, Jacob, and Patel 2021), that is, a pedagogical process to name, resist, and disrupt the relations of domination that are often baked into the structures and use of computing tools in digital humanities scholarship. To ground and develop this critique, our workshop facilitations have so far centered on three interrelated pedagogical framings: media archeology;

community-focused digital storytelling; and online public knowledge and writing. Through media archeological studies, we have examined the colonial histories and political economies of popular computational tools employed within DH to critique their naturalized principles and practices. With digital storytelling, we have reflected on the process and ethical considerations of creating stories in computer-based platforms and distinct communities, focusing on copyright ethics and the public domain as related to archival and storytelling materials. By engaging with the politics of online public knowledge creation, we have worked with and on strategies to mobilize existing platforms for anti-colonial resurgence. Together, these framings have not only represented our interdisciplinary backgrounds, but have also enabled us to learn with related fields of pedagogical practice connected to critical university and community movements. Specifically, by naming care and conscientization as core tenants of an anti-colonial approach to digital humanities, we have attempted to personalize the field towards understanding digital media histories and genealogies, the infrastructures within which they come to be, the cultural politics that they make apparent, and the forms of pedagogical work that they inspire, including, but not limited to, academic and community workshops.

In and through each of these engagements, we have also been able to consider the ethical implications that are inherent to the production and reproduction of digital projects, including, but not limited to, questions of accessibility, accountability, and collaboration involving communities beyond the academy, who may not traditionally have been thought of as digital practitioners or who may not traditionally have been included in digital making spaces. Relationship-centered workshop pedagogy in DH, for us, includes bringing to light the invisible work and tacit knowledge that one is expected to have been inculcated in, in order to function optimally and keep the system functioning; it is what allows one to understand how technical infrastructure requires care workers to do their tasks in order for the infrastructure to run. By understanding system administrators, network technicians, and other hardware maintenance technology workers as machine-careworkers, Gabriele Schabacher suggests that the care work done on machines, namely, oiling, replacing parts, cleaning, and preventative maintenance, are part and parcel of the cultural techniques of care (2020, 79). Care work is repetitive work that goes on behind the scenes to make sure the system functions optimally, regularly, and with minimal or no service disruptions. The invisibilization of the cultural techniques of care that are involved in maintaining devices, machines systems, and infrastructures works its way into DH instruction and pedagogy in various ways. Christina Boyles et al. (2018) explain the intersection of precarity and labor relations in DH teaching and learning spaces.

In the design of our workshops, we take further inspiration from Sasha Costanza-Chock to think collectively and produce designs that leverage community knowledge, where success is not yoked to profit-generation, and where technical prowess is not antithetical to humanistic ethics and values (2020). By recognizing how "design justice" is fundamentally about power (Costanza-Chock 2020), the power in the design process, we ask: who wields this power, what do they do with it, and how do those decisions affect marginalized and oppressed peoples? We strive to

provide workshop participants with the knowledge base to think through and think about creating and designing digital humanities position statements, projects, and initiatives that uphold ethical design principles, equitable processes, and products to counter problematic systemic power structures. To think past and beyond universalist design affordances, that is, it is when the toolkits employed by designers are queered, when they are recalibrated to account for intersectional analysis along race, caste, class, gender, sexuality, disability, and geographical lines, that the universalist subjectivity is problematized, and the unique positionalities of the user base are accounted for.

What are the yet-to-be-addressed material and experiential dimensions of this futurity? Holding close Larissa Lai's understanding of solidarity work as an "ethics-under-construction" (2014, 99), we recognize that the work of engaging in anti-colonial practice and pedagogy is ongoing and messy. It requires that we continuously check in and reflect on how we can do better – for we always will have much to learn and much that we can and must seek to do better.

Currently, our collective has facilitated anti-colonial digital workshops and courses at HASTAC 2019 at the University of British Columbia, and at DHSI 2019 and DHSI 2021 at the University of Victoria. Workshop listings, durations, and foci include, but are not limited to:

(a) Digital Humanities Summer Institute (DHSI) 2018 (half day) on De-/Anti-/Post-Colonial DH Workshop with topics of Colonialism in DH; Anti-colonial DH Projects. Collectively-created workshop artifacts include research and pedagogy guidelines; reading list; and list of anti-colonial DH projects;
(b) HASTAC 2019 (45 min) on Reprogramming Wikipedia to Decolonize Classroom Learning. Collectively-created workshop artifacts include discussing the complexities of and limitations with Wikipedia editing; questions for pedagogy in light of these complexities; potential actionable steps for sustaining a critical Wikipedia praxis;
(c) DHSI 2019 (one day) on Media Archaeologies, Digital Community-focused Storytelling, and Online Public Knowledge. Collectively created workshop artifacts include cumulative reflections on each segment;
(d) DHSI 2021 (week-long) on Digital Coloniality; Accountability, Responsibility, Safety, and Care; Collaborative Interventions and Digital Subversions; Mutual Aid and Cumulative Reflections. Collectively created workshop artifacts include annotations and edits to DHSI Ethics and Inclusion Statement and a keyword project on Anti-colonial DH Pedagogy.

Thus far, then, our offerings have been housed within postsecondary institutional spaces located in the Global North. These spaces are often violent and inaccessible for so many racialized, low-income, migrant, and disabled community members, as well as for folks working outside of academia, and for those who are living and working in the Global South (Battiste 2013; Tuck and Yang 2012; Walcott 2020). We recognize that offering our workshops only within postsecondary settings is a shortcoming of our practice that we must be mindful of and work to address

moving forward. Our commitment to anti-colonial practice and pedagogy cannot truly and fully address digital oppression if it does not move beyond the confines of university spaces and Global North located institutions, and root itself in community environments, places, and movements. It is in community and beyond the constraints and surveillance of colonial institutions where pedagogies of the digitally oppressed will, are, and must truly emerge, develop, and be led.

Notes

1 Kush Patel, Ashley Caranto Morford, and Arun Jacob, "Space and Community Guidelines," *Pedagogy of the Digitally Oppressed: Reprogramming Wikipedia to Decolonize Classroom and Community Learning* Workshop, 2019 HASTAC conference, University of British Columbia, BC.

2 We understand decolonization in the lands of so-called Canada – where UBC is and where this HASTAC workshop took place – as Eve Tuck and K. Wayne Yang (2012) define the process: that is, "[d]ecolonization brings about the repatriation of Indigenous land and life; it is not a metaphor for other things we want to do to improve our societies and schools" (1). Like Tuck and Yang, we recognize and are critical of the common move in post-secondary institutions to co-opt the term decolonization without actively engaging in addressing the ongoing colonial legacies of universities and without actively participating in and committing to the "repatriation of Indigenous land and life" (1).

3 Personal correspondence, 2018.

4 To learn more about this course and view course materials, please visit the Pedagogy of the Digitally Oppressed Humanities Commons page at: https://pedagogyofthedigitallyoppressed.hcommons.org/

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12 Creating More Inclusive Spaces for African American Studies and Ethnic Studies in Digital Humanities Workshops

Jeannette Eileen Jones, Tony Frazier, Claire Jiménez, and Sarita B. Garcia

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Despite the increasing visibility of DH programs at Historically Black Colleges and Universities (HBCUs), Research 1 universities – like the University of Nebraska–Lincoln – disproportionately receive funding to create and sustain digital humanities projects and initiatives focused on African American and Black Studies. In 2019, the University of Maryland, College Park (UMD) received a three-year, $2,000,000 Andrew Mellon Foundation Award for the second phase of the African American History, Culture and Digital Humanities (AADHUM) initiative. One of the AADHUM's goals is to expand "research partnerships with nearby historically black colleges and universities (HBCUs)" (Graham 2019). More recently, in 2021, Jessica Marie Johnson and Sasha White at The Johns Hopkins University received a $300,000 planning grant from The Andrew W. Mellon Foundation for their project, Black Beyond Data: Computational Humanities and Social Sciences Laboratory for Black Digital Humanities. "By weaving together three digital humanities projects, Black Beyond Data connects the fields of digital humanities, Black studies, and data and computation to create a critical mass of scholars and research using digital humanities against racial injustice" (Wallach 2021). These awards are evidence of the excellent and pathbreaking DH projects led by leading scholars in African American and Black Studies. Moreover, these grants speak to the critical need for advancing African American and Black Digital Humanities in the academy and create spaces for Black DH scholars to collaborate and thrive irrespective of the designation or size of their institutions. This same

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logic extends to minoritized scholars working in Latinx Studies, Indigenous Studies, Asian American Studies, and Ethnic Studies.

What happens when BIPOC (Black, Indigenous, and people of color) scholars interested in digital humanities are employed at under-resourced institutions, colleges and universities without DH infrastructure, community colleges, or colleges with high teaching loads? Might this be a factor in why digital humanities has for decades been "so white," as Tara McPherson wrote in 2012. Ten years later, the visibility of BIPOC digital humanists has increased, with many of these scholars directing funded and unfunded projects that speak to a range of intersecting issues: race, gender, sexuality, ethnicity, immigration, gentrification, neoliberalism, etc. However, there exists a relative lack of grant support for BIPOC digital scholars who teach predominantly BIPOC students.

Yearly, the National Endowment for the Humanities (NEH) provides awards for faculty at Historically Black Colleges and Universities (HBCUs), which can be used for humanities research "leading to the development of . . . digital materials" (NEH). While the National Historical Publications & Records Commission (NHPRC) and the American Council of Learned Societies (ACLS) have grants dedicated to BIPOC content and issues, until fairly recently, there are no funds set aside for HBCUs, Hispanic Serving Institutions (HSIs), Tribal Colleges and Universities (TCUs), and Asian American and Native American Pacific Islander Serving Institutions (AANAPISIs). In December 2021, the ACLS launched its Digital Justice Grant program to:

> promote and provide resources for projects at various stages of development that diversify the digital domain, advance justice and equity in digital scholarly practice, and/or contribute to public understanding of racial and social justice issues. This program especially supports projects that engage with the interests and histories of people of color and other historically marginalized communities, including (but not limited to) Black, Latinx, and Indigenous communities; people with disabilities; and queer, trans, and gender nonconforming people. In this way, the program seeks to address the inequities in the distribution of access to tools and support for digital work among scholars across various fields, *those working with under-utilized or understudied source materials, and those in institutions with less support for digital projects* [emphasis ours]
>
> ("ACLS Digital Justice Programs" n.d.)

Also launched in 2021, the NHPRC-Mellon Planning Grants for Collaborative Digital Editions in African American, Asian American, Hispanic American, and Native American History and Ethnic Studies has "an overarching goal to broaden participation in the production and publication of historical and scholarly digital editions." Accordingly, the program is designed to "provide opportunities that augment the preparation and training of Black, Indigenous, and People of Color (BIPOC) new to the work of historical documentary editing, especially those currently working in history or related area and ethnic studies departments" and to

> *stimulate meaningful, mutually beneficial, and respectful collaborations that help to bridge longstanding institutional inequalities by promoting resource sharing and capacity building at all levels* [emphasis ours], and that build into their plans a variety of means for achieving meaningful community and user input and engagement.
>
> ("NHPRC-Mellon Planning Grant" n.d.)

Undoubtedly, these programs will help bridge the gap between overfunded and underfunded BIPOC digital humanities scholars while supporting digital scholarship in African American Studies and Ethnic Studies. Moreover, they will encourage ethical and mutually beneficial collaborations between BIPOC scholars across Predominantly White Institutions (PWIs), HBCUs, HSIs, TCUs, AANAPISIs, and other minority-serving institutions.

In 2017, when scholars at the University of Nebraska–Lincoln (UNL) began envisioning a summer institute dedicated to research in digital ethnic studies, these NHPRC and ACLS programs did not exist. Yet, with the same concerns articulated in these organizations' recent calls for applications, they set out to create an experience that would support their colleagues at minority serving institutions and lead to potential collaborations. The outcome was the ACLS-funded New Storytellers: The Research Institute in Digital Ethnic Studies (aka Digital Ethnic Studies Institute or New Storytellers) planned and convened by five UNL faculty PIs – Joy Castro, Jeannette Eileen Jones, Margaret Huettl, Kenneth Price, and William G. Thomas III – graduate research assistant Claire Jiménez, and members of UNL's Center for Digital Research in the Humanities (CDRH) – Brett Barney, Karin Dalziel, Laura Weakly, Greg Tunink, Sarita B. Garcia, and Kaci Nash. During the last phase of the Institute, who included graduate research Veronica Nohemi Duran to the team. The Institute's aim was to "bring a diverse group of scholars together to share, learn, and create intensively." To that end, the organizers brought together 22 participating scholars from federally recognized Minority-Serving Institutions (MSIs), in a virtual format to discuss the state of the field and work on their own digital projects. These colleagues represented HBCUs, Hispanic Serving Institutions (HSIs), Tribal Colleges and Universities (TCUs), and Asian American and Native American Pacific Islander Serving Institutions (AANAPISIs). The Institute ran May–July 2021.

The participants came to the Institute (see Figure 12.1) with varying skill levels using digital humanities tools or engaging in digital humanities pedagogy. Their scholarly expertise was wide-ranging including Ethnic Studies, African American Studies, Black/Africana Studies, U.S. Latinx Studies, Asian-American Studies, Native American/Indigenous Studies, and Latin American Studies. Despite their diversity of DH experience and scholarly training, the participants shared a common goal: to explore the parameters and practices of "digital ethnic studies." Sessions featured guest presenters who delved into digital humanities work that attends to the experiences of minoritized groups, primarily in the United States, but not exclusively. Weekly topics included: Feminism and Queerness in Game Studies; Recoding Indigeneity: Digital Native American and First Nations Studies; The Structure of Storytelling, Digital Humanities at the Border; and Decolonizing the Archive: Listening to New Voices.

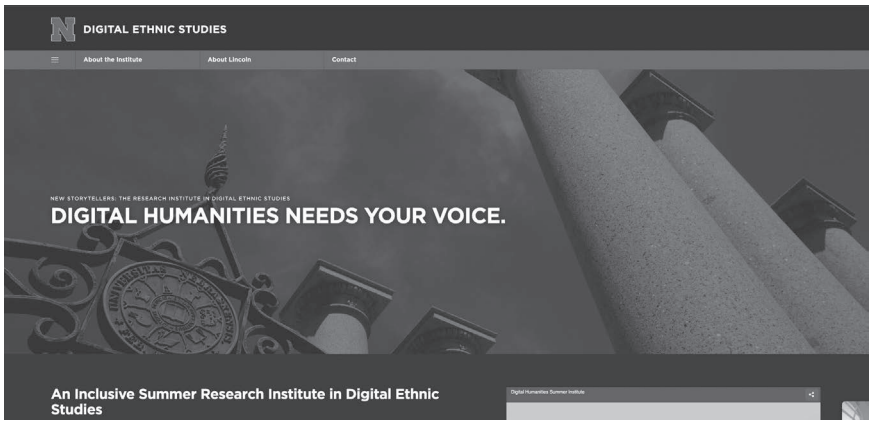

Figure 12.1 Homepage for the Research Institute in Digital Ethnic Studies (UNL), https://digitalethnicstudies.unl.edu/digital-ethnic-studies-summer-institute

One critical component of the Institute was exploring African American and Black Studies in the digital realm, featuring presentations by Roopika Risam, Project Director for "The Global Du Bois" (Risam 2019); Jessica Marie Johnson, Project Director of "Life x Code: DH Against Enclosure" (Johnson n.d.); Shearon Roberts, Project Director of "My Nola, My Story" (Roberts et al. 2020); and William G. Thomas III and Kwakiutl Dreher, collaborators on *Anna* (Burton, Dreher, and Thomas 2018) and *The Bell Affair* (Burton, Dreher, and Thomas 2022). Risam's reflections on digital humanities and African American studies were part of Week I: What Is Digital Ethnic Studies? during which she shared her insights on best practices for doing digital ethnic studies. Her presentation included discussions of several innovative projects in Black Digital Humanities and essential readings shaping that field.[1] Thomas and Dreher presented the plenary session "Digital Media Storytelling Technique and Practice," during Week 5: The Structure of Storytelling. Thomas and Dreher shared their experiences as Writer, Co-Producer and Screenwriter, Co-Director, Co-Producer, Actor, respectively, on their short film *Anna* (2018), as well as their work on *The Bell Affair* (2022). Johnson led Week 6: Black Digital Humanities and Black Code (see Table 12.1), where she showcased and discussed African Diaspora, PhD, The LatiNegrxs Project, Electric.Marronage, Center 4 Solutions to Online Violence, and Queering Slavery Working Group. Her presentation also included an activity where participants worked with plantation accounting documents created in the eighteenth century that became foundational to "scientific management" practices. Roberts led Week 7: Lessons from Katrina: Repair Work in Digital Humanities Media, where she emphasized the importance of interviews with community members in digital projects that center the lived experiences of African American and Black peoples. She highlighted the work that she and her students at Xavier University conducted to

Table 12.1 Research Institute in Digital Ethnic Studies Week 6 Schedule

Week 6 (28 June–2 July)	Black Digital Humanities and Black Code
Monday, 2–3:30 CST	Jessica Marie Johnson, TBA (also recorded for later viewing)
Monday, 3:45–4:45 CST	Participant Research Design and Q & A (1 hour)
Asynchronous (pre-recorded and on-your-own activities)	Designing Collections in Omeka with Garcia, Weakly, and Nash, pts. 1 & 2 (45 minutes total)
	Individual Project Development (1.5 hours)
Tuesday 2 pm CST	Participant Q &A with Garcia, Weakly, & Nash (1 hour; optional)
Thursday 2 pm CST	Digital Methods Plenary with Johnson and Roberts moderated by Jones, with special guest participant Mark Button, UNL Dean of the College of Arts & Sciences (1 hour)
Friday 2 pm CST	Neatline Mapping Workshop with Claire Jimenez (1 hour; recommended)

Assignments/Readings

- Selected readings from Jessica Marie Johnson and Mark Anthony Neal, *Black Code: A Special Issue of The Black Scholar* 47, No. 3 (Fall 2017)
- Johnson, Jessica Marie. "Markup Bodies: Black [Life] Studies and Slavery [Death] Studies at the Digital Crossroads." *Social Texts* 36, no. 4 (137) (December 1, 2018): 57–79. https://doi.org/10.1215/01642472-7145658
- Williams, Daryle. "Digital Approaches to the History of the Atlantic Slave Trade." *Oxford Research Encyclopedia of African History*, November 20, 2018. https://doi.org/10.1093/acrefore/9780190277734.013.121
- QSWG: Queering Slavery Working Group (Tumblr)
- Freedom on the Move (Database)
- "Every Three Minutes" (Twitter)
- Vincent Brown, *A Slave Revolt in Jamaica, 1760–1761: A Cartographic Narrative*

capture stories and voices "of communities of color that call New Orleans home" (Roberts et al. 2020). Collectively, Risam, Johnson, Roberts, Thomas, and Dreher asked participants and organizers to consider the various digital formats, tools, and platforms with which we can tell Black stories and visualize Black experiences, past and present. They called on participants to eschew dumping "Black" content into a digital project and instead to curate digital projects that center Black Studies approaches and Black worldmaking.

This chapter provides four perspectives on the Institute's efforts to create more inclusive spaces for African American Studies and Ethnic Studies in DH workshops. Jones ruminates on her own DH work and discusses how her trips to three HBCUs and one CUNY institution influenced her approach to co-organizing the Institute. Jiménez reflects on her own work as an organizer and her DH work in Puerto Rican literature and Afro-Latinx Studies, emphasizing the synergies she saw in the Institute's mission. Sarita B. Garcia, Junior Web Developer in UNL's Center for Digital Research in the Humanities, details her experiences creating

instructor materials on DH tools and web development for the participants. Lastly, Tony Frazier, Associate Professor of History at North Carolina Central University, provides his views on the Institute as one of the Participant Scholars and as a scholar of African American history and the African Diaspora in Europe.

Together, Jones, Jiménez, Garcia, and Frazier bring to the fore how their experiences as Black and Latinx scholars informed their immersion in the Digital Ethnic Studies Institute. Jones reflects on her participation in listening tours at four MSIs where she interacted with her colleagues working in African American Studies and Ethnic Studies. She explains what she learned from interacting with those faculty members and librarians and how those meetings shaped her approach to her own DH work and co-planning the Institute. Garcia discusses her experience as a first-generation college and graduate student, contemplating on the racial digital divide that complicated her training in digital humanities. She then shares her thoughts on her position as a technology instructor for the Institute. Frazier expounds on his positionality as a scholar at the HBCU and his desire to engage his students in DH while pursuing his own digital project. Lastly, Jiménez recounts her own experiences with the digital divide in a New York City high school and her journey to digital humanities. She highlights her graduate work at UNL and her own collaborative digital project, the Puerto Rican Literature Digital Archive, funded by a Mellon Foundation grant from the US Latino Digital Humanities Program at the University of Houston.

Jeannette

In full disclosure, I never attended a Historically Black College or University (HBCU); although several family members – cousins on both sides of my family – did graduate from iconic Southern Black colleges such as Spelman, Howard, Tuskegee, Norfolk State, and Prairie View A&M, to name a few. Thus, when my colleagues and I decided in 2017 that we were going to visit HBCUs, MSIs, HSIs, and Tribal Colleges, I relished the opportunity to travel to a few colleges (Fisk University, Huston-Tillotson University, and Xavier University) where generations of Black folks had tread. I also decided to return to New York City to visit CUNY College of Staten Island. As a Black girl raised in Queens and Nassau County, Long Island, I was no fan of Staten Island, which I had perceived as conservatively white. I viewed The Wu-Tang Clan as a Black anomaly on the island. So, imagine my surprise in learning that the borough contained a certified MSI.

The listening tours, which included these visits, were central to our conceptualization of the Institute, as we rejected the "field of dreams" approach ("if you build it, they will come"). We needed the input of scholars at these institutions about how to build our institute. We wanted to hear from scholars how they assessed the position of minoritized scholars in digital humanities, especially those scholars teaching at institutions that fell into the four categories mentioned earlier. We learned how many of them attended digital humanities workshops, conferences, and institutes, and what support they received (if any) from their respective institutions to immerse themselves in DH via these venues. From these conversations we learned one constant: a feeling of

invisibility of the pathbreaking DH work being done at various minority-serving colleges and universities, with few exceptions. Howard University, for example, received funding for their 2018 MMUF Summer Institute & Digital Humanities geared towards training undergraduate fellows. Yet the work of Professor Nikki Taylor, PhD, chair of Howard University's Department of History and the five inaugural fellows – Carmen Crusoe, Shallejah Evans, Aiesha Muhammad, Jabril Murphy, and Marquis Taylor – was relatively unknown among the white-dominated digital humanities community (Smith 2018). Currently, Crusoe is a PhD student in Northwestern University's Department of African American Studies, where her research interests include mapping/data visualization, and digital humanities. Xavier University (Louisiana) received a $35,000 NEH grant for 2017–2018 to develop a "digital humanities minor that will allow students to learn technical and data science skills while exploring issues of digital justice and access." KimVaz-Deville, professor of education and Associate Dean of the College of Arts and Sciences at Xavier, administers the funds to support the minor in digital humanities, data science, and digital justice ("Creating a Digital Humanities Curriculum" n.d.).

As a co-organizer, I understood that my joint-appointment in the Department of History and the Institute for Ethnic Studies, the latter in which I am a program faculty in African & African American Studies, positioned me well to help shape the Institute's African American Studies content. In addition, my long-time membership in and professional service to the American Studies Association's Digital Humanities Caucus exposed me to a wide range of DH projects that attended to the intersections of race, gender, sexuality, and ethnicity. Thus, my African American Studies, Black DH, and DH networks were extensive enough to tap for presenters. My visits to Fisk, Huston-Tillotson, Xavier, and CSI (CUNY) provided me with a more comprehensive network of Black scholars of DH and scholars of Black DH, who allowed me to see the gaps in my own DH practices and collaborations.

During the 10-week Institute, I was excited by the exchanges that the Participant Scholars and the co-organizers (including me) had with the presenters working in African American and Black digital humanities. I took copious notes that helped me revise some of the content for my own collaborative project *To Enter Africa from America* (https://africafromamerica.unl.edu/)[2] (Jones et al. n.d.). I enjoyed moving between my roles as co-organizer, presenter, facilitator, and learner. Each guest presenter – whether scholars of African American Studies or Ethnic Studies – challenged me to expand my DH knowledge and tools, as well as to dream bigger about potential future DH collaborations. As part of the organizers' commitment to establishing one-on-one mentoring relationships with Participant Scholars, I agreed to work with four colleagues upon request. We began meeting once a month, starting in September and ending in May of 2022. (I met with one colleague in August as well.) However, I anticipate that I will meet with these colleagues long after the one-year mentoring program ends. I feel as if I have expanded my academic circle and have developed career-lasting connections beyond the Digital Ethnic Studies Institute.

Sarita

As a first-generation college student, and later graduate student, I embraced the pursuit of my education in digital humanities with excitement, but was apprehensive and confused most of the time. I did not know what was truly expected of me, even though I attended workshops, lectures, writing sessions, and multiple orientations. My university offered a graduate certificate in digital humanities, and I knew that my work as a graduate research assistant at the Center for Digital Research in the Humanities (CDRH) would eventually help me answer a lot of questions about my own research.

But the reality of pursuing something I knew little about manifested into countless hours spent in the computer labs long after class had ended. One example of this came when learning Geographic Information Systems, or GIS. The disparities between my peers and I, as we learned ArcGIS (a proprietary program for mapping) one semester, lay bold the inequities between my peers and I: what seemingly came seamlessly and naturally to them, turned out to be one of my biggest challenges. Unlike my peers, I was not a former undergraduate student with extensive *undergraduate* coursework in GIS and digital humanities. I stayed late into the evening to finish my GIS labs, trying to make sense of words and concepts I did not understand, long after many of my classmates had left. Many had the benefit of already having used GIS tech in their undergraduate classes. I did not. I just knew I liked maps.

Today I am a junior web developer at the CDRH. When I was asked to help run DESI, I understood that participants in the institute would be coming in with excitement much like my own, and their experiences around tech would likewise mirror my own in many ways. I knew that the work would appear intimidating and maybe even frustrating. As a result of COVID-19, like many other in-person events, our institute was adapted for an online course, and we made lessons and content in a Moodle content management system/site (CMS) through Reclaim Hosting. We also opted to give each of the participants their own Reclaim account, so that they could experiment and create their own sites and test out their ideas with various programs and web spaces. The goal was to help them create digital "somethings": a dataset, a website, a collection of interviews, or an online space for engagement, to name a few.

One thing we really wanted participants to take away from this workshop was that digital humanities and technology are malleable: you do not need intense and intimidating content-knowledge of complicated programs or code to achieve your goals. Likewise, we emphasized doing a lot of the thinking up-front, like thinking consciously about metadata schemas or coming up with naming conventions early on so that when the time came to add the pieces, the process would be as seamless as possible.

I took my own experience as a student and used it to help workshoppers approach technology and their projects. I emphasized the fact that, fundamentally, keeping things simple will often work really well. For example, high powered mapping programs like ArcGIS might be *too* powerful: could their research questions be

answered with Leaflet or a simpler mapping program instead? I also wanted participants to know that the finesse of the final product comes in the tweaks and the mistakes. The act of breaking a site might be disheartening, but could also be a sign that at least *something* has changed, and that we (together!) have the ability to fix it. What is done can be undone and redone many times over, and going at your own pace is perfectly okay. For DESI, doing the work meant acknowledging the unknowns of our own skill sets but being open to learning more and listening to our peers.

Tony

Once I learned about New Storytellers: The Research Institute in Digital Ethnic Studies workshop at the University of Nebraska–Lincoln (UNL), I quickly made plans to apply for the program. This opportunity appealed to me as a scholar at a Historically Black College and University (HBCU) with an interest in digital humanities and storytelling. One of my chief aims while at the institute was to build my skills and apply more advanced digital tools to my ideas about African American history. When I first got to the Digital Ethnic Studies Institute, I thought I knew with certainty what my digital project would be about – digital mapping. The digital project I sought to explore and develop at the institute focused on the 1839 Amistad slave ship revolt. The scope of this project had two main goals at its outset. First, I wanted to map the travels of the Amistad and the enslaved captives from Africa to Cuba and into the United States. Second, I wanted to re-imagine the Amistad narrative beyond just a court case and develop broader themes from the narrative of the enslaved captives in my digital project. My preliminary work on the Amistad project included collecting primary sources and secondary sources on the revolt. My goal with the fellowship was to gain more ArcGIS skills to illustrate the ship's travel path and subsequent capture. Other storytelling ideas included using illustrations of the Amistad captives as part of the story map project.

When I arrived at the summer institute, I imagined I had nailed this project conceptually and was ready to start my work. However, through readings, guest speakers, and conversations with co-PIs, it became clear to me that although my project at its base was in good form, there were other components to implementing a digital project that I had not considered in my original project submission. I was limiting the broader scope of my project with the singular focus on mapping. In the presentations and discussions with my cohort I saw opportunities to expand my thinking beyond just mapping. It became clear at the summer institute that my Amistad project offered multiple ways in which to reimagine the scope of my digital humanities project. In my research I discovered more material about the Amistad revolt and began to ask myself a series of questions to move my project forward. What can I add to the Amistad narrative? What digital humanities output will illustrate my contribution? What has been less emphasized in the Amistad story? Where are other points of entry for my project? I came to see the value of a standalone website using Omeka for the Amistad project. The more time I researched my project other themes emerged to offer a possible bridge to the La Amistad mapping project[3] through ArcGIS. These

themes included American newspaper accounts of the Amistad revolt, searching personal writings of African American abolitionists for any personal connections to the Amistad captives. Other rich topics that I began to think about adding to my project include mapping the tour of the Amistad captives to raise money for their return to Africa, the intersection between slave ships revolts cause by threat or fear of cannibalism enacted by whites onboard slave ships, child slavery in nineteenth-century Cuban slave ports, African secret societies, and a display of the Amistad captives images.

The sessions at the 10-week Digital Ethnic Studies Institute advanced my knowledge of digital humanities, improved my skills, and added to my growth as a digital humanist. Digital humanities is important to my professional responsibilities as I teach African American history and broader themes in African Diaspora history courses at North Carolina Central University. The ability to share digital tools in the classroom with my students is an important aspect of the institute. Several digital tools including JS Knight lab Story map and JS Knight lab Timeline allow me to teach students new ways to disseminate history. The students develop individual and collaborative project-based learning assignments. These assignments build connections between me and the students. The entire experience at the institute has helped shape me as a scholar and a teacher. The chance to think creatively about the digital was the most important part of the summer for me.

Claire

While working as the project assistant for the Digital Ethnic Studies Institute, I kept thinking about the importance of community in the classroom and my complicated relationship with technology growing up. In 1997, I was accepted into a competitive specialized technical high school in New York City that had a reputation of sending its graduating class to strong colleges. Of course, my parents were overjoyed; it was a "safe," and free, seemingly "prestigious" public school. But as the teacher guided us through a C++ program language or Computer Aided Design lesson, I never felt as if I fit in those classrooms which were predominately White. And I most certainly never felt safe. Some of the students who excelled in the classroom were also the ones spitting out racist insults on the bus. More so, I never felt the connection between the technology I was supposed to be learning and the issues that I cared most about in my life.

It was not until much later as a young teaching artist that I would appreciate the ways in which technology could be used in combination with the arts to deliver the social emotional outcomes for the young people I was teaching. While working as a coordinator at the Gerard Carter Cornerstone located in the Stapleton Houses, in Staten Island, New York, for example, I teamed up with a local music engineer from the organization Projectivity to create a hybrid poetry and music production class for the middle and high school participants. Students learned how to create their own beats and to record their poetry over music. Watching the pride grow on their faces as they heard their recordings played back, I realized how powerful technology could be in the classroom.

Later while studying at the University of Nebraska, I met a fellow PhD student Linda Garcia Merchant and learned about her extraordinary work with the digital archive Chicana Por Mi Raza. Her project made me interested in creating a digital archive documenting Puerto Rican literature. Patiently, Linda trained me on different digital tools, showed me how to prepare before going into the archive, and mentored me when I applied for grants to secure more training on digital humanities. Besides Linda's careful and loving mentorship, simply seeing another woman who looked like me doing the work was inspiring. Unlike my time in high school, the mentorship made me feel as if this was a field I could belong in.

What I've found is that digital humanities is one of those fields in which you must learn to be comfortable with not knowing everything immediately. It is a field in which you also must feel comfortable with problem solving, with working with others and with asking questions. But sometimes, when other power dynamics exist, asking questions can make people with less power feel more vulnerable. Creating community and safe spaces for the institute was then essential.

During the Institute, listening to Jessica Marie Johnson's presentation was particularly powerful and helpful to me with my own work on the Puerto Rican Literature Project. One of the goals of our digital archive is to highlight the voices of Black, Queer and/or Trans Puerto Ricans who have long been excluded or undocumented from Puerto Rican literary history. But our team also had to grapple with the complicated history of how Puerto Ricans identify racially and with the question of how to document race without reproducing the same violences of former archival practices in which race itself was used as a tool and technology to dehumanize and terrorize Black people globally. Johnson's presentation was invaluable, because she invited participants to annotate and critically engage with old plantation accounting documents from the eighteenth century, highlighting the ways in which, as scholars, we can make visible the racism of these early archival practices, while also troubling their logic. I have to add that it was also a very moving and powerful experience for me to see an Afro-Puerto Rican/African American digital humanities scholar presenting on this work.

I thought about this particular moment and my early formative high school experiences frequently throughout the institute. I wanted to make sure that I listened to the participants' concerns and made them feel welcome in the same way that Linda had welcomed me. As the assistant, I was in charge of coordinating sessions, delivering program updates and answering participant questions that sometimes expressed confusion about using different digital platforms and tools. My goal when working with other scholars was always to make them feel comfortable, to assure them that these were tools that they could use, precisely because I did not want to reenact the same violences I experienced in the '90s in those all-White high school classrooms. I wanted for participants to feel like this was a space in which they could ask questions, fail, learn, and ultimately, succeed.

Conclusion

The virtual workshop space that constituted New Storytellers allowed the Co-PIs, the CDRH staff, and the participants to create a community based on reciprocity. While there was a clear structure for each workshop – welcome, updates, introduction of presenter, presentation, and facilitated Q & A – the conversations among *all* participants respected no artificial hierarchy. In many respects, the Q & A sessions resembled dialogues between presenters, the PIs, and the other participants. We respected each other's expertise. We operated from the assumption that we could learn from each other, often deferring to one another on any given question. As a result, several participants expressed feeling a sense of unity with the PIs, presenters, and their cohort. This was fitting, as one goal of the Institute was to strengthen our (e.g., participants, PIs, and presenters) commitment to further diversifying DH practitioners and partnerships across institutions.

No format is without its challenges. The virtual format prevented a more intimate setting that often fosters more fluid conversations. Coming on and off "mute" can at times be clumsy and interrupt the natural flow of a conversation. Also, weather phenomena including storms that led to power outages, as well as spotty internet connections, disrupted some participants from engaging in all the workshops. However, the PIs and CDRH staff anticipated such, taping several of the live presentations and making them available afterwards on a password-protected platform. Also, realizing that time might be an issue for several of the participants, we kept the workshops to no more than 90 minutes long. In addition, the CDRH staff pre-recorded instructional videos that participants could watch once or multiple times at their leisure. Lastly, CDRH staff held virtual office hours to assist participants with building their projects or to answer any technical questions.

Our New Storytellers community did not disband after the 10-week gathering. For example, the Co-PIs and CDRH staff agreed to enter into mutual mentorship relations over the 2021–2022 academic year. (Jones has established mentoring relationships with four participants, two who work in African American and Black Studies.) In addition, there was a planned Digital Ethnic Studies Institute retreat at the University of Nebraska, UNL April 27–30, 2022 unless COVID-19 prevents such a meeting. Fortunately, that retreat took place with only a a few participants unable to travel to Lincoln. Over a full two-day period, we shared meals and beverages, worked in a common library space, toured the UNL campus, and met in smaller group meals to brainstorm our projects. We hope to build relationships that last beyond 2022.

While the Institute was ACLS-grant funded, we as co-authors are mindful of how we situate our intellectual work about Black folks. We saw firsthand that much of the work being done by our peers at MSIs directly engaged Black communities and Black people as repositories *and* producers of knowledge. In one case, an Institute participant named Black community elders as a part of the project team, similar to how Roberts interacted with the Black New Orleans community. During the Institute, we discussed ways to seek remuneration for them wherever possible, *in addition to* acknowledging them in the project. Oftentimes, funding to do this work came only from college and university grants. Yet, these projects had an indelible

impact on both academia and Black communities. Our MSI colleagues were not alone. Many DH projects at Research 1 universities, including UNL, started the same way. The Institute allowed us space to discuss these similarities, but remain mindful of the systemic inequalities that have privileged the R1 in grant-making.

In 2014 Emory University's Center for Digital Scholarship "in collaboration with the HBCU Library Alliance" brought together scholars from 20 HBCUs to attend the HBCU Summer Institute for Digital Scholarship (Miranda 2015). In 2020, faculty from Grambling State University's Departments of English and History received a $92,919 NEH grant "as part of a three-year innovative curricular initiative for a program in the Digital Humanities." Co-directed by James Clawson and Edward Holt, in collaboration with Roshunda Belton and Catherine Bonner, the grant will fund the design and implementation of "an interdisciplinary minor and host a series of workshops to train humanities faculty in pedagogies and technologies appropriate to the Digital Humanities" (USA Today Network 2020). It is important to note that digital humanities work (nationally-funded and unfunded), often with a focus on African American, Caribbean, and Black Diaspora Studies, continues to flourish at HBCUS. However, as Johnson and Neal (2017) write, we must "reject formulations of Black Studies that tie intellectual production only to institutional structures or the digital humanities only to grant-seeking projects with university affiliations." We believe that although we are invested in digital humanities and Black Studies, our work recognizes "intellectual production" that occurs outside of academia.

Notes

1 For example, Risam suggested her co-edited volume with Kelly Baker Josephs, *The Digital Black Atlantic* (2021), which was published in the Debates in the Digital Humanities series.
2 TEAA is a collaborative digital research project led by Jones as Project Director, and Kaci Nash, who serves as the Project Manager. The lead collaborators on the project are Nadia Nurhussein, Nemata Blyden, and John Gruesser.
3 "La Amistad" is currently under construction. Frazier plans for the site to go live within the next five years.

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13 A Design Justice Approach to Creating Equitable Workshops

Elizabeth Grumbach and Spencer D.C. Keralis

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In 2015, Roopika Risam and micha cárdenas co-taught the HILT (Humanities Intensive Learning and Teaching) course "De/Post/Colonial Digital Humanities," and from that course emerged "Critical and Creative Precepts for Digital Humanities Projects," a living document "on designing best practices for digital humanities praxis committed to social justice" (Risam et al. 2015). Our intention here today is similar: to contribute to the ongoing conversations and legacy of our colleagues that are engaged in social justice digital humanities work, in what Risam and cárdenas call "the long game of digital humanities." Justice-oriented projects and platforms, like the Risam-cárdenas project and Mukurtu (mukurtu.org), built to address community-oriented needs, reflect Sasha Costanza-Chock's call in *Design Justice* to dismantle the matrix of domination. As another example, Torn Apart/Separados (https://xpmethod.columbia.edu/torn-apart/volume/2/), a project which documents the locations and expenditures of ICE holding camps in the U.S., embodies the collaborative mobilization of scholars and technologists to build sustainable infrastructures which "equip broad social awareness and help in global critical situations" (Ahmed et al. 2018). Drawing from Black feminist thought leader Patricia Hill Collins, Costanza-Chock invokes a new form of design that addresses the intersectional forces of oppression and "challenge[s] designers to think about how good intentions are not necessarily enough to ensure that design processes and practices become tools for liberation" (2020, 6). We argue that applying the principles of design justice to the development and implementation of digital humanities workshops creates a learning environment that is non-hierarchical, non-unidirectional, and more holistically experiential. Establishing an equitable learning environment as the bedrock of digital humanities pedagogy, project development, and community building is essential to manifesting a digital humanities grounded in justice. For us, the long game of digital humanities is liberation. We propose that design justice offers one means of developing an emergent pedagogy of liberation.

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As a pedagogic mode, workshops have a long way to go to achieve this aspiration. In the accelerated, technology-centered learning environment of 21st-century academia, workshops and one-time information literacy instruction – the workshop analogue in libraryland – act as a sort of pedagogic spackle, used to fill in the holes left in curricula simultaneously hide-bound by tradition, and torn into incoherence by the tectonic forces of the conflicting priorities of the neoliberal university.[1] At their best, workshops serve as an *amuse-bouche* to tempt learners to explore further. At worst they are overwhelming data dumps, or exercises in "buttonology" (Russell and Hensley 2017), sublimely unsatisfactory for both facilitators and participants. We aspire to more than these unsatisfying options. Kevin Gannon describes teaching as "a continuing pedagogical practice rather than a set of static characteristics" (2020, 5). We seek to apply this principle to a reconception of the DH workshop. Our ideal workshop is more than 20-ish individual learners performing a fixed list of tasks, in a finite period of time. Ideally, a workshop creates an interdependent network of learners who will continue to interact and support each other after the workshop ends. If we're honest, though, this rarely happens.

Given that many, if not most, workshops are taught by staff – that is university employees not on the tenure track, or in roles typically seen as *supporting* research and teaching faculty, including the myriad alt-ac positions that have emerged over the past decades (for example our colleagues Tarpley, Sumpter, and Hart discuss their experiences in Chapter 2 in this volume) – herding cats after a workshop to maintain and cultivate continuing learning is generally not part of the facilitators' job duties. Moreover, the positionality of staff facilitators can cause the workshop to replicate the structural hierarchy of the university that creates a separate and unequal relationship between faculty and staff; a relationship that is frequently oppositional, and not infrequently elitist, paternalistic, and hostile. The disdain with which research faculty regard librarians, staff, and teaching faculty is well documented, most recently in the 2020 Ithaka S+R report "Supporting Research in Languages and Literature," which made clear that humanities faculty do not recognize staff as partners in research or projects. In fact, humanities faculty see themselves as entitled to the labor of staff to complete their personal research priorities. This culture of entitlement extends to workshops; both authors of this essay have found themselves, when attending workshops for their own professional development, corralled by faculty to help them with tasks, or even volunteered without notice by faculty facilitators to help teach others in the workshop. Given that this hierarchical, paternalistic culture permeates universities, how can we reshape the workshop to disrupt the assumptions regarding each other's positionality that faculty, staff, and students bring with them into the workshop setting?

One path forward is to model in the workshop how we should be behaving in the institution. Using community organizing principles – especially those of community-centered design, mutual aid, and emergence – for this work could not only lessen the pressure to provide additional labor, but also sustain the path forward to equity and justice in the profession. Ironically, as DH becomes more

institutionalized, we become less aware of DH's positionality vis-à-vis the "dirty gears" of academia (Greenspan 2019). It is time to "consider infrastructure much as we used to think about culture," or, perhaps, to bring a consideration of *both* infrastructure and culture to the construction of communities of care (McGrail et al. 2021, xi). We propose that we allow ourselves to return to that awareness of positionality and (re)create a (self)conscious space of reflection on the architectures of power that enable, reward, and support DH work.

Systemic change, of course, is a long game, and we're not alone in seeing pedagogy as a key arena in which that game is played. Indeed, other authors in this collection situate workshop pedagogy within larger anti-colonial and social justice movements (Jones et al. 2023; Patel et al. 2023). As an interim strategy, we imagine reframing the workshop as a form of mutual aid. Legal scholar Dean Spade describes mutual aid as "collective coordination to meet each other's needs, usually from an awareness that the systems we have in place are not going to meet them" (Spade 2020, 7). Mutual aid puts responsibility for the failure on the system, not the individual. We need workshops, not because we're unskilled or underprepared for our roles, but because our institutions, both where we received our training and where we toil, fail to provide us with the professional development necessary for success. Too often the ad hoc workshop is regarded by institutions as the (low cost, low effort, no change) solution for these problems, which diminishes the institution's responsibility to its workers. Workshop culture allows institutions to defer structural change to address the issues for which workshops are a band-aid. This can be particularly challenging for staff tasked with supporting digital humanities because of the sheer diversity of technologies contributing to the field, the persistent absence of formal degree or certification programs in DH in many universities, and the constant problem of obsolescence in technology. Fundamentally, we are all autodidacts and workshops are one way we maintain even minimal awareness of our rapidly evolving field. Re-conceiving workshops as mutual aid empowers us to seek the help we need. It allows us to pool our expertise for our community, but also serves as a call to collective action to reform the systems that have failed us. A design justice framework can provide some of the mechanisms to move from survival to collective action, to manifest a future for digital humanities that fulfills the goals of the long game.

Toward a Design Justice Pedagogy

Victor Papanek argues that "design is basic to all human activities. The planning and patterning of any act toward a desired, foreseeable end constitutes the design process" (Papanek 2020, 322). Emerging from this fundamental principle, design thinking, also referred to as human-centered design, is a relatively recent development. From its origins in product development, design thinking has evolved to touch on many different fields from architecture to computing, from big business to higher ed. We acknowledge that there are debates about precisely when

the divergence of design thinking from product design occurred (Simon 1968; Buchanan 1992) and broad concerns about the implication of design thinking in institutional neoliberalism and capitalism (Pater 2021). We are allied with Richard Buchanan in reconsidering design within a liberal arts context. Buchanan echoes Papanek's assertion that design is fundamental, but reframes design as a liberal art,

> a discipline of thinking that may be shared to some degree by all men and women in their daily lives and is, in turn, mastered by a few people who practice the discipline with distinctive insight and sometimes advance it to new areas of innovative application.
>
> (1992, 8–9)

Our interests here focus on design thinking as articulated by IDEO, one of the primary organizations responsible for the current conception of design thinking as a term of art. In IDEO's model, design thinking is understood as a *process* and a *mindset* geared toward problem solving based not merely on technology, but on empathy and creativity (IDEO.org 2015, 10). IDEO frames design thinking around a non-linear, collaborative process of inspiration, ideation, and implementation, which in some ways mirrors humanists' research processes, as well as methods in critical pedagogy. It seems, though, that this mirroring is unintentional. Many humanists would likely deny the parallel or dismiss it as mere coincidence. Because design thinking has historically been centered in STEM fields like computer science and engineering (Cross 2011), and the strong association of design thinking with big business and neoliberal institutions (Harvard Business Review 2020), humanists may be reluctant to adopt design thinking principles or to see the payoff of these methods for humanistic knowledge creation. We argue that the digital humanities has broad resonances with design thinking methodologies. In this volume and elsewhere, specific design principles are deployed piecemeal under the rubrics of prototyping, scaffolding, iteration, and user experience (Russell and Wrisley 2023). While these are useful applications of key components of design thinking, they do not reflect the full range of methods encompassed by the design thinking process. What we imagine here is an *intentional* adaptation of the design thinking principles pioneered by IDEO.org in *The Field Guide to Human-Centered Design* for a scholarly context:

- **Inspiration**: participants learn how to better understand the challenge their work is confronting. This may be a research question, a social problem, or a pedagogic goal or learning outcome.
- **Ideation**: participants learn to generate ideas, identify opportunities, and try out and polish solutions. This is where constructive failure and iteration happen as we learn and adapt.
- **Implementation**: participants learn how to meet their challenge by bringing their ideas to fruition. This may be in the form of a publication, a product, a lesson plan or assignment, an artwork or performance, or any other creative output or mode of scholarly communication.

Within the context of a digital humanities workshop, some of these steps may be foreshortened or expressed as goals for participants to pursue outside of the workshop setting (see, for example, Ridge and Manchester advocate for structure and equity in Chapter 15). What we propose is that using this framework allows both facilitators and participants to reconceive the workshop beyond the 60- or 90-minute constraints of one-time instruction to instead adopt a continuing experience that empowers learners to reconnect, reflect, and engage well after the workshop has ended. This has the potential to not only revitalize the workshop experience itself, but to enable the formation of communities of practice centered on the knowledge and skills shared in the workshop.

Communities of practice are understood as "groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis" (Wagner et al. 2002, 4). Like design thinking, the notion of communities of practice is implicated in neoliberalism. Communities of practice are seen as being beneficial to organizations, not for collectivist reasons, but because they provide value in terms of expertise and professional development with little or no investment on the part of the organization. As such, there is a significant potential within neoliberal structures like the 21st-century university for the community to serve the practice rather than the practice to serve the community. This imbalance reinscribes structures of power and exacerbates systemic inequities. So in this chapter, we work toward new ways of conceiving communities that do not rely on metaphors drawn from capitalism, war, or the police and surveillance states. We rely on the sense of community itself as an intrinsic good.

We are inspired by the tradition of critical digital pedagogy long advocated by the editors of *Hybrid Pedagogy*, and articulated by the contributors to the Modern Language Association publication *Digital Pedagogy in the Humanities: Concepts, Models, and Experiments* (Davis et al. 2020). While many of the examples provided in the latter publication are derived from formal classroom use, it seems counterintuitive to suggest that these same principles, activities, and ideals would *not* be equally applicable in the workshop setting, and indeed, we see these strategies articulated throughout this volume. We see critical pedagogy as a gateway to the type of workshop pedagogy we advocate here. We join John Russell and Merinda Hensley in resisting "buttonology," which emphasizes the features and functions of a tool, rather than the application and context of the tool, and which thus instrumentalizes both technology and its users (Russell and Hensley 2017). And we strongly agree with Phillips, Bordelon, and Terry Kapral 's (2023) assertion in this volume that we must acknowledge the "importance of the affective dimensions" of workshop pedagogy, not just in terms of the instructors' emotional labor, but also in terms of the anxiety learning new tech and new skills can trigger in the learner. Our proposed shift to community-led, community-oriented design in workshop creation, management, and delivery necessitates setting an intention: how will work be done in and among community/ies? If our intention is to create equitable and sustainable learning spaces that then – to use the words of adrienne maree brown – turn complex systems (like neoliberal university hierarchies) into spaces where we "do less harm and generate more freedom," then our intention

must be to *dismantle inequity within those systems* (2017, 106). We therefore propose that workshops grounded in design justice could be the germ for communities of emergence, or *emergent communities*, in which equitable human connections are both the means and result of teaching technology.

Essential to this project, and to the larger project of justice and equity in our profession, are the varying strands of participatory action research (PAR), co-design, and design justice that have influenced this chapter. We are specifically interested in where structures like PAR, co-design, and justice intersect in the specific learning environment that is the digital humanities workshop. In PAR, co-design, and organizing literature, the community becomes an active collaborator and partner instead of a participant or study subject. Placing this central concept – community as collaborator – as a basic tenet of equitable workshop design ensures that the experience of learning is shaped by the exchange of knowledge, perspective, and respect. The work of scholars like Patricia Hill Collins and Kimberlé W. Crenshaw help us to understand the underlying systems at work in that exchange, and so conceptualizing every workshop environment and community as a space of interlocking and intersectional positionalities, and using the "matrix of domination" as a map of oppressive forces in our profession, respectively, allows us to approach workshop design as justice work. Community-building is only realized when we understand intersectionality and oppression in these ways.

To actualize justice, Costanza-Chock draws on Black feminist thought and the long history of co-design and PAR to move organizational thinking and design beyond "diversity in tech-sector employment" (and here, we will insert university-sector employment, as well) to liberatory, accessible, and actionable practices by relocating the design of technological and social systems within community (2020, 24). Instead of thinking of our work as designing services and pedagogical experience for communities, we propose framing our positionality as co-designing services and learning within communities. Arturo Escobar asserts that design should be a structure for thinking ethically about world-making and future-building, with a particular focus around relational modes of knowing and local world-building (Escobar 2018). However, both recognize the challenges and limitations that large-scale technological systems pose for such approaches. Costanza-Chock notes, "individual inclusive design projects cannot, on their own, transform the deeply entrenched systemic factors that militate toward design that constantly centers an extremely limited set of imagined users" (2020, 78). Escobar argues that "what needs to change is an entire way of life and a whole style of world making" because "it goes deeper than capitalism" (2018, ix–x). And so, we now ask: what happens when these liberatory design approaches are applied explicitly to the workshop, to the building of community in digital humanities?

Perhaps it looks like the design justice principles, articulated by the Design Justice Network, a community that "uplift[s] liberatory experiences, practices, and tools":

1 We use design to sustain, heal, and empower our communities, as well as to seek liberation from exploitative and oppressive systems.

2 We center the voices of those who are directly impacted by the outcomes of the design process.
3 We prioritize design's impact on the community over the intentions of the designer.
4 We view change as emergent from an accountable, accessible, and collaborative process, rather than as a point at the end of a process.
5 We see the role of the designer as a facilitator rather than an expert.
6 We believe that everyone is an expert based on their own lived experience, and that we all have unique and brilliant contributions to bring to a design process.
7 We share design knowledge and tools with our communities.
8 We work towards sustainable, community-led and -controlled outcomes.
9 We work towards non-exploitative solutions that reconnect us to the earth and to each other.
10 Before seeking new design solutions, we look for what is already working at the community level. We honor and uplift traditional, indigenous, and local knowledge and practices.

(Design Justice Network 2018)

Before we turn to imagining what this approach could look like in the digital humanities workshop, however, we must situate ourselves within the current moment including the multiplicity of challenges generated by the COVID-19 pandemic, massive environmental crises, the continuing fight for racial and social justice, and the neoliberal forces at the heart of university stagnation. Our state of collective trauma during the ongoing global COVID-19 pandemic has left many of us feeling isolated and unstable, even as we gradually return to onsite work and in-person consultation and instruction in early 2022.

In the midst of this uncertainty, it is important that we do not lose track of some of the strategies, born out of crisis in a spirit of mutual aid, that we developed to survive during the early stages of the pandemic. Among these strategies are hybrid and online instruction, asynchronous modes of learning and communication, increased use of electronic resources, and an informal culture of checking in and following up to help support each other across time and distance. Some of these strategies undoubtedly exacerbate the burden of emotional labor that disproportionately impacted librarians, staff, women, and people of color prior to the pandemic. How then can a synthesis of social justice with design thinking help us retain flexible and inclusive practices while simultaneously relieving the disproportionate burden often placed on some members of our community? How do we move beyond the survival mode implicit in mutual aid to make these practices equitable and sustainable? To a degree, these are questions our readers must answer for themselves, based on their own positionality and capacity. With that said, we do have some potential strategies to offer for consideration.

We propose that two foundational design principles for the workshops we envision are mutual aid and minimal computing. We imagine that reconceiving workshops as a form of mutual aid is one step in creating emergent communities

of learners. As Spade describes, "our ability to build mutual aid will determine whether we win the world we long for or dive further into crisis" (2020, 3). Principle 6 of the aforementioned design justice principles inspires us to call on workshop organizers to rethink their roles as facilitators rather than teachers (in the unidirectional, didactic model of pedagogy that's implied in this comparison). In this model, framing oneself as a facilitator and a fellow learner rather than an expert, breaks the traditional, hierarchical structures that define our current mode of knowledge generation and dissemination in the academy. This strategy can set the stage for reframing the workshop as a form of mutual aid. Remember, empathy is one of the foundations of design thinking. By positioning ourselves as facilitators and fellow learners rather than as experts or instructors, we invite community, rather than reinscribing architectures of power. Rather than asking, at the beginning of a workshop, "What do you hope to learn today?" ask "What do you bring to the table?" Some folks may bring questions, some may bring experience, some may bring ideas. Nobody brings nothing. Framing questions as assets rather than deficits can reduce hierarchy in a workshop or classroom. After all, a desire to learn is something *everyone* should bring to a workshop, including the facilitator. That shared desire may be enough of a foundation for a community to begin. In design thinking terms, these questions can form part of the inspiration portion of the workshop. They can allow participants to co-design the concepts explored in the workshop, invite participants to share their positionality within the organization, as well as articulate their relationship to the topic of the workshop. Share your personal pronouns and invite those who are comfortable doing so to share theirs as well (to learn why this matters, visit MyPronouns.org). Spend some time getting to know your fellow learners and letting them get to know each other. Invite them to interact. Mutual aid requires a degree of trust among members of communities and this sort of communication is one way of establishing trust. Knowing who we are teaching and learning with is likely more important than knowing the technology.

But of course, not all tools are amenable to community-centered learning, and the criteria we use to select the tool we share with our fellow learners can help lay the groundwork for an equitable learning environment. Avoiding buttonology and creating space for community building and empathy also asks us to reframe what it is we are teaching. Are we teaching software, or are we teaching the concepts and applications that the software supports? Rather than advocating for a methodology, we invite reflection on the socio-technical values that we endorse. As a counter-example of what we propose, Keralis previously attended a workshop titled "How to Use ArcGIS." The instructor, a junior GIS librarian, set themselves the task of teaching an expensive and complicated commercial software in a 60-minute workshop. They had over 100 slides in their slide deck. Participants did not have the opportunity to open the software before time ran out. Nobody left happy, least of all, we think, the instructor. We empathize with their plight. Over-teaching is a mistake often made by junior academic professionals; learning to scale content takes both practice, reflection, and mentorship. The impression left was that this person had been afforded none of these. We strongly advocate for the use of open source or freeware tools to teach high level concepts, rather than trying to

teach advanced software in a workshop context. While there are liabilities in terms of data privacy to using Google Maps or StoryMapJS (which integrates Google Maps), these might provide a gentler introduction to GIS principles and projects than attempting to teach an advanced professional software like ArcGIS. In addition, we encourage workshop facilitators to consider the principles of minimal computing when selecting software or tools for their community.

Advocacy for the principles of minimal computing has been one common element of workshop pedagogy in digital humanities. Alex Gil centers his description of minimal computing around the question, "What do we need?" and advocates for "ways of building that could be referred to as 'architectures of necessity'" (2015). So, what do we *need* in terms of technology to teach a DH workshop? This, of course, depends on the assets our community of learners brings to the workshop. In broad strokes, our aim is to base workshops on the model of "minimal computing as minimal barriers," which centers on "a reduction in barriers to entry and access," offering learners low- to no-code solutions for learning DH processes and concepts (Sayers 2016a). As Jentery Sayers describes, this may involve "design strategies and standards that strive for universal access, . . . and avoid or reduce features" (2016a).

For example, in a workshop on text data mining it would be impossible to teach enough Python or R in 60 minutes for participants to get any meaningful experience with even one text data mining methodology, but Voyant (Sinclair and Rockwell 2016) – a free, browser-based suite of text mining tools – can expose participants to several strategies, only requiring a web browser and internet access for users to get started in exploring text mining. As a tool itself, Voyant is *not* an example of minimal computing, composed as it is of thousands of lines of complex code. But Voyant presents the user with a very simple initial interface which renders the complexity of that code invisible. Sayers describes this as "minimal visibility," in which design is used to "reduce the perceived intervention of technologies to facilitate interaction as well as the production/extraction of data from those interactions/behaviors" (2016b). Like Google's starkly simple landing page, which hides the complex algorithms that power the search engine, Voyant's minimalist interface removes some of the intimidation from the computing processes the suite of tools employs. This allows users to approach it from where they are. It enables a sense of casualness or element of play in the workshop setting. Because of its relative ease of use and diverse toolset, rather than merely being a gateway drug for novice text miners, Voyant has accrued significant traction as a text mining resource. It has gained use as a no-cost, no-code solution for some published studies (e.g. Bailey 2015; Rambsy 2016) and in formal pedagogy (Fyfe 2018). Sayers argues that minimal computing as minimal barriers "foregrounds the motivations for rendering content and computing accessible, including how 'entry' and 'access' are defined and which barriers are reduced or removed" (2016a). But what else is hidden or lost when we hide the complexity of tools from users?

Elsewhere Keralis, Jacobs, and Johnson argue for the value of using API-based platforms like TimelineJS in pedagogy because these tools effectively lower the technical bar to entry for both instructors and students (2021). It allows the tool to

complement the humanistic learning outcomes of classes without an undue burden of unrelated skills building. While the authors accurately assert that "applying the concepts of minimal computing can help instructors strike the balance between humanistic learning outcomes and technical requirements" in digital pedagogy (Keralis et al. 2021), there can be a cascading effect of exposure of user data through the API interface. TimelineJS specifically relies on Google sheets to produce interactive timelines. It requires those sheets to be published to the internet in order for the API to ingest the data (Knightlab). This means Google can harvest data from these projects, without the awareness or informed consent of students or workshop participants. While the use of any commercial platform like WordPress, Twitch, Slack, etc., necessarily involves exposure of user data, we are not necessarily arguing against the use of platforms, content management systems, or API-based tools in workshops and the classroom. We would, however, suggest that facilitators and instructors interrogate both the explicit terms of use, and the unstated and implicit disposition of user data by these tools and platforms. This includes locally hosted platforms like Wordpress and Omeka. Doing so will make clear to students and workshop participants how their data are accessed and used. It will also allow facilitators to obtain informed consent if possible or appropriate. In the event that users do not consent to the gathering of their data by external applications, facilitators may need to conceive of alternate means to convey the information. For example, is the learning outcome of a workshop on TimelineJS solely the development of an interactive timeline, or are there richer elements of collaboration, data literacy, media primary source literacy, interpretive writing, and citation practice that can be met in less invasive ways? Ask yourself: how would *you* move from teaching workshop participants to make or do a thing, to guiding workshop participants toward making a community, of which you the facilitator are a member but not necessarily the leader? How would *you* facilitate an emergent community of learners grounded in a spirit of mutual aid?

One strategy drawn from critical pedagogy which could be helpful in answering those questions is flipping the classroom. Cynthia J. Brame describes the flipped classroom as a model in which students "gain first exposure to new material outside of class, usually via reading or lecture videos, and then use class time to do the harder work of assimilating that knowledge" (2013). Brame goes on to cite numerous examples and studies of the success that flipped classrooms have in addressing the diverse ways that students intake, process, and internalize new knowledge. Digital humanities workshops should intentionally adopt this model to address and communicate the socio-political complexities of digital technologies. Several models for this exist in digital humanities courses, notably Miriam Posner's DH101 syllabus (2015) and Jentery Sayers' "Prototyping Texts" course (2016, 2017). A design justice approach should combine the flipped classroom model with a deliberate focus on critically examining the biases and affordances inherent in digital tools and methods. In practice, this approach requires more than requesting that workshop attendees install software dependencies and instead necessitates contextual readings, pre-workshop exercises, and facilitators deliberately setting aside workshop time for the inspiration and ideation principles of

design thinking. This then allows participants to come together to troubleshoot their experiences with the tech, learn together in community, *and* devote time to collectively comprehend the larger implications of using the tool or platform. It also builds a foundation to take the workshop beyond a 60-to-90-minute window. By setting the intention to bring a co-learning and co-design ethos to the in-person (or virtual) workshop gathering and requiring that participants devote significant pre-workshop time as preparation for that gathering, the workshop facilitator creates a foundational community of practice. Further practices that can help facilitators build this foundation are the IDEO design thinking principles and the Design Justice Framework described earlier, and adrienne maree brown's principles on "consensus decision making," which outline methods of building trust and alignment within groups (2017, 230–6). How we connect with and sustain these connections after the workshop can vary depending on the needs and interests of our fellow learners, but there are several strategies available to facilitate asynchronous and continuing participation.

In early 2020, the absence of sustained opportunities for networking and communicating due to the coronavirus pandemic led to a dramatic increase in virtual workshops, lectures, and events. It also led to the dramatic increase in the use of virtual conferencing and meeting platforms such as Zoom, Google Meet/Hangouts, and Microsoft Teams, none of which capture the embodied experience of in-person events. Inspired by the work of scholars who study the affordances of video game platforms for community engagement and education, Quinn Dombrowski and Liz Grumbach founded the Animal Crossing New Digital Humanities lecture series (ACNDigHum) to experiment with embodied, inclusive platforms for virtual networking and community building during the pandemic. Dombrowski and Grumbach were later joined by Merve Tekgurler, and ACNDigHum grew into an interdisciplinary community of scholars seeking platforms that not only combine interactivity with academic research communication, but also generate joy and transformative change. ACNDigHum does utilize a proprietary Nintendo property, the Animal Crossing New Horizons video game, but combines this with multiple free and accessible platforms for scholars to engage with each other's work – from a dedicated Discord server with text and voice chat for sustained interactions, to a Twitch channel that provides access to live-streamed lectures taking place in real-time on an in-game Animal Crossing "island." As a case study, ACNDigHum is an example of how workshop facilitators can utilize proprietary platforms and tools while simultaneously providing access and critique. It allows the exploration of methods of creating community that include shared scholarly interests and the capacity for joy. ACNDigHum also directly addresses emergent challenges, meeting the need for hybridity and accessibility as the profession continues to struggle with uneven pandemic recovery.

Finding and connecting with a community online is a novel solution to the challenges of meeting our learners where they are. Too often we ignore readily available and accessible tools and resources that would allow us to create shared, collaborative experiences for emergent communities. While creating highly customized digital resources and archives allows researchers to seek funding,

promotion, and tenure, these resources are likely to be static archives focused almost solely on the needs and interests of individual scholars. These resources and archives are therefore unable to host ongoing conversations or generate new knowledge. Workshop training materials have a home in these spaces and in institutional repositories, but asynchronous, accessible, and durable communication channels can provide accompanying flexible, inclusive options for sustaining the communities we describe earlier. For example, Jenna Freedman creates LibGuides for her workshops and talks. Freedman's guide that accompanies her workshop for Small Press Fest in 2021 includes links, images, and exercises from the workshop for participants to revisit. Similarly, Peabody award-winning transgender activist and community organizer Imara Jones advocates for posting video and explainer deck "resource guides" on Instagram and other social media to share information: "Those resource guides are shared thousands and thousands of times. People are hungry for information beyond what you think happens on Instagram, or on TikTok, or these other platforms" (Jones 2021). Sharing in this way not only reinforces information with which participants engaged in a workshop, but also has the potential to reach wider publics, expanding both the conversation and the community beyond the confines of the original workshop. Again, our experience of communication technologies is mediated through platforms (the medium is still the message, and perhaps even more so now than when Marshall McLuhan first wrote this evergreen phrase). Thus, critical engagement with those platforms and the ways communities use/reuse them is necessary.

Beyond just documenting events and providing links to resources, workshops can provide asynchronous, continuing access for participants. The Discord platform, used by ACNDigHum, is one possible use case. The NEH-funded Legal Literacies of Text Data Mining Institute and the Digital Frontiers conference on *Star Wars*, Realizing Resistance Episode II, used Slack channels that followed the event agenda and provided a durable mechanism for asynchronous participation long after the events concluded. Creating, introducing, and modeling the shared space as the event is ongoing ensures that the burden of sustaining community engagement falls not only on the facilitators. It's important to note that one need not create a Slack channel for each individual workshop you teach. Rather, create a channel for each workshop title, adding iteratively to the community with each workshop. This can be done on an opt-in basis, allowing participants to self-select ongoing participation.

The co-working and conversational environment supported by Slack may not be necessary for every workshop, or desirable for every community. In the context of a workshop, a shared notes document may suffice. Include your (public) contact information, links to your slides, any websites or resources you mention in the workshop, and a space for participants to take notes in a Google Document (or another collaborative note-taking platform, like Notion.so). Give workshop registrants a link to the document prior to the workshop and openly invite them to add content. For ease of iteration, we suggest making a copy of the document for your next workshop, cutting out notes from the previous workshop. The shared notes document is also a great place to share links to resources like the Student

Collaborators' Bill of Rights (Di Pressi et al. n.d.), information on making web content accessible for adaptive technology and on accessible fonts and color palettes, and information on critical digital pedagogy. Plant the seeds of these values in every workshop you teach. It's up to each individual facilitator to determine what works for them, what is sustainable based on their positionality and the demands on their time and energy, and to decide how to scaffold collaboration and conversation into their workshops. Experiment and see what works well for you and your fellow learners.

Within the non-hierarchical space you create together, participants should feel comfortable and encouraged to share back co-created knowledge; this dynamic is essential to sustain emergent communities. As one example, the Lincoln Center for Applied Ethics at Arizona State regularly hosts "humane technology design studios" devoted to using experimental design modalities to generate research questions that interrogate our personal and collective relationships to and reliance on technologies. Participants range from academic experts in disability and engineering to technologists from companies such as Salesforce. In order to ensure that these studios continue to implement research experiments within these collaborative spaces, choosing a reflective method and mode of sharing out results is essential, and it is just as important to record how participants *share back* co-created knowledge. The Lincoln team first disseminates "studio digests," then "invitations to activate" to each cohort of participants. Digests include resources such as: visualizations of studio discussions, co-designed "beautiful [research] questions," Spotify playlists co-created by participants, and links to referenced resources (aggregated from participants during the studio). The invitational document asks participants to activate beautiful questions via participatory action research modalities. Participants have activated co-designed research questions by, for example, establishing a virtual summer camp for children of migrant farm workers and making "micro-interventions" to remove technology from everyday life over the course of their day. In their activation reports, they *share back* that they feel a massive emotional change when turning their research into practice. This continued engagement, and commitment to following up with studio participants, can be applied directly to digital humanities workshops by visually disseminating new knowledge generated through community-centered learning. This builds a minimal barrier mode for participants to publicly share how they are applying that new knowledge in their daily professional or personal lives. The intentional sharing out of workshop findings, and then the reciprocal sharing back of applications, allows workshop facilitators to create a foundational knowledge base that can be adapted and reused by and in community.

This movement towards sharing back what is generated in the workshop environment allows workshop organizers to found supportive communities for the further creation of digital research projects. This knowledge base may be a Slack channel, shared notes documents, LibGuides, or explainer decks; or it may archive live transcripts from the event, virtual event chat logs, or audio/visual recordings, all of which should strive to be presented with access and minimal barriers at the forefront of sharing platforms – Humanities Commons (hcommons.org) is an excellent

repository for such materials, but Google Docs (docs.google.com) or GitHub (github.com) may currently be more accessible for adaptive devices and screen readers. With the understanding that new modes of communication and knowledge sharing introduce new demands on the labor of staff, faculty, and students, the medium of sharing should match the expertise of the community of practice. In addition to explainer decks, creatively deploying other media like podcasts, streaming platforms (Twitch, Streamyard, YouTube), and TikTok, could not only create community and share knowledge but generate continued and collective engagement from those with complementary skills, or those with the desire to learn those skills.

Conclusion

Is transformative justice a lot to ask of workshops as a genre of pedagogy? Absolutely. And is it a lot to ask of staff facilitators whose positionality as we've described it here frequently subjects them to demands – and often unreasonable demands – for their time, expertise, and emotional labor? Absolutely. But as stated earlier, empathy is a key principle of design thinking. Extend yourselves the same grace you extend to your fellow learners and take seriously the permission that iteration and ideation gives us to experiment and implement at our own pace. So, as you consider adapting your existing workshop pedagogy to a design justice framework, consider changing *just one thing*. For example, if you don't already do so, introduce yourself with your pronouns and invite your fellow learners to do the same, if they are comfortable. Create a shared notes document or LibGuide for your workshop. Replace a commercial tool with a freeware solution based on minimal computing principles. Then, next time, do *just one more thing*. Give yourself permission to try things out and abandon them if they fail you or your fellow learners.

We understand that our current engagement with the internet is largely reliant on mediation via platforms, and no platform-based solution to teaching digital tools will be perfect. It is up to you and your emergent community of fellow learners to determine what level of compromise is acceptable. This community could be defined along disciplinary lines in digital humanities, but our proposed solution is to radically change our approach to teaching and learning in DH. Design thinking and design justice grant us a possible socio-technical infrastructure to manifest change in our profession by placing non-hierarchical, equity-based community building goals at the center of our pedagogical practices. If we, as a profession, will be using technology to teach technology, we must approach this pedagogy critically or do a disservice to the radical potential of critical digital humanities to make institutional and societal change.

Note

1 Neoliberalism emerged "as a response to the liberation movements of the post-World War II period," centering economics – particularly the free market and the minimal state – against "movements for decolonization, desegregation, and self-determination" (Hong 2015, 7). The implications of neoliberalism in the university can be seen in the

shift toward managing higher education like a business, the emphasis on career training over liberal education, and the imposition of (often false) meritocratic hierarchies in power, access, and mobility within and among institutions that privilege and protect capitalist, white supremacist, and patriarchal norms. For a detailed account of neoliberalism's impact on the university, see Henry Giroux, *Neoliberalism's War on Higher Education*; and on the relationship between neoliberalism and "the ideological tenets of white supremacy," see Grace Kyungwon Hong's *Death Beyond Disavowal: The Impossible Politics of Difference*.

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14 The UX of DH Workshops

Beth Russell and David Joseph Wrisley

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Digital humanities have been a fast moving, and quickly diversifying set of practices found in the contemporary university. They will probably remain that way for some time to come. It is important to stress, however, that even in 2022 they are still being discovered, experimented with and incorporated into educational environments in many parts of the world *for the first time*. Such is the case for the region in which we live and work: the United Arab Emirates. We believe that digital humanities (DH) events do not just happen; rather they are sites of social practice, combining imagination and design methodology with communities in a specific time and place (Richards et al. 2015). Our institution, New York University Abu Dhabi, encourages the weaving together of content and context as an ongoing, complex process in our curriculum, university and community events. When it comes to the design of digital humanities events and the potential societal impact they can have, we have kept close to this approach.

If we factor in the diversity of educational and linguistic backgrounds of the expanding pool of participants at DH workshops, and the complex social and infrastructural needs of such events, there are many different issues which must be taken into consideration. At the core of our work is a desire to balance empathetic and community driven approaches with a structure to facilitate the learning of digital humanities tools and methods. As Grumbach and Keralis note, "Avoiding buttonology and creating space for community building and empathy also asks us to reframe what it is we are teaching. Are we teaching software, or are we teaching the concepts and applications that the software supports?" They continue by "invit[ing] reflection on the socio-technical values that we endorse" (Grumbach and Keralis 2023). We have found clear links between event design and building

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trust within a community of practice (Wenger, McDermott, and Snyder 2002), especially in the early phases of DH community development in the Gulf Arab states. Our main goal in establishing a regular DH workshop has been to identify the present and future members of the community, to begin to articulate values with the community, and to find ways in which that community can begin to contribute to the creation of the workshops. This goal has required an intentional, design-centered approach. The context of our chapter is not years of experience hosting DH institutes in our local environment, but rather the perspective of practitioners in a decade-old academic institution which has been working to define its role in the world of international higher education. Our institution has been experimenting with DH for only about five years. Drawing on the literatures of user experience (UX) design as well as knowledge and events management, in this chapter we reflect on our experience of designing DH workshops in this institutional "startup" phase (Hokkanen, Xu, and Väänänen 2016) and in a new geographic area of the world. We argue that notions such as *persona development*, *edge case design*, *inclusive design*, *future forward feedback* as well as *agile methodologies* are useful concepts for framing the process and increasing the chances of long-term success of the initiatives and community building efforts to adapt to unknown futures.

To our knowledge, the NYU Abu Dhabi Winter Institute in Digital Humanities (WIDH) in 2020 was the first major digital humanities institute in the Gulf Arab states, and the second in the Arab region.[1] Initially taking place across four days, it encompassed eight courses, poster sessions and networking opportunities with over 100 participants and instructors from around the world. The event brought together DH scholars and learners with a range of interests and experience levels. This was the first of what we had hoped would be an annual event, aiming to establish our university as a hub for DH work in the region. The host country of our university, the United Arab Emirates (UAE), has been at the forefront of digital transformation in the MENASA (Middle East, North Africa and South Asia) region in many of its public sectors and increasingly so in the educational sector. From that perspective, the forward thinking and critical lenses characteristic of global DH practices seemed a natural match with the environment. The UAE also has a majority expatriate population, with the vast number of residents hailing from other countries, which is reflected in the composition of our own campus community. With faculty, staff and students coming from a wide variety of educational and linguistic backgrounds around the world, the campus conversations often revolve around what diversity might mean in such a context. Given that there was no particular precedent for a DH event in the Gulf region, we sought to lay the groundwork by using what we *thought* might prove to be the most attractive type of DH institute to such an audience. We were also keen not to represent ourselves as the sole place for Arab DH work, which might be an initial misconception given our location. In considering one of our main goals of creating an event that reflected our population, we wanted to move these conversations closer to regional considerations, such as language, resource availability, infrastructure and general knowledge of DH work. In other words, we drew on ongoing conversations in our own institution about diversity as a way of framing new DH scenarios for our community event.

Incorporating UX in the Planning and Development

Applying for institutional support for the event gave us the opportunity to outline our target audience, which we hope would include people with a great deal of experience in DH work, others who had dabbled in the work, as well as those coming to it as relative newcomers. Within that wide pool, there were varying technical infrastructure and resource pools at home institutions. We had the added challenge of incorporating participants who might work in non-English languages, especially less represented languages written in a right to left script such as Arabic. One solution we found for addressing the potential issue of trying to meet the needs of *all* of the unknowns, was to create WIDH through the lens of *UX personas*, designing the event for who we thought might be interested, given what we already know about the community. Personas, "stemming from the field of user-centered design (UCD), are hypothetical users that represent the behaviors, goals, and values of actual users" (Tempelman-Kluit and Pearce 2014). While our persona work was informal, it centered on a number of participant characteristics: previous background in digital humanities, institutional affiliations in the larger region (academic, GLAM sector, private), languages used by the communities as well as familiarity with, and availability of, data and infrastructure in the participants' home institutions. Examples of personas we envisaged participating in the event included (1) faculty members interested in incorporating digital methods into teaching or research coming from the region and from NYU's global network, (2) regional and network librarians who want to expand their knowledge of new trends in digital scholarship, (3) local postdocs in the humanities and social sciences and (4) actors in the local cultural heritage sector. That being said with these diverse personas, it was very difficult for us to say what cultural and linguistic horizons they would bring to the event. While the personas designing exercise was very helpful for our initial event, we have had to rethink them as a significantly larger group of participants has emerged since 2020 than we had initially expected.[2] Participants at our first in-person event included public humanities and citizen researcher groups, postdoctoral fellows in machine learning, even graduate students interested in global digital humanities, and even though our Winter Institute was not mainly focused around Arabic topics, many more scholars in Middle Eastern and Oriental Studies from Europe and North America registered than we expected. Moreover, even though the timing of our first in-person event in 2020 precluded many undergraduates from attending the program, we did get interest from a number of last year undergraduates who were doing capstone research as well as from students who wanted to attend, but could not due to their January term course load. Another surprise we encountered were the institutions who took advantage of the event to send a whole cohort of participants.

In UX theory, developers are encouraged to prototype for what designers call "edge cases," or those that might lie at the outer boundaries of the main constituency. It has been noted that "edge cases that are not addressed can negatively impact the user experience" (Chechique 2021). In the content of DH workshops, edge cases might be considered users working in different languages, with different cultural backgrounds or worldviews, or even participants coming from institutions with different infrastructural development, connectivities or institutional

ambitions. As Daniel Paul O'Donnell, Katherine L. Walter, Alex Gil and Neil Fraistat write in *A New Companion to Digital Humanities*,

> for the most part . . . [DH] international and collaborative activity is conducted along a primarily east–west axis among a relatively small number of mostly contiguous high-income economies in the northern hemisphere: Japan, Taiwan, South Korea, Canada, the United States, the countries of western and central Europe, and, in the South, Australia and New Zealand.
>
> (2015, 493)

We were operating in an entirely different sphere. In reality, designing for the edge in a super diverse country of the world such as the UAE – both for the people who reside there and for the people the country hosts as visitors – means not making assumptions about culture and language, but the process is much more than simply planning for a diversity of individual participant identities. We must steer away from monolingual, monocultural and singular institutional profiles in the way that we imagine our participants, what they bring to the event and what they will be able to take back to their home institutions.

Our initial challenge was all the more difficult because we wanted to build an event that not only attracted people who were already familiar with DH, but also to work toward building a wider community who were not deeply familiar with its global variety of practices and to enrich those practices with the diversity of these new audiences. Whereas we designed WIDH 2020 as an introduction for local and regional audiences, including the members of our own highly globalized campus, we were pleasantly surprised to find that a significant number of participants registered to come from far away to attend in person. This highlighted a missing persona within the Middle Eastern or Muslim context, the university's affiliation to a network of global sites, as well as DH scholars working within, or identifying with, non-Western frameworks. With the wide variety of registered participants one of the "designing for the edge" strategies we adopted for our DH institute was to develop of a wide spectrum of programming which would appeal to a variety of participants, providing workshops that were more introductory and theoretical in nature (Open Forms of Knowledge; Data in/and the Humanities) to help those new to the conversation begin to learn about some of the more fundamental ideas behind DH work and to steer local and regional conversations in new directions. At the same time, we also set up courses focused on learning a specific technical skill (Text Analysis of Arabic; Python Fundamentals for Humanities Research) for the more advanced participants. We also knew that, given the vibrancy of the cultural heritage in the Gulf Arab region and the UAE in particular, we wanted to offer at least one course on digitizing cultural heritage objects. On the other hand, we did not offer courses in XML or digital editing which might be considered staples of Western DH workshops, largely because, to our knowledge there is so little textual scholarship in the universities of internationalized higher education. Likewise, workshops in project management or LOD/semantic web seemed to be a stretch for regional newcomers to the field. We hoped that a well-designed event would provide participants with a number of takeaways spanning multiple topics, tools and resource types where connections could be found to scholarly trends in

the region, matched with the maturity of the conversation on digital scholarship. We labeled our course descriptions in the case where specific prerequisites were required, but for the most part we conceived of these first events as open to all levels.

Incorporating UX in the Event Itself

While designing these activities for the first Winter Institute – the workshops, poster sessions, networking opportunities and keynote address – we attempted to model the various wants and needs of our attendees. It has been argued that UX design "is meant to promote an engaging and usable experience, and for that it must be relevant for the user" (Ferreira 2016). Carrying out an event modeled on events from outside the region, no matter how sophisticated it might be, would have run the risk of not being relevant. It was important that we be thoughtful in our approach, ensuring we provided an experience that mattered to our attendees. We sought to avoid creating the context in a vacuum, but instead to consider the wider spectrum of our attendees. We invited our keynote speaker from the Centre for Internet and Society (CIS) in Bangalore, Puthiya Purayil Sneha, to speak on the topic "Alternate Histories and Futures: Digital Transitions in Archival Practice in India." Similarly, our poster session included students from our home institution, faculty, librarians and staff, with topics ranging from Syrian-Lebanese Book Culture, spatializing UAE phone directories and the use of audio essays in the university classroom in Singapore. Simply put, the event was structured around cultural content relevant in our immediate context, modeling forms of research which participants might imagine themselves carrying out some day. One UX designer, Ian Batterbee, has also championed *social inclusion* as one of the key principles of a UX toolkit (2021). As the organizers, we also felt it was important to establish a shared sense of community and belonging that fostered a safe, respectful and collegial environment. As such, we created a code of conduct to help establish such a space for learning, allowing all voices to be heard and to "protect an environment conducive to intellectual pursuits, respect the rights of others and the University's resources and spaces" ("Code of Conduct" n.d.). Given that the university library hosted the event, we felt it was important to note the importance of being respectful of the space itself and the myriad resources used to support it. Knowing that our attendees came from a range of institutions with varying resources and experience levels, we also felt it important to establish an environment that encouraged participants to "communicate with each other in ways that respect difference, while showing compassion, empathy and understanding, instead of assuming that we are 'all on the same page'" ("Code of Conduct" n.d.). Creating a value-centered document for the space of our event has proven to be an effective way to start off on a strong footing, clarifying the direction of the event for the audience of diverse edge users, but also allowing us to lean into storytelling and narrative to shape the identity of the event, including in its future iterations (Bevolo 2014). To construct our initial code of conduct we drew on existing models, including those at the Digital Humanities Summer Institute ("Statement of Ethics & Inclusion" 2018), as well as codes of conduct from

our own library, the Association of Digital Humanities Organizations ("ADHO Conference Code of Conduct") and the Digital Library Federation ("DLF Code of Conduct").

Using UX Principles to Assess the Event

An event focused around the new, emerging DH community in our part of the world needed not only to create personas as part of its planning, development and execution, but also to revise them for assessment and redesign of later iterations of the event – especially in these early stages of community building. Along these lines, another important UX concept, *user feedback*, proved quite important to the way we took stock of the initial event and what participant takeaways were. At the very end of the WIDH 2020 we carried out a volunteer survey among participants to see what specific elements of the event had made an impression on them. By user feedback, we do not mean assessing how the event went from the perspective of institutional compliance or learning outcomes (an assessment process our readers will be familiar with from the assessment of academic curricula and research); instead, we were most interested in the notion of *future forward feedback*, or "feedforward" as it has been dubbed (Hirsch 2017). With participant consent, we published a small selection of those on our event site ("Feedback" n.d.). Of particular interest to us were positive experiences we could replicate – ideas for potential growth which could be implemented in the future – or new ways of conceptualizing how DH fits into local and regional ways of knowing.

What was notable is that while we didn't specifically ask our attendees to address questions of community in their post-event survey, this topic emerged as a central in the majority of the responses. Participants commented on how important they viewed the community building and networking possibilities on the level with the specific subjects of their workshop they came to study. Since our 2020 institute was not designed as a one-off event, but rather an inaugural experience, such feedback has proved to be successful in moving subsequent events closer to the shared values and interests of the participants. Put another way, the participants have been invited into the design of the event as an event, but also of the value systems which underlie it. Using participant feedback to shape a DH event, we see in that respect, as less of "problem solving activity, . . . as a contributor to value creation and an ongoing pursuit carried out over time and space" (Orefice 2018). One element of DH events which can be gleaned immediately from the feedback and the virtual events is how attendees appreciated geographical diversity of participants and perspectives from across the spectrum of university roles, ranging from educational designers to postdocs and even undergraduates. Less than two months after the WIDH in January 2020, the COVID-19 pandemic swept over the world, disrupting most in-person academic events and opening the door to a wide range of new remote formats. Over the next two years, at which point we are writing this reflection, the idea of an event as an opportunity to build community and link it to an expanding notion of values for that community has proven to be very relevant for us. In that time WIDH put on a series of shorter, virtual events and even partnered

with New York City Digital Humanities (NYCDH) week in February 2021 and the International Council on Archives (ICA) in November 2021. In these WIDH events, co-instructors from the inaugural events started teaching new topics and on their own; moreover, several WIDH participants became first-time instructors, in particular, museum professionals, postdocs, master's students, even one recent undergraduate from NYU Abu Dhabi. Our programming during the pandemic was quite experimental. In retrospect, it showed us how the community was growing as much as it helped us to see the virtual event as an extension of our physical one (not surprisingly) reaching significantly greater audiences.

Balancing UX and Agility in Planning for the Unknown

Normally, after we had submitted our report about our first version of the WIDH to our funders in February 2020, we would have begun to plan a follow-up event, using the feedback we received to make slight adjustments to the in-person content and structure. We could never have expected, however, how the sudden transition to remote formats in March 2020 would open our community to other participants throughout the world. In fact, the scaling up of the Abu Dhabi-based workshop attracted strong participation from distinctly non-Western locales, in particular from the MENASA region (see Figure 14.1).

As the 2020–2022 pandemic years have shown us, public health and mobility have been significant disruptors to maintaining cross-borders communities, and reconceptualizing the event in different formats has required a significant amount of flexibility. Whereas the principles of UX mentioned earlier (edge case design, future forward feedback, etc.) proved valuable for planning what we saw as an annual event with a limited in-person audience, the remote sessions were much more difficult to plan and to execute. The numbers and diversity of participants who attended made their execution and their assessment difficult.

The disruption in planning for future in-person events taught us about the need to practice agility in our event design. *Agile methodologies* are a well-known style of project management which have garnered attention, particularly in the world of software development. They emphasize the need to deliver software products in a sustainable and reliable fashion, despite the rapid changes of enterprise environments. The different varieties of these strategies (Agile, Scrum) are not new to the worlds of event planning and management which have encouraged shorter iterative cycles to events to minimize risk (Lutkiewicz 2015; Gustavsson and Rönnlund 2010); the recent public health crisis has most definitely reminded us of this necessity in many sectors. There are potentially tensions between agile methods and the UX design principles we outlined earlier, and these tensions have the potential to place stress on the creative work of event design and community building. Whereas the former focuses on the ability of teams and individuals to self-organize and change, sometimes even in the late stages of development, the latter is a slower, reflective process centered on ideation, design and testing of experience. We do not mean to claim that the two approaches are incompatible. Instead, if we think about this tension in our scenario of the creation of a DH event as a means of community building, when an

Figure 14.1 A tweet by @DJWrisley showing a map of the 300+ registered participants for the remote 2021 NYU Abu Dhabi Winter Institute in Digital Humanities.

event is required to change at the last minute or it grows quite quickly, stress is placed on its storytelling function, with communities in earlier stages of formation more adversely impacted. Furthermore, if the community grows and participants continue to see themselves as mere users or consumers of the event instead of "self-organizing" stakeholders, it can become difficult for the event to manage participant expectations.

Conclusion

We have focused here on the scenario of early DH community building in the UAE and principles drawn from UX design which we used in creating a number of DH events and workshops, contrasting them with agile methodologies. Our intention in designing our event was to maximize a feeling of belonging among a large number of participants coming from different kinds of communities. Design,

we have argued, like event planning is not a one-time endeavor, but an iterative process which needs to be carried out in dialogue with the members of that community. We have discovered that there is significant interest in the larger region and that there are not many opportunities for on-site DH workshops nearby, but also that our ability to build a community via our workshops will depend on a number of factors, not the least of which is mobility. We do not fully know what our DH events of the near (and more distant) future will look like, nor how often potential participants will be able, or willing, to travel internationally. More time must pass to observe how academic life cycles adapt to such disruption and how the community and its needs change. All of this means rethinking our participant personas and our strategies for inclusion, even designing methods for user testing in our local environment (Becksford, Hammer, and McNabb 2021). Design, in other words, is not immune to larger societal disruption, but intimately connected to it. Whereas we have every intent to return to in-person events, the shifting possibilities on site for events with international audiences have required us to think more deeply about other strategies for *community continuity* as we move forward. What is sure is that the moments between the different DH events we have organized served as an opportunity to sound the opinion of our community, to respond to it and encourage it to be a part of the creation of subsequent programming.

Notes

1 The first such institute took place in 2015 at the American University of Beirut (http://dhibeirut.wordpress.com), co-founded by Wrisley and his colleagues in Beirut. The WIDH's website is http://wp.nyu.edu/widh. An archive of WIDH programming can be found at https://archive.nyu.edu/handle/2451/61964.

2 We aimed to have around 50 participants in the first in-person event, whereas we ended up with double that. In subsequent online events, we had very large numbers sign up, in particular in the online 2021 version which had more than 300 people sign up.

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15 Scaffolding Collaboration

Workshop Designs for Digital Humanities Projects

Mia Ridge and Eileen J. Manchester

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Our chapter begins, as does this edited volume, with the premise that workshops can be valuable pedagogical structures, providing training opportunities for digital humanities staff and project members. This builds on our view that workshops can, and should, be regularly employed to support ongoing digital humanities project management and to enable collaborative decision-making. Crucially, considering workshops as a form of design allows the digital humanist to critically approach *how* work is done in addition to *what* the work entails.

We define a structured workshop as a scheduled, time-bound, focused, and generative event designed to foster collaboration and/or knowledge exchange between two or more people. Workshops hold particular promise for the digital humanities field, a challenging problem space wherein every project member brings with them varied formal education experiences, disciplinary training, professional experience,

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and/or theoretical frameworks. Project teams often include members at varying points in their careers and different levels of comfort with forms of communication.

As scholar-practitioners in the realm of digital cultural heritage, we view the structured workshop as a tool with many possible applications. This chapter provides examples from our own experience[1] and advocates for the incorporation of structured workshops in the professional practice of DH project participants. Specifically, we reference the educational concept and theory of *scaffolding* to illustrate the value, and required effort, of creating multimodal supports for participant engagement during workshops (Dabbagh 2003). Elements of scaffolding have already been implemented in fields such as classroom instruction, organizational studies, educational psychology, and user experience design; we believe they are equally applicable to designing learning and collaboration experiences in the digital humanities. Scaffolding is a useful framework for workshop design because it provides a model for structured activities and supporting resources that focus the mind on the task at hand, remove distractions and barriers to participation, encourage learning, and ensure more effective communication.

Introducing Scaffolding

David Wood, Jerome Bruner, and Gail Ross are credited with developing "scaffolding" as a metaphor to describe a process "that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond [their] unassisted efforts" (Wood, Bruner, and Ross 1976, 90). In their study on the role of tutoring in problem-solving, they emphasize that scaffolding enables a learner to focus exclusively on the tasks *within their range of competence*, with the cycle repeating so that the tasks gradually grow in complexity and the learner becomes increasingly autonomous. In a formal education context, instructional scaffolding can take many forms, including peer-to-peer assistance, teacher modeling, connecting to prior knowledge, turning and talking in pairs or small groups, supporting documents such as rubrics or graphic organizers, visual aids, and pausing for questions and review. In a scaffolded process, support through structured activities is gradually removed as the learner moves from a beginner's state of understanding to an increasingly advanced understanding and/or skillset. If you have been teaching, mentoring, or leading activities within DH, you have probably already developed some methods for scaffolding as you work to help learners and collaborators succeed. You may recognize some of the structured activities we recommend as practical methods for applying scaffolding techniques within workshops.

Rather than arguing for wholesale adoption of instructional scaffolding, we have identified elements of scaffolding that translate meaningfully to the context of digital humanities workshops. The title of our chapter, "Scaffolding Collaboration," thus works on two levels: first, the structured workshop *itself* is already a way to scaffold, or support, collaboration on digital humanities projects. Second, it is equally important to provide scaffolding of the activities *within* workshops with ready-made supports that DH practitioners can easily apply in their work. Our goal

for writing this chapter is to make it as easy as possible for our readers to learn and apply tailored scaffolds for specific DH workshop use cases. If you follow along with us, we feel confident you will come away prepared to do this yourself!

Although scaffolding is commonly applied in education practice and research, it is fundamentally a framework for structuring learning experiences that moves from *current* to *potential, imagined, future* end states. Scaffolded workshops build trust and improve shared understanding. The following elements of scaffolding are particularly relevant to digital humanities workshops:

Scaffolding supports engaged problem-solving in real time: scaffolding is "temporary support that is provided as students are engaging with problems" (Belland 2017, 18). In digital humanities workshops, it is possible to add or remove scaffolds as the workshop unfolds. For example, over time groups become both more familiar with different types of activities, and with working together. Scaffolding can be adjusted dynamically to provide more support where it is needed, and less where it is not.

Scaffolding divides complex, multi-step tasks into manageable phases: "scaffolding not only simplifies tasks, but also highlights complexity therein" (Belland 2017, 19). The structured activities we will describe later – drawn from Liberating Structures, among others – can scaffold complex creative, problem-defining, and problem-solving processes by providing specific techniques that can be combined into a multi-stage workshop.

Scaffolding supports equitable collaboration and collaborative problem-solving: at its inception, scaffolding was conceptualized as an interaction between an "expert" instructor and "novice" teacher. In the digital humanities, the expert-novice dichotomy often appears in the relationship of project lead/subject matter expert and support staff. However, given the interdisciplinary nature and diverse makeup of digital humanities teams, expertise and contributions appear in different forms beyond subject matter expertise or institutional status. Scaffolded DH workshops make room for these kinds of contributions by placing the workshop facilitator in the traditional role of the "instructor" – the person running the workshop and adding or removing supports throughout. Given that preparing, structuring, and successfully running a workshop is a difficult, intellectual task worthy of respect and appreciation, the elevated status of the workshop facilitator must be recognized.

Scaffolding increases an individual's agency and independence: the goal of scaffolding is for participants to gain new skills and function independently in the future. Designing a flexible experience that accounts for every individual's background knowledge and learning style removes structural impediments to participation. By intentionally structuring and scaffolding workshops, digital humanities teams can not only use their time and resources more effectively but also use every workshop as a chance to include and empower every member of their team.

When and Why to Scaffold Digital Humanities Workshops

To define when DH projects should use scaffolded workshops, we must first establish a shared understanding of when DH projects should use workshops in general, the common theme of this entire volume. Recognizing when a workshop will aid

decision-making, establish relationships, or enable a shared vision can be difficult when in the midst of a project. Communications scholar Cal Newport coined the phrase "hyperactive hive mind" to refer to a way of working in which tasks are delegated and decisions made by a constant stream of synchronous, unstructured communication such as back-and-forth direct messages, chat channels, or endless email chains. Undoubtedly, there is a time and a place for this form of communication such as responding to urgent requests, adapting a meeting agenda in real time, or communicating with a group of colleagues all at once. However, we agree with Newport's call for more structured forms of collaboration (Newport 2021). When the "hyperactive hive mind" becomes unproductive or overwhelming, structured workshops are an effective alternative. This is especially true for digital humanities projects, which have many tasks and milestones that warrant deeper, more intentional forms of collaboration.

Given the complexities of DH projects, unstructured meetings can too often default to letting the people with the most experience, status, or the loudest voice dominate and dictate the flow of the conversation. For example, the commercial sector talks of the HiPPO – the Highest Paid Person's Opinion – who can intentionally or unintentionally make it difficult to express an opinion that differs from theirs. (You may have your own name for the academic equivalent of the HiPPO.) Understanding why some people may dominate group activities can be helpful in addressing them individually but ultimately, you must plan for it and structure activities to minimize their impact (Kaplan 2021). A failure to plan for interpersonal dynamics can result in inequitable experiences, and suboptimal outcomes such as lack of shared metrics for success; lack of consensus; only hearing from a few voices; missed opportunities for productive conflict/disagreement or failure to surface disagreements in a productive manner. In some cases, such as purely informational meetings, this form of one-directional communication may be acceptable. However, if the outcome of a meeting is important, a structured workshop can help with activities that encourage creative, focused responses from all participants.

The following milestones represent key points at which structured workshops are useful structures that help engage team members and stakeholders while also:

- Teaching and learning a new process, method, topic, etc.
- Seeking consensus
- Producing documentation
- Soliciting feedback
- Making shared decisions
- Clarifying roles and responsibilities
- Teambuilding
- Convening peers around shared issues in the field
- Establishing shared understanding of and language to describe a specialist domain or complex challenge
- Opening lines of communication and establishing shared language use (especially key when working across disciplinary literacies).

Table 15.1 Features of DH projects well-suited for structured workshops

Feature of digital humanities project	*Risk of NOT using workshop*	*How a scaffolded workshop mitigates risk*
Highly interdisciplinary, intradisciplinary, or multidisciplinary	Since DH projects are often interdisciplinary, project members must work to bridge gaps in communication across disciplinary literacies. There is a huge risk for unwitting miscommunication.	Include activities that externalize knowledge and assumptions in a way that can be easily responded to such as writing on a white board, sharing sticky notes, and brainstorming individually before a group discussion. Allows for shifts/growth in individual understanding. Complexity of discussion grows as shared understanding and knowledge grows.
Complex, or multiple, work environment(s)	Related to interdisciplinarity; DH projects take place in universities; libraries, archives, or museums; labs, etc. Workplace norms differ based on context; jargon and everyday terms can be used differently.	Tailor workshop to attendees; reduce barriers to equitable participation. Include activities that externalize knowledge and assumptions, such as Gamestorming activities for team building and alignment (Mastronardi 2018).
Complex, or multi-faceted, project goal and scope	Scope creep; competing priorities or definitions of success impede or undermine progress. Team members may be reluctant to share bad news or critiques in ordinary discourse.	Break down into manageable sub-topics/sub-sections. Surfaces potential scope and prioritization issues; identifies coverage gaps in plans. Proxy for good project management; project phases. Include activities such as pre-mortems (Ridge 2019).
Multiple staff and stakeholders at different stages in career	Complex power dynamics or unclear roles and responsibilities impede communication. The opportunity and financial cost of large meetings that fail to define and/or achieve stated goals.	Shared sense of ownership. Include activities to clarify roles and responsibilities and find shared definitions of success.

In project management terms, workshops could also be useful for the following project management tasks:

- Project kick off + ideation
- Stakeholder identification

- Technology identification
- Scoping a project and defining measures of success
- Collection identification (if working with digital collections materials)[2]
- User Experience workshops (See Kaplan 2019)
- Close out/retrospectives.

Digital humanities projects are complex. Team members may already face many pressures and demands on their time, scholarship, and productivity levels. There are many understandable, pernicious barriers to successfully structuring workshops such as: the time required to prepare; unwilling collaborators or workshop participants; lack of support from management; and/or organizational resistance to trying new things. Elsewhere in this volume, Phillips, Bordelon, and Terry Kapral address the important issue of anxiety for those attending workshops. If you find yourself in a situation or work context where the idea of a scaffolded, structured workshop is overwhelming, here are some concrete tips for overcoming barriers:

- Plan out different structures for different meetings, depending on length, frequency, and goal of meeting. You can introduce structures gradually in smaller meetings, and add in different activities as the team become comfortable with the idea of structured activities
- Get management or more senior administrators on board – point out the risks and mitigations outlined earlier, and the cost of ineffective, unstructured meetings
- Assign a facilitator, other than you, to lead a meeting
- Rotate key roles including facilitation, note or minute-taking, running the slide deck – you can rotate these roles from workshop to workshop or even within different workshop segments.

How to Design a Scaffolded Workshop

Odds are, if you're reading this book, you're already on board with the idea of using workshops. Now, how do you ensure that your workshops are in fact productively organized and appropriately scaffolded? Designing and facilitating an effective workshop takes work, preparation, and thoughtful use of scaffolds. The level of care, intentional design, and reflexive praxis required for scaffolding workshops cannot be overstated. It can be very time-consuming and complex to create effective supporting documents such as slide decks and handouts, even as these tasks may be construed in some contexts as administratively onerous and intellectually unchallenging.

In our experience, workshops have three nested parts: a **workshop** is composed of **topical activities** which are executed via **certain scaffolds**. Scaffolding should be considered as the guiding principle for the design of the methods and resources.

In a classroom environment, common instructional scaffolds include videos, visual examples, handouts, peer collaboration, teacher modeling, and repetition. For example, in an English class, subject-specific scaffolds may come in the form

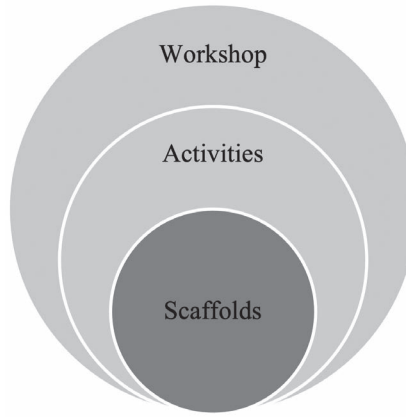

Figure 15.1 Visual depiction of the nested relationship between workshops, activities, and scaffolds. Graphic by the authors.

of sentence starters, word banks, or color coding. Some of these carry into the DH workshop context including visual presentation materials (i.e. slide decks), handouts, agendas, prompts for discussion, working copies of slide decks, timers displayed to all participants, and more.

Choosing Workshop Activities

There are many existing resources, frameworks, and even professional services you can take advantage of to assist in your planning including, but not limited to:

- IDEO Design Firm: www.ideo.com/tools (also discussed in Keralis and Grumbach in this volume) (IDEO n.d.)
- Library Carpentry curricula: https://librarycarpentry.org/lessons/
- Liberating Structures: www.liberatingstructures.com/ls/
- Gamestorming: https://gamestorming.com/
- Socio-Technical Sustainability Roadmap: https://sites.haa.pitt.edu/sustainabilityroadmap/ (Visual Media Workshop at the University of Pittsburgh 2021)
- Yale DHLab project management resources: https://dhlab.yale.edu/
- Universal Design for Learning (UDL). The UDL guidelines are a comprehensive framework that lay out best practices for reaching all participants through multiple means of engagement, representation, and expression: https://udlguidelines.cast.org/ (CAST 2018)
- User Experience workshops for discovery, empathy, design, prioritization, or critique (Kaplan 2019; Avercamp et al. 2021, 53; Russell and Wrisley 2023)

- DevDH.org: a site developed specifically for digital humanists that provides training materials, lectures, exemplars, and links on project management and other topics (Appleford and Guiliano 2023)

The preceding resources contain many engaging and productive activities well-suited for a variety of purposes.

In some cases, you will be best served to design a workshop specific to your needs and interests from scratch. However, some activities come with built-in scaffolding and learning supports. Activities we have found useful include "Four Corners" discussion aka pulse survey wherein participants must decide if they strongly agree, agree, disagree, or strongly disagree with a written prompt; "rose-thorn-bud," which is a self-reporting mechanism on what went well, what did not go well, and what could be improved; Liberating Structures such as TRIZ, Wicked Questions, What I Need from You, and 1–2–4 all, commonly referred to as "think-pair-share" in classroom instruction. Another classroom technique that has strong relevance for DH settings is the idea of a "gallery walk" where participants respond to prompts/questions placed around a room, rotate in their responses, and then move around to view the cumulative responses to every prompt.[3]

Stages in Planning a Scaffolded Workshop

No matter which activity you choose, we recommend the following set of general best practices for scaffolding activities before, during, and after a workshop:

Before

The best way to scaffold a workshop in advance is by preparing and sharing supporting materials with participants in advance. Specifically, we recommend preparing:

- Written prompts and guiding questions
- Supplemental resources including helpful background information and context
- Workshop agendas, including times for introductions and breaks (where necessary)
- Once you have planned these scaffolds, you should send information to participants in advance, including:
    - A reminder of the workshop's purpose i.e. the decisions to be made
    - A reminder of times and locations
    - Your expectations of engagement in advance i.e. "mic on, camera on, be prepared to share ideas in text and speech." This is particularly important for online workshops as expectations may vary widely
    - Ask if they have any accessibility requirements

Once you have prepared your material, run through (pilot) your activities and scaffolds *at least once* before running the actual workshop. Ensure that the prompts or questions to be asked during activities align with your goals for the workshop, and test that questions and prompts will make sense to typical participants. Ideally, visit the physical or digital venue for your workshop and check that it can support different activities i.e. breakout rooms.

During

After a workshop has begun, it is important for the facilitator to be attuned to the needs of the participants and ensure that scaffolds are providing just the right amount of support for the activities to be challenging and stimulating but not frustrating (Belland 2017, 21). This could take the following forms:

- Ideally, having a facilitator/moderator who is not actively participating
- Time for feedback, questions
- Consistent and verbal time-keeping
- Repetition of prompts in multiple modes – i.e. written and verbal
- Multi-modal forms of expression (written, verbal, sketching)
- Slide deck displaying instructions, images, and videos to communicate instructions
- Restating the instructions multiple different ways, giving examples or demonstrating the activity
- Repeating the same exercise multiple times
- Allowing participants to work in pairs or small groups
- Providing examples (written and verbal)

After

The purpose of post-workshop analysis is to debrief what went well and what could be improved and also to hear from workshop participants so that their feedback can be incorporated into future workshop designs. You might approach this by creating:

- Reflection/Agile-style retrospectives for the workshop design team
- Feedback surveys for workshop participants

A Note About Online Workshops

Online workshops have become more common during the global pandemic, and as they reduce the time and expense of travel while enabling wider participation, they are likely to continue. As online workshops do not have the capacity limits that a physical space has, you might be tempted to increase the number of attendees, but bear in mind the dynamics of large groups and the number of breakout rooms available to you when planning numbers. You should also consider the context in which participants may be attending, including the temptation to multi-task or work through breaks, and the impact of attending from shared working spaces.

Online workshops lower some barriers of accessibility to participation by people with some disabilities, but they may also require additional planning to ensure that resources and activities are accessible to those with other disabilities or capabilities. Live transcripts may help some participants, but the software might need to be trained with specialist jargon or tested with local accents. As always, aids to accessibility such as providing links to workshop documents in advance can help all participants. You should always design for the needs of your attendees; the best way to anticipate them is to ask your attendees.

Scaffolds in Action

In this section, we provide examples from our own practice to show how we applied scaffolds in particular contexts to reach specific goals.

Mia has used Gamestorming, Liberating Structures, and collaborative learning methods in her work as a user experience designer and researcher, in teaching digital humanities subjects, and in software and digital heritage projects. Before joining the Library of Congress, Eileen used scaffolding as a guiding best practice to design her lessons as a high school English teacher. Her teaching experience informs her current work as an innovation specialist and research interest in data literacy. Any views expressed in this chapter are her own and do not represent the views of the Library of Congress.

"Machine Learning + Libraries" Conference Workshops[4]

Interactive workshops were used to structure and guide discussion at the Machine Learning + Libraries conference hosted by the LC Labs team at the Library of Congress in 2019 (Jakeway et al. 2020). The workshop goals, activities, and scaffolds are briefly summarized in the table below.

Table 15.2 Workshops, activities, and scaffolds used at the Machine Learning + Libraries Summit

Workshop goal	• Engage peers in productive dialogue about the opportunities and challenges of operationalizing machine learning in cultural heritage organizations.
Activities	• Defining success in (machine learning) projects • Takeaways for collaboration on (machine learning) projects • Milestones for machine learning projects in the next 6 months, 1–2 years, and 3–5 years
Scaffolds	• Piloted workshops with the LC Labs team to solicit feedback and revise accordingly • Paced slides repeating instructions; also repeating instructions aloud • Displayed timer on the screen with visual and audio cues • Participants could express themselves on large sheets of paper; sticky notes; online docs; or verbally using the microphone • Participants worked in small groups of varying sizes: pairs, groups of 3–5, groups of 10, whole group

Data Exploration Design Sprint: Interactive Learning Experience for Student Interns

In the summer of 2021, a cohort of seven interns in the Library of Congress' Digital Strategy Directorate participated in five-day, collaborative design sprint to make a Library of Congress dataset useful to a target audience of their choice. Along with colleague Meghan Ferriter, Eileen designed the experience to introduce students to key concepts of user-centered design and data transformation. Their standalone projects included a mock-up of a tool that could be used to browse a series of 1000 PPTs derived from websites ending in .gov and a series of lesson plans teaching high school students how to use the Newspaper Navigator dataset, created by Library of Congress Innovator in Residence Ben Lee.

Scaffolding was a key guiding principle, since for many students this was their first time working with library data and applying design thinking skills, such as rapid prototyping, in a professional context.[5] It was gratifying to see that students could go from a beginner's understanding of key DH concepts like collections as data to having deep conversations with Library of Congress staff about the ways in which LC data may be used by undergraduate students.

Table 15.3 Activities and scaffolds used in the 2021 Library of Congress summer intern design sprint

Workshop goal	• Design an interactive learning experience for interns to learn about Library of Congress datasets, user-centered design, and pen-and-paper prototyping.
Activities	• Get to know a Library of Congress dataset • Interview a User Experience Designer • Design mockup of an imagined product/interface • Interview a potential user • Refine mock-up and present findings
Scaffolds	• One-on-one support from experts such as senior innovation specialists, subject matter experts, and user experience designers. • Limited cognitive overhead: students received a curated list of datasets of a manageable size with intelligible documentation that could be chosen for the project. • Peer scaffolding by assigning interns into two teams • Daily kick off meetings to reiterate instructions and clarify questions (one on one scaffolding) • Supporting documents such as project overview, timeline, and rotating roles and responsibilities. • Visual presentation aids: PPT slides and handouts for each session • Team-specific direct messaging channel • Hands-on learning: teams presented their final product to Library of Congress staff

Multidisciplinary Design Workshop, Living With Machines

Mia convened an hour-long design workshop in the early stages of the global lockdown, when it became apparent that crowdsourcing projects were meeting a need for positive distraction, bringing forward scheduled design work. The Living with Machines project is a large-scale collaboration between The Alan Turing Institute and the British Library with partner universities. With a particular interest in data science and digital history methods for digitized collections, the project team were largely unfamiliar with crowdsourcing, particularly voluntary crowdsourcing designed to engage the public with museum, library, and archive collections.

Thinking about "design" in the abstract can be challenging. By breaking a large, unfamiliar task into smaller parts, and anchoring some of those parts in familiar activities, scaffolding activities helped the team reach bigger thinking within a short time slot. In allowing time for silent writing and sharing ideas in pairs before discussing them with the wider group, "think-pair-share" enabled a wide range of voices to be heard.

Running this workshop provided valuable lessons that were applied when designing later workshops. It demonstrated the value of structured activities like 1–2–4-all within short meetings. As one of the first online workshops during lockdown, and at a time when schools were closed and many ordinary activities were suspended, Mia learnt the value of setting expectations and providing information about activities in advance, while also allowing time to present them within the workshop for people who had not had a chance to read material in advance.

Table 15.4 Activities and scaffolds used at the Living with Machines design workshop.

Workshop goal	• Ideation – refine a research question that fit within certain parameters (overall project research, digitized sources available, crowdsourced tasks and workflows available on our platform) – suitable for a "minimum viable product" • Engage the wider team with the design process for crowdsourced tasks with a public engagement element

Activities	• Reviewing sample newspaper articles that mention specific keywords of interest to:
	  • Become familiar with these sources
	  • Generate ideas for potential research angles
	• Sharing ideas and assessing them in wider context
	• Summarizing discussion to reinforce conclusions

Scaffolds	• Prepared "think-pair-share" instructions • Prepared sample materials (digitized articles, with thanks to Federico Nanni) • Pre-workshop information about the workshop goals in wider context

The Collective Wisdom Workshops

The Collective Wisdom project (Ridge, Blickhan, and Ferriter 2020) is funded by a networking grant from the Arts and Humanities Research Council (https://gtr.ukri.org/projects?ref=AH%2FT013052%2F1), with Mia as Principal Investigator and Co-Investigators Meghan Ferriter (Library of Congress) and Samantha Blickhan (Zooniverse). Originally proposed as a two-day in-person event, these project workshops were re-imagined as shorter online events timed to fit within the working day for UK- and US-based attendees. As the timeframe was so short, scaffolded activities were vital for achieving our goals within a few hours. In addition to Meghan and Sam, whose collaboration on workshop goals, format, and invitations was crucial, Mia is indebted to Abbey Potter and Eileen Jakeway from the Library of Congress Digital Innovation Lab for their support in developing the scaffolds that supported broader workshop goals and activities.

Table 15.5 Workshops, activities, and scaffolds used for the Collective Wisdom project.

Workshop goal	• Contribute to project's aim to develop an international community of practice around crowdsourcing in museums, libraries, archives, and digital humanities • Create a space in which discussion could bridge research and practice • Articulate emerging, intractable, and unsolved challenges that would benefit from further funding for collaborative work • Document discussion as the basis for a white paper for policy makers
Activities	• Optional pre-workshop "coffee and networking" designed to replicate the serendipity of mingling at physical events • Introductions (name, organization, icebreaker question) • Topic specific discussions including designing sustainable projects, providing evidence for the benefits of participation in crowdsourcing, learning from other disciplines
Scaffolds	• Structured invitations to participate that established the project's values and goals • Reflection on lessons to be learnt from other online events and fed ideas into the planning process • Backchannels for workshop organizers to communicate while onscreen • Reminders about the workshops that set expectations for active, constructive participation • Slides including workshop guidelines for participants, timetables, overview of activity structures, prompts for discussion • "Coffee and networking" activity with participants put into random breakout groups as they arrived, with the prompt to share "two good things that you've done or seen recently, and one future good thing," with others guessing which things had already happened and which was yet to happen • Explanatory material for activities: Round Robin; 1–4-All; TRIZ; 15% Solutions; Chatterfall[6] • Google Docs linked from slides to record specific topics • Retrospective to highlight "what went well" and what "could be better"

Feedback showed that the majority of participants felt more connected to others in the field, despite their relatively limited time together. Some sent spontaneous feedback that they found the structures so helpful that they will start using them in their own workshops. One participant provided valuable feedback that the prompts to (at times, simultaneously) talk or listen with their camera on while also paying attention to chat or documentation was exhausting.

While not unique to this workshop, balancing the different levels of expertise with the topic was difficult, especially as the online format meant we couldn't easily spot people who were looking a bit lost and provide more information on the spot.

Conclusion

As educators, we know that there is no such thing as teaching to the "least common denominator" in the classroom – when a lesson is well-scaffolded and accessible, all students benefit, even the students who operate more autonomously. The same holds true for professionals working together in the digital humanities. Scaffolding a workshop allows for multiple points of entry into a discussion, multiple perspectives on a problem, and shared ownership of outcomes. As a workshop process, scaffolding also requires a degree of humility: engaging with scaffolds is fundamentally accepting that you have *more to learn*. This may feel uncomfortable at first but we hope our chapter has shown that structured activities can make project workshops more efficient, more collaborative, and even more enjoyable!

Fortunately, as you include more structured activities within workshops and meetings, the overhead of choosing the right structure for the desired outcome decreases. As team members and collaborators become more familiar with common structures, less time may be spent on explanation and more on fruitful discussion. As our examples show, you can start by including structured activities within short meetings where decisions need to be made and adjusting your methods to suit your specific context. And remember, scaffolding all starts with meeting people where they are. In this chapter we aimed to make it as easy as possible for our readers to learn and apply tailored scaffolds for specific DH workshop use cases. Wherever you are, we hope you finish this chapter feeling better prepared to tackle your digital humanities workshops!

Ultimately, what scaffolding provides is a clear pathway to productive activities in effective, enjoyable, and efficient workshops that can meet project goals while recognizing, respecting, and honoring diverse perspectives within DH projects.

Notes

1 The views expressed by Eileen J. Manchester are written in her personal capacity; although her perspective is shaped by her experience as an Innovation Specialist on the LC Labs team, her opinions do not represent the views of the Library of Congress. Mia Ridge has drawn on collaborations at the British Library and other cultural institutions, in addition to her training in human-centered systems and software development.

2 For an example of how to structure a collection selection workshop, see the framework developed by AVP in collaboration with LC Labs on the experimental project *Humans in the Loop:* https://labs.loc.gov/static/labs/work/reports/LC-Labs-Humans-in-the-Loop-Recommendations-Report-final.pdf
3 For more information on these techniques, see: Four Corners Discussion (pulse survey), www.facinghistory.org/resource-library/teaching-strategies/four-corners; rose-thorn-bud, www.mindfulschools.org/inspiration/mindful-reflection/; TRIZ, www.liberatingstructures.com/6-making-space-with-triz/; Wicked Questions, www.liberating-structures.com/4-wicked-questions/; What I Need from You, www.liberatingstructures.com/24-what-i-need-from-you-winfy/; 1–2–4 all (think-pair-share), www.liberating-structures.com/1-1-2-4-all/; gallery walk, www.facinghistory.org/resource-library/teaching-strategies/gallery-walk
4 Eileen is grateful to the LC Labs team, and especially Meghan Ferriter and Abbey Potter, for their willingness to dig in and "workshop" many times these structures before they assumed their final forms. Her discussion of these workshops reflects analysis conducted in her non-official capacity.
5 The design sprint exercise builds on the team's previous experience conducting a "design sprint" with JSTOR Labs in 2018. The outcomes of this intense design experience were showcased at the "Inside Baseball Showcase" in July 2018, a recording of which can be viewed at www.youtube.com/watch?v=OUZynlvsQSo. The outcomes of the 2021 Data Exploration design sprint are described by the student participants in more detail in the following posts on The Signal Blog:https://blogs.loc.gov/thesignal/2021/08/next-slide-please-2021-digital-strategy-summer-intern-design-sprint-part-i/ and https://blogs.loc.gov/thesignal/2021/08/sparking-the-datamagination-2021-digital-strategy-summer-intern-design-sprint-part-ii/.
6 In a chatterfall, you give participants a prompt to respond to in chat – but ask them to hold back on posting until a given signal, when everyone posts at once.

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16 Critically Reflective and Lighthearted

The Keys to Learning Digital Heritage Skills

Pakhee Kumar and Henriette Roued

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Like digital humanities, the field of digital heritage comes with a wide variety of definitions, discourses, and debates (Chowdhury and Ruthven 2015). At an international level, digital heritage is recognized with the adoption of the "UNESCO Charter on the Preservation of the Digital Heritage" in 2003. The charter understands digital heritage both as a digitization of previously analog heritage material and as an archiving and preservation of current, born-digital material (UNESCO 2003). The charter has been criticized for taking a rather narrow view of digital heritage (Landorf 2020; Lusenet 2007). Researchers have argued that this is not only concerned with the implementation of digital technologies but also encompasses the communication and relationships facilitated by these technologies (Cameron and Kenderdine 2007).

We illustrate this with an example of teaching students to do data analysis and visualization of 1840s census records. Here we have identified three different aspects. First, to understand the cultural practice of taking a census in this historical time-period. Second, the digitization and transcription process which was undertaken by volunteers in the 1990s. Third, the current use of digital tools to analyze and visualize data. These three aspects are often taught and understood separately. The first and third aspects might be taught as a part of history and computer science courses respectively. The second might be covered in information science training, digital humanities sessions, if at all. Yet, digitization processes form a large part of the digital heritage practices today. This work is costly, slow, and greatly challenged in terms of use and impact, and thus sustainability (Terras 2012).

The fundamental goals in digital heritage are continuity (UNESCO 2003) and sustainability. Robey (2011) discussed two aspects of sustainability for digital resources in the humanities: 1) academic sustainability and 2) technical sustainability. Both relate to whether these digital resources are continuously kept up to date in their academic

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content and/or their technology. In addition, there is the issue of financial sustainability as many digital resources in the humanities are developed through external funding (Zorich 2013) and for time-limited projects (Terras 2012). We can also add user sustainability and ask to which degree there is sustained and significant use of the resources (Chowdhury 2015). The resources should fit the usage needs of the target community as well presenting a user-friendly interface (Warwick et al. 2008). While interface design may have a higher priority these days the authors would still argue that there is a substantial lack of understanding of both use and users of resources in digital heritage. In a keynote for the Sharing is Caring Conference, Roued-Cunliffe (2021b) asked whether a lack of knowledge, about who can use digital heritage resources and how, is currently one of the largest sustainability issues for digital heritage. By managing to identify interested and active user groups for digital heritage we believe that the likelihood of academic, technical, and financial sustainability will increase as a consequence of user sustainability. Therefore, we argue that a holistic approach has the potential to develop the use of digital heritage in such a direction.

To achieve this, synergy between skills is vital. This is not new; in fact the whole field of digital heritage and digital humanities is built on this premise of cross-disciplinary skills coming together (Rodríguez-Ortega 2018). People with digital skills and heritage skills often form interdisciplinary teams for creating digital heritage projects. These projects require this mix of skills to provide complex technical solutions and engaging content. While Bod in 2013 acknowledged a growing trend in the integration of supra-disciplinary methods as well as a digital approach he also warns of the dangers of uncritically combining different fields (Bod 2013, 362). This is a real threat when both fields and skills are not combined carefully. For instance, a project with a historian and a programmer who do not understand each other or are not able to communicate their own perspectives. This lack of synergy and understanding would most likely result in an outcome that is fractured and not sustainable.

The argument here is that there is a scope for training individuals so that they, in addition to their educational background and existing skills, can understand and use more of the different skills that are essential for holistic digital heritage projects. Through this perspective we see a potential for digital heritage work that as Lunenfeld puts it: "grounds the insights of theory in the constraints of practice" instead of sliding into a "science-fictionalized discourse" (Lunenfeld 1999, xix). Rather than solely theoreticized about 0s and 1s it grounds historical theory and method in the understanding of digital heritage work as a "series of design, technical and content decisions" (Sternfeld 2012, 268). Conversely, it pulls professionals back from fully fledged fantasies of virtual this-and-that to a critical understanding of what is useful and usable to a wide range of practitioners and a heritage-interested public.

Pedagogical Approaches

In the courses and workshops, we teach, it is an aim to combine these aspects of critical historical theory and method with an understanding of decision making in digital development. In doing so, we have come across issues that we understand as stemming from a STEM vs. Arts divide where the humanities, at least in

regards to politics (4Humanities n.d.) and infrastructure (Van der Walt, Steyn, Trusler, and Van Zaanen 2023), seems to keep coming up short. The more recent STEAM movement is an acknowledgement of the important role the creative arts play in science, technology, engineering, and mathematics (Harris and de Bruin 2018). However, it is also a reaction to this divide that is perpetuated between the humanities and technology. Like colleagues in digital humanities, we too have experienced this notion of a divide throughout our studies and work. From fellow students who cannot fathom our enthusiasm for bridging this divide (Yeung 2020). From colleagues who are suspicious about the inclusion of computational methods and tools (Cordell 2016; Marche 2012) and those who do not see their objects of study as data (Posner 2015; Schöch 2013). Nevertheless, through the workshops with practitioners and students we have developed means to try and counteract this issue of division, while acknowledging that it still plays a role.

This has resulted in pedagogical approaches with a focus on "critically reflective" and "lighthearted." In this chapter, we will present two such approaches that showcase how we integrate each of these foci in our pedagogy. We come from similar backgrounds. We are both academics trained in the heritage field with a strong focus on digital heritage in our research and teaching. In our courses and workshops, we work with heritage data which we understand as "both the datasets made up of heritage information and information about heritage objects (i.e., metadata)" (Roued-Cunliffe 2020, XX), in other words data *as* heritage and data *about* heritage (Albuerne, Grau-Bove, and Strlic 2018).

Pakhee Kumar has a background in architecture and heritage conservation and currently researches and teaches data science in heritage at University College London. In the first approach, Kumar explores experiences of teaching students and practitioners many of which have a background from outside the humanities. As a result, they have limited understanding of the issues, limitations, and biases that form cultural discourses. Therefore, Kumar focuses on critical reflection as a pedagogical approach.

Henriette Roued has a background in archeology and archeological computing and currently researches open data and participation in heritage. Roued has extensive experience in teaching and communicating digital heritage and heritage data skills to practitioners in heritage institutions and students from the humanities at the University of Copenhagen. In the second approach, Roued explores experience with integrating a sense of lightheartedness into the classroom when teaching technical skills to participants with a background in the humanities.

Approach 1: Critically Reflective (by Pakhee Kumar)

Working with heritage data, whether user-generated content or collected by a researcher, can be useful in understanding an array of issues that occur in heritage practices. However, data comes with certain limitations, biases, and ethical issues (Olteanu et al. 2019). Therefore, critical reflection is an important tool to understand the implications of this on data work. In fact, the idea of source criticism is a foundational method in the humanities (Bod 2013, 352). In the workshops and formal curriculum, I observed that those coming from a technical background are proficient

in data scraping, i.e., collecting data from various sources on the World Wide Web, as well as data analysis, and visualization. However, critical reflection is often a missing tool. In absence of critical reflection, the data and analysis can be misinterpreted and misrepresented. In this section, I explore critical analysis using three examples from workshops and formal curriculum. These examples discuss all stages of research including data collection, processing, analysis, and interpretation of results.

Data collection is the key to answering the research questions. For this purpose, I hacked a quote from Lewis Carroll's *Alice in Wonderland* to illustrate the importance of collecting the appropriate data for answering the research question.

> "*Would you tell me, please, what data I ought to collect?*"
> "*That depends a good deal on what you want to research*."
> *"I don't care much what -" said Alice*.
> "*Then it doesn't matter what data you collect*."

Whether the data collected is appropriate to answer the questions asked, is often the first thing to be reflected upon. Here, I use the example of a Crystal Palace Dinosaur group work. Erected in 1854, Crystal Palace Dinosaurs are the world's first full scale reconstruction of dinosaurs (Osterloff n.d.) and are located in Crystal Palace Park. Due to large cracks the 30 sculptures were included in Historic England's Heritage at Risk register in 2020 (Historic England 2020). Moreover, it was speculated that due to COVID-19 the usage of park may have changed. In groups the students were asked to investigate the impact of these two significant changes, in terms of visitor numbers, behavior, and experience. In order to do this, they had to collect online datasets and perform an analysis on this data. The groups decided to use data from different platforms, for example Twitter, Google Trends, and Tripadvisor.

Throughout this work the students were encouraged to reflect on the appropriateness of the collected data and the data source for investigating this impact. In supervision I would for example ask them to reflect on the following questions: 1) Using the platforms of their choice, would they be able to gather data that covered a period both before and during the two changes in question to compare and evaluate the impact? 2) Does the platform of their choice include information relating to the type of impact they are looking at? For example, Google Trends is useful to understand search behavior but not visitor behavior. 3) Is the amount of data collected adequate to understand the impacts?

In summary, then, data collection is an important step to answer the research question.

Processing and analyzing heritage data may require reflection upon the heritage users and participants in heritage projects. Participants in projects often have diverse backgrounds, expertise, and interests (Blaser 2014). This can impact the outcome of projects, particularly crowdsourcing projects where opinions can differ significantly due to knowledge and experience. To explore this, I use the example of a crowdsourcing group project set up by the students on Zooniverse using images of historic combs to explore "damage" and identify levels of "unacceptable damage." They invited participants to identify the level of damage and whether a

comb was worth displaying in a museum. Between March and April 2021, the project received participation from the public. However, the participants' backgrounds were not known to the students, particularly if the participants were professionals working in the museums or allied fields. The absence of this data results in a limited understanding of the results. For instance, whether the arts and culture professionals' opinions differ from community participants, i.e., the influence of training and employment in the cultural sector on participants' opinions.

When using heritage data, one important question is what data is not available to us. This is particularly true for digitized archival records. Archives can present partial stories due to their collection policies, the donations they receive, and the unlinked collections present in different archives. The example of archival records of the 1966 Florence Flood illustrates unlinked collections in different archives and limitations of understanding the event due to this. The 1966 Florence Flood illustrates crowdsourcing for heritage before the internet age where people from various parts of the world contribute money, materials, and knowledge to rescue heritage impacted by the disaster (Kumar 2020). One of the important findings in this research is that significant contributions were received from the USA. However, the data I used for my research is limited to the *Fondazione Ragghianti* Archives in Lucca, Italy. Other archives also have data on the 1966 Florence Flood, such as the National Archives of the UK and the Villa I Tatti center in Florence, Italy. Moreover, we also need to accept that much of the data could have also been lost with time. Therefore, our understanding of the story will always be rather incomplete. In the workshops I conducted and in the formal curriculum where I use this example, I always illustrate this limitation of data to reflect upon what is not available to us and how our understanding of the event may be limited due to this.

Approach 2: Lighthearted (by Henriette Roued)

Both as a student and as a working archeologist, I had many opportunities to be "the one that used the digital systems." These days in the humanities faculty I still often hear antipathy towards spreadsheets. Putting aside the personal career benefits of being "the one who knows computers" in a still relatively non-tech environment there are many pitfalls, too. The heritage sector is, like the rest of society, producing increasing amounts of data – both digitized through the many scanning and transcription projects and born-digital through for example archeology or the archiving of the past 30 years of public activity (D'Ignazio and Bhargava 2018). What happens when those who have charge of these collections or who need them for their research are reluctant to work with raw data structures and interfaces? I have observed a reliance on external developers who do not necessarily understand the heritage context or the user needs, and who are expensive. I often hear of the lack of funding as a hindrance to engaging with these datasets. However, my experience is that you can do a lot with a little technical know-how. Take programming for example. By understanding the basics and knowing where and how to find solutions for more specific or advanced problems you can get far. But getting there requires confidence in one's ability (Kennedy 2017). This confidence can be quite

fragile if we do not have the experience to back it up (Cohoon and Aspray 2008). This is where the principle of lightheartedness comes into play.

When teaching my then 5-year-old daughter to program I noticed that the apps and books on programming for kids begin by motivating through fun and by teaching basic programming skills. The most basic programming skill that my daughter learned was the general understanding that programming is in fact just step-by-step instructions that tell the computer what to do – instructions that come from decisions made by the programmer. This is an important point to make in a world where the programming behind many computers and systems is invisible to most people. If we cannot see into the "black box" the actions of these systems may even seem magical. But it is important to understand that every computer, whether your PC or your coffee machine, has been programmed by someone, with some agenda, which may not be visible if you cannot understand the code. In the humanities in general and in heritage specifically, this is important because we are acutely aware of critical source use. We should not let go of this urge to critique our sources because they are presented by a computer.

But if we already have anxiety about technology (Phillips, Bordelon, and Terry Kapral 2023) combined with little confidence in our own technical skills (Joseph et al. 2023), this knowledge is not enough. I believe that we need a catalyst and I think that "fun" can act as such, in the same way that it does for children. Therefore, I use datasets like the 19th-century dog protocols in coursework and workshop tutorials (Roued-Cunliffe 2021a). While cats rule the internet – dogs come in on a close second. In the same way that most of us find dog memes and videos lighthearted and relaxing, the idea was that working with 19th-century dogs could be equally fun. I really think it has the potential to let people's guards down and keep the "inner bully" from shouting "you can't do this." The dataset consists of over 1000 registrations of fees by dog owners between 1824 and 1874 in Kolding, Denmark. The handwritten protocol was kept by the local police in conformance with the 1824 law that required all pet dogs to wear a dog tag – for which the owner paid a yearly registration fee. Dogs without a tag were to be put down due to the risk of rabies. Along with the payment and the owner's name the police sometimes registered information about the dog, such as their name, breed, color, sex, and age.

The dataset has served several learning functions from the transcription process to the creation of an entity-relationship model and database, to developing a website to disseminate the collection, and lastly to data science projects creating statistics over the dogs' names, breeds, and colors. Especially in the database modeling phase I observed how the dogs served the function of keeping this foreign concept lighthearted. Data modeling can be a difficult exercise for beginners. While entities and relationships can sound like complicated techno-jargon, talking about dogs and owners and how they are connected lightens the mood considerably. The participants could reflect on whether the relationship between dogs and owners is one-to-one or one-to-many. They could strategize on ways to publish the dataset for different user groups like dog enthusiasts or family historians. Finally, they could analyze and visualize this dataset to find the most popular dog names (it is "Perle").

Along the way, these technical lessons were framed as decision-making processes in order to turn the focus away from the computer and towards the participants and their agency. As well as introducing the participants to various technical processes, the important part of this pedagogical approach is to teach them to take control over and make decisions about this technology in relation to heritage. For example, deciding how to break information about the past into structured data that can be analyzed and understood in the future (Posner 2015; Merry n.d.). Through this process, I have observed that they not only improve their technical skills but also their ability to understand and critique technology in general. They were able to experience the "tension between the power of computation and the inadequacy of data to truly represent reality" (Posner 2015) and their own agency in negotiating between the two.

Conclusion

Heritage data forms a large part of the field of digital heritage and the form, context, and users of this heritage data pose many new challenges. Thus, working with this data requires various different skills ranging from a critical understanding of historical sources to making decisions about and performing analysis and visualization of heritage datasets. This chapter argues that a holistic approach and strong synergy between these skills are vital for the sustainability of digital heritage projects. Nevertheless, these skills are often separated in practice and education. From our experience, participants' understanding of heritage data is rather limited; usually they have a stronger understanding of either cultural discourses or digital technology, but rarely the combination of the two aspects.

The authors each focus on a particular pedagogical approach and explore how they have incorporated these into their teaching to bridge these gaps in skills. Kumar explores introducing heritage skills, such as critical reflection, to participants with a more technical background. Roued explores teaching technical skills to participants with a humanities background using a lighthearted approach. These two approaches show a path to creating better synergy in heritage data projects through a more holistic understanding of the necessary skills involved. However, this is not meant to transform historians into computer scientists or vice versa. Rather, both approaches serve to build a bridge between the skills and understanding of either discipline.

By teaching those with a humanities background how to understand the basic concepts of programming or making a database, they get the language and tools that allow them to use and take part in the digital aspects of a project. Nevertheless, Roued's experience has shown that confidence in one's own technical abilities or lack thereof plays a large role. Therefore, lightheartedness is the approach used to introduce basic technical skills by way of a less serious source material (in this case one about historical dogs). The participants' main takeaway is an understanding of all the decisions they can and must make when working with a heritage data project. In this environment, participants are more likely to transform this understanding into future projects. It increases their confidence and their ability to question technology and the decisions behind it.

Conversely, while solid data structures and great user interface design require substantial technical skills, these become meaningless without a critical understanding of the historical sources, users, and use. Kumar has explored her experience with the critical reflections and questions that need to be asked of heritage data, when collecting, analyzing, or presenting it. Participants with a technical background need to practice these skills in relation to the work they do. Otherwise, we fear analysis and presentation of heritage data that at best is useless and at its worst is downright misinformative. Putting these critical skills into use enables participants to better understand the heritage and data they work on in the future. It will also allow them to ask more critical questions of the heritage institutions, practitioners, and data.

Understanding participants' background knowledge and skills is an important lesson we have learnt when delivering workshops on digital heritage. In that, we understand which approach we need to employ – whether lighthearted, critically reflective or a mix of both. Thus, we can adapt our instructions to bridge the gap between the different skills that we see as necessary in order to develop sustainable digital heritage projects.

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17 Transitioning Synchronous Workshops Into Asynchronous Digital Resources

A Case Study of Project Management and DevDH.org

Jennifer Guiliano and Simon Appleford

Hidden away in the basement of McKeldin Library on the campus of the University of Maryland used to be one of the oldest digital humanities centers in the United States, the Maryland Institute for Technology in the Humanities (MITH). Founded in 1999 under Director Martha Nell Smith, MITH incubated notable projects including the Dickinson Electronic Archives (www.emilydickinson.org/), Romantic Circles (http://romantic-circles.org/), the Shakespeare Quartos Archives (www.quartos.org/), and dozens of others (https://mith.umd.edu/research/) from its subterranean offices (Smith et al. 1994; Youngquist and Wang n.d.; Kuhta et al. 2019). It also was the original host for the Digital Humanities Winter Institute (DHWI), now the Humanities Intensive Learning and Teaching Institute (HILT). DHWI was founded in 2012 by myself (Jennifer Guiliano) and Trevor Muñoz, both then assistant directors at MITH (Humanities Intensive Learning and Teaching 2013). It was initially conceptualized as the US-based iteration of the Digital Humanities Summer Institute (DHSI), which at the time welcomed hundreds of digital humanists to the University of Victoria, British Columbia campus every summer (Digital Humanities Summer Institute n.d.).[1] DHSI offered a five-day long training opportunity that allowed attendees to select a course specialization and attend lectures and social events. Institute courses were taught by highly skilled instructors who would develop syllabus and course content with the goal of attendees leaving with a solid grasp of their particular course topic as well as introductions to dozens if not hundreds of other digital humanists who might support one another in their research and teaching. For us, the appeal of the DHSI model was the ability to offer workshop-style courses that highlighted our own individual philosophy of digital humanities. Given the tremendous anxiety around the question of what digital humanities was and what it did, DHWI became one way Trevor and I articulated what we wanted to see as the future of the digital humanities. It allowed us to focus people's attention on emerging areas by bringing non-Maryland instructors to our campus. We could not only grow local access to particular topics but could also highlight innovative areas of the field that were little addressed as well as build capacity in key areas that we felt digital humanities was lacking. The benefit to MITH, as its host, was that DHWI enabled MITH

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to address the need for local faculty, staff, and students to receive training at a scale better than the one-to-one training model that MITH had been utilizing. It also allowed us to support MITH's own personnel, subtly raising the profile of our own staff as well as other digital humanists whom we brought to teach at the institute. The Project Development workshop course (taught by the authors of this chapter) was one such example of the effort to highlight local expertise while building digital humanities capacity. This chapter highlights how to convert in-person workshop curricula into a reusable, digital curricular project.

When Trevor and I began to discuss potential training for HILT, we identified project development as a necessary course. In part, this was because of our own desire as digital humanities staff members that more faculty and staff had expertise in developing projects. But it was also because there was almost no consideration of project development in the digital humanities. The notable exception to this was Lynne Siemens, who offers her "Issues in Large Project Planning and Management" workshop regularly at DHSI. The 2012 iteration offered at DHSI, for example, was organized around five sessions: 1) the basics of project management including definitions and models of project management; 2) project teams and groups/project start which focused on building a project team and how to initiate a project; 3 and 4) project planning and modeling, which focused on identifying work, scheduling, budgeting, risk assessment, and project balancing; and 5) project change, reporting and managing change which focused on how to address issues of project scope creep and project reviewing and reporting. With attention to items like responsibility matrices, competency assessments, project agreements and charters, as well as critical path analysis, Siemens' workshop course offered fundamental techniques in business management for humanists (Siemens 2012; see also Siemens 2016). A pivot point for the course was both its "large project" designation as well as its procedurally heavy approach to project initiation. While projects that intended to involve multiple scholars, institutions, or staffs could easily adopt Siemens' process for project planning, it was less responsive to the more-common (for 2012) single scholar or small handful of scholar and staff persons-type project. While it would be great if every project began with assessments and responsibility outlines and formal documents of initiation, most digital humanists in our experience started with some tenuous goal rather than a clear vision of project completion.

As we (Simon and Jennifer) began to approach adapting Lynne's workshop for DHWI, we started with three key differences: 1) we wanted a curriculum that served an individual scholar who hoped to start a project; 2) we wanted a workshop that articulated not just planning and initiation but also how to secure funding for one's project; and 3) we wanted to operate from the assumption that there would be no local support for the project as it was planned and continued. Our course workshop description reflected this shift in direction:

> The Project Development course will explore the fundamentals of project design including, but not limited to: formulating appropriate disciplinary questions for digital humanities research, investigating digital humanities tools and resources, structuring your first project, designing publicity and

> websites for your project, documenting your project work, writing your first grant proposal, and managing your budget.
>
> (Guiliano 2013)

Our intended outcome was that a participant leaving the course would have a clearly articulated research question, a proposed set of tools or activities that would allow to them to investigate their question, an outline of tasks noting which required partnership or additional expertise, a rough outline of a publicity and website plan, and an outline that could support both their first grant and their first budget. The success of our course would be judged by whether attendees had, as Lynne Siemens notes in her coursepak, a "better grasp on the fundamentals of developing a project idea from inception to fruition with specific insights into how to fund, manage, and deploy a research idea" (Siemens 2012, 21).

Each workshop session that comprised the training was organized around a key topic with topics moving from conceptualization to discovery; from discovery of resources and tools to articulation of project goals and identity; from articulation to delineation of tasks and workplans; and from delineation to funding, reporting, and revising one's project. Generally, sessions were governed by the amount of time allotted by the DHWI schedule. Thus, for example, our first session on formulating disciplinary ideas as research questions lasted an hour. Within each session, we followed a general pattern of introducing the topic of the session, giving an overview of approaches, examples, or strategies, with time for questions and answers. Participants were provided a detailed set of readings on the topic that could support or contradict the lecture portion of the session as well as a resources guide that would point them towards further study after the session ended.

Using a lightweight revised version of Siemens' competency assessment, we began by asking participants a set of questions:

> What do you do differently/better than someone else? What do you spend time on? What is a major issue/challenge/bone of contention within your field? What don't people understand about something you work on? If you could do anything with your time regardless of money, what would it be?

The first two questions were designed to identify how participants were currently spending their research time while the third asked them to identify contexts within their disciplines where there was dynamic debate. Importantly, these first two questions also were intended to suggest to participants that they could capitalize on their existing skills and work. In our previous roles as digital humanities center staff at the University of Illinois' Institute for Computing in the Humanities, Arts, and Social Sciences and at the University of South Carolina's Center for Digital Humanities, we'd heard frequently from those seeking to start a digital humanities project that they lacked the time to work on the project and that they felt it needed to be an entirely new and emerging area of research for their work to be taken seriously. Part of our strategy was to begin by suggesting that converting work one already did into an organized research agenda could both bolster the coherency

between their analog and digital research but also to highlight for participants that what constitutes "research" is often determined by the contexts that you operate in. This was a successful intervention as we also noted that a key element of one's project was communicating not just what you were doing but why it mattered to you and to those around you. One slide, for example, noted that "developing research ideas is more about communication than creativity." We'd return to that idea repeatedly throughout the workshop as we focused on project statements, branding and websites, as well as project products including reports.

Picking up on the issue of the amount of time allotted to research, we also provided participants with our five-part formula for a research project. All successful projects in the digital humanities, no matter whether it is an event-based project like developing a conference or a research-based project like analyzing a corpus or developing visualizations, are a sequence of related activities that:

(1) are derived from a question, issue or problem;
(2) each require the deployment of resources, namely people, tools, funding, or even space;
(3) have a specific audience or set of participants;
(4) involve all of these components: questions/issue/problem + activities + resources + audience result in a product that is made available;
(5) use examples of successful digital humanities projects, including Zotero, HistoryPin, the Real Faces of Invisible Australia, London Lives and Locating London's Past (Roy Rosenzweig Center for History and New Media, George Mason University n.d.; HistoryPin n.d.; Bagnall and Sherratt n.d.; Hitchcock et al. 2018; Davies et al. 2011).

Importantly, we explored with participants how different groups of digital humanities researchers articulated their formula. Participants noted how resource allocation and audience determination could widely vary among projects; they also noted that short-term exploratory projects – such as Real Faces of White Australia (www.realfaceofwhiteaustralia.net/faces/) operated quite differently in articulating their humanities questions than a project like Locating London's Past (www.locatinglondon.org/). One began with a team of two researchers attempting to demonstrate a new way to view archival records while the other was a multi-year effort building on previous projects by teams of scholars that stretched more than a decade. By providing participants with a sense of what types of questions are asked and how they are articulated, we weren't suggesting that participants should emulate these projects directly. Rather, we were illustrating how the five-part formula can scale across time and across partnerships.

In our discussion of the five-part formula, it was quite clear that part of what participants appreciated about the formulaic approach to initiating a digital humanities research project was that they could identify which portions of the formula they felt confident in versus which areas required further investigation. One participant, for example, noted that they'd conceptualized their project audience as themselves; yet, to secure resources they'd need support from their colleagues,

administrators, and funders so they'd need to broaden how they presented and discussed their project. Many noted that rather than one humanities question driving their research, they had a series of questions some of which were related to one another while others were tangential. This led to a productive conversation about how to break down a research question into multiple parts or even multiple projects. This encouraged participants to both limit the scope of their potential project but also to recognize that a single project may require entirely different research approaches. Each portion of the formula that participants built in the first session then became raw material for further exploration in other sessions in the workshop. For example, participants reviewed and discussed successful – and not so successful – project statements. Turning their question/issue/problem into a paragraph of prose encouraged participants to think through how articulating a project in writing sets expectations for what others may encounter with the project. Using the example of a project that sought to explore Latent Dirichlet Allocation (LDA) topic modeling via a conference where researchers presented their work, part of what was illustrated was how choices within the formula can constrain or align one's project. Thus, an audience of researchers who were specialists in topic modeling allowed us to use highly specialized language in describing the conference, but when seeking funding from the National Endowment for the Humanities, definitions needed to be provided and a case made that the event would benefit more than just the researchers who were going to attend the conference. While this is just one example of how workshop sessions were built and how the initial session was revisited throughout the five-day curriculum, it highlights an important pedagogical strategy for us as workshop instructors.[2]

As we learned from our post-course survey, we were semi-successful. Attendees felt like they were able to clearly identify their research questions and outline tasks, outcomes, and approaches that could serve as the key activities of their effort. They also noted that being introduced to the variety of digital humanities tools and resources bolstered their sense that they felt more prepared for their first project than when they arrived. Importantly, though, this first iteration of the workshop course taught us a few valuable lessons. First, a five-day-long course totaling twenty-five contact hours was onerous for both participants and instructors. As one participant noted, "the amount of quality information we received was so beneficial that it became exhausting at times, but I know the packet provided by the instructors and then expanded on in my notes will be my grant bible in the months and years to come." Secondly, despite the course description being geared towards beginning digital humanists, the actual attendees straddled everything from those with little digital humanities experience to those who felt quite comfortable with digital tools and approaches. One impact of this was that it was difficult to maintain a common lexicon: how much definition was needed? What could be quickly glossed? As one participant noted, the "specialized language" could be problematic as the course moved quickly through topics. Finding time to pause, explain, and connect back to previous topics was quite stressful for us as instructors. Finally, given the scope of the workshop course, we'd intended that participants be provided with slides, outlines, and handouts but we didn't

anticipate the volume of assistance participants desired to accompany course materials. For months, and even years, following the first course, previous participants would email with questions or scenarios where they needed assistance. This issue highlighted for us that we'd assumed the workshop would be an encapsulated experience where participants would be provided resources for their own independent further discovery, not that they'd wish to revisit course materials, topics, and approaches with us indefinitely. We commented on updated budgets, full grant narratives, and project plans. We deferred requests for recorded versions of our lectures but honored requests for individual and project consultations.

Cumulatively, these issues highlighted for us that our initial approach to the workshop was flawed. We assumed the majority of course engagement would occur within the five-day span of the workshop, but auditory processing and physical fatigue meant that participants reached maximum attention and information well before the midpoint of the week. While participants continued to engage, they wanted to revisit earlier conversations and lectures to review what we'd discussed long after their departure. Additionally, as they attempted to implement the project plans they'd developed, they encountered issues that complicated their approaches. While we'd used examples and scenarios in class, they often had problems that weren't accounted for in their particular local contexts. Thus, they needed additional materials that weren't included in our initial curriculum. While this would always be the case no matter how well-designed a workshop is, the need to flexibly incorporate new materials on the fly demanded both rapid response and a measure of adaptiveness that was quite challenging for instructors as we may not have fully thought out the example chosen or how to present it. For example, one participant wished to incorporate their project within their classroom; given that pedagogy workshops themselves often occupy a full week, we had to figure out how to provide micro-discussions for that individual that did not detract from the rest of our curriculum. Our initial curriculum did not specially address how to work with students; we needed to augment the course after the fact to address this oversight. Augmentation was not our only lingering issue. It was also that we needed to transform materials that had been intended for in-person instruction into materials that could be shared virtually.

We launched DevDH.org in Spring 2014 as a response to the issue of both the continuing need for access to material as well as the need for new workshop curricula (Guiliano and Appleford n.d.). Heavily influenced by the structure of our in-person DHWI workshop, the site serves as a virtual training resource that straddles the boundaries of research, teaching, and service. It reflects the interrelationships of digital methods and approaches and serves as a digital repository focusing on best practices and resources for digital humanities program management and development. We offer our materials under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License to facilitate both adoption and updates (Creative Commons n.d.). Providing access to slide decks, podcasts, bibliographies, digital templates, and exemplar grants, DevDH is organized around eleven themes in project development within which are anything from one to three individual topics. So, the section on "Managing Your Project" contains content

built around two separate sessions in a single day taught at DHWI, "Technologies to Manage Your Project" and "Building Your First Work Plan." In most instances the implied progression of topics mirrored the original order in which material was presented in Maryland, but we also took the opportunity to make minor adjustments to the organization of the courses based on informal feedback that we had received from the initial participants. At the time we were developing the site we were also aware that a revised version of the Project Development workshop would be offered during that summer's HILT workshop in Maryland so an important element of the website design was the ability to easily add new content as needed to support this new cohort of participants. This extensibility turned out to be a critically important part of the project as we have been able to add material related to other workshops and presentations that we have given over the years.

A more important decision had to be made about how best to present the material on the website. At the time, both authors were in the midst of preparing to transition to new institutions and were completing major writing projects all while maintaining our regular positions. DevDH was thus considered an unfunded side project for us. As such, there were limitations on what we could achieve given the other demands on our time and resources. During DHWI, we had the foresight to record, with the informed consent of participants, the majority of our lectures and discussions. This allowed us to upload to the DevDH site not just PDF versions of the original slides but potentially audio from and transcripts of the lessons as well. Although the lack of institutional (financial) support for the project meant that we were unable to fund the transcription of this material, we determined that the audio was of a high enough quality to warrant inclusion. This was important to us because the original workshop had quickly transformed from a simple lecture followed by questions from the audience into a vibrant conversation in which participants freely interrupted the presenters for clarification on issues and which often opened up new avenues of discussion that we had not originally anticipated when designing the material. Participants had also indicated that they would like to be able to go back to and refer to these specific conversations when they returned to their own institutions. At the same time, participants (as well as the authors) occasionally discussed sensitive issues related to their own institutional and professional contexts and we were very conscious of the importance of maintaining the spirit of confidentiality in which many of our conversations were conducted. Indeed, there was one lecture ("All About the Problems") that we explicitly and deliberately did not record so that all participants would feel comfortable speaking openly and honestly about the many challenges you face while developing a digital humanities project (Appleford and Guiliano n.d.a). Always erring on the side of being overly aggressive in what was removed, our solution was to carefully go through each recording and edit out any material (ranging in length from references to institutional or project affiliations to several minutes' worth of conversation) that could potentially be problematic.

We never envisioned DevDH as simply a collection of lecture slides. With our initial cohort of participants clearly telling us that they would benefit from having access to sample budget templates and work plans, we saw an opportunity to

make available a repository of this type of material. Initially drawing upon our own archives of project work, we quickly realized that we should reach out to other members of our professional networks and ask their permission to make available grant narratives that we had been a part of so that visitors to the site could study the various components that go into a successful application and see the differences in framing and language that are required for various solicitations' funding opportunities. In this way, we were able to provide to users of the site examples of projects successfully funded by the National Endowment of the Humanities (one of the principal funders of digital humanities work in the United States) as well as the National Science Foundation and the original proposal that supported the DHWI itself. We also included templates for budgets, budget justifications, work plans, data management plans (which had only recently become a requirement at the NEH), intellectual waiver forms, and even digital humanities syllabi (Appleford and Guiliano n.d.b).

DevDH has made an ongoing impact on the field of digital humanities. Since its initial launch, the project website has been visited by over 16,000 unique visitors from 147 countries (the majority of visits have come from the United States, Canada, and the United Kingdom, but significant numbers have come from countries such as Japan, Brazil, France, Mexico, India, and Australia), resulting in 47,000 unique page views of the site. The project has also been cited in a number of peer-reviewed books and articles, while the website itself continues to average over 100 active users per month. And because of the Creative Commons license that we employed on the site, material has been freely adapted for use by individual researchers and institutions to support their own efforts to address the continuing paucity of training in project management within digital humanities (Emory Center for Digital Scholarship n.d.). In many ways, this reach far exceeds our initial vision for the project. But it has also introduced a number of unanticipated issues that we are only now, some seven years after its initial launch, understanding and confronting. The original decision to build DevDH in WordPress was a logical one at the time as it allowed us to focus on content instead of infrastructure and there continue to be benefits to this today. However, the site does not require the resources of a content management system and, given the relatively unchanging nature of our content, a static site built on the principles of minimal computing would result in a more efficient design while still allowing us to upload and change content as needed. A more pressing concern has been the continual maintenance and security updates that a WordPress-based site requires. Although the site has not, to date, been the victim of a security attack, several WordPress updates have broken key functionality and, on two occasions, brought the whole site down for several days. On one other occasion our former hosting service suffered a catastrophic loss, which forced us to restore the entire site from our own backups. With an unfunded project team of two, neither of whom is able to dedicate significant amounts of time to these maintenance issues, this can be a major concern, especially as we are aware that one of the primary ongoing use-cases of DevDH is in the undergraduate and graduate classroom.

More importantly, the material on the website is exclusively available in English and yet we are aware from both Google Analytics and citations that the site is not confined to the Anglophone world but is also increasingly accessed by and useful to non-English speakers, including those in the Global South. An important question for us to address is therefore how we can best serve these constituents. One solution is, like resources such as the Programming Historian (https://programminghistorian.org/), to offer translations of our slides and, potentially, session transcriptions. But neither author is qualified to do this work ourselves and nor do we have the financial support for the project to allow us to partner with colleagues at international institutions to create content that is tailored to different national contexts and languages.

Indeed, this question of funding is one that continues to loom large over DevDH, its continued sustainability, and any similar future efforts to convert an in-person workshop to an ongoing digital resource. DevDH continues to be an unfunded mandate for both authors, one that we remain committed to because of the importance we attach to the topics we address despite the lack of recognition that this project is an intellectual activity in its own right. Project development remains a hugely important issue for faculty, staff, and students interested in digital humanities scholarship and yet there remain surprisingly few opportunities for them to receive training that is tailored to this discipline. This is partly because funders remain largely uninterested in supporting this type of activity and partly because project management is often dismissed as one of those skills that either should come naturally to a researcher or that can be passed off to either a dedicated staff member or an undergraduate student. Despite these ongoing challenges, DevDH remains a model of how an asynchronous digital resource can offer potential utility and audiences that would otherwise be excluded from synchronous workshops. What continues to be an unfunded "passion" project for its authors has become a significant and valuable resource that transcends institutional and geographic boundaries.

Notes

1 See Ray Siemens, Alyssa Arbuckle, and Randa El Khatib, "The Digital Humanities Summer Institute (DHSI): Community Training Toward Open Social Scholarship," Chapter 1 in this volume for an extensive overview of DHSI and its origins.
2 See Sarah Simpkin and Jada Watson, "Building Community and Collaboration through the Digital Humanities Toolbox Series," Chapter 9, in this volume for an alternative framework of success.

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18 Tools in a Workshop

Facilitating DH Learning and Teaching Through a Shared Virtual Desktop Environment

Claus-Michael Schlesinger, Malte Gäckle-Heckelen, and Fabienne Burkard

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While the objectives of digital humanities (DH) workshops vary widely and can range from the transfer of knowledge via teaching and learning specific competences to collaborative work on a task or project, computational tools play an important role. They can be a variety of things: the special implementation of a method, taking the form of a raw script in any programming language; specialized research software; a module installable via repositories available through the internet; or an off-the-shelf program for any DH-related data analysis, text annotation, or other computational practice. A workshop, then, designates the event where people meet to learn and to collaborate on one or more specific tasks or it can designate the place of work. A workshop in that sense implies that tools are already there, like the workshop of a smith or a carpenter, where several saws and hammers would be stored somewhere, ready to use. Preparing a workshop as an event requires an anticipation of certain audience qualities such as experience and level of competence regarding skills and knowledge related to the workshop objectives. Offering a workshop as a place takes these preconditions into account and provides tools and a digital workspace to participants.

In this chapter, we approach the technical means and computational environments often used in workshops through our experience of implementing a virtual desktop environment (VDE) for introductory DH courses and workshops. Reflecting on our practice of teaching and learning with that virtual desktop solution, we discuss how it relates to the intertwined technical and social conditions of learning and teaching DH tools and methods. We focus on the problem of heterogeneous individual setups and competence levels aligned to access to computational tools, skills, and resources, especially for students and audiences with less prior experience with digital workflows. We describe the possibilities of dealing with a workshop's infrastructure necessities to argue that a shared environment can support workshop objectives by abstracting from participants' systems. This motivates collaborative

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communication through developing a common vocabulary over shared references and facilitates orientation through a shared digital working environment that is identical for everyone in the group. We thus outline how dedicated support channels and a structured onboarding process during the orientation phase of a workshop help in solving irritation before frustration arises for both learning and teaching persons. Finally, we argue that communication and orientation in a shared and manageable environment further individual and collaborative empowerment regarding functions and workflows available through the digital working environment.

Tools as Media, Technical, and Social Intertwined

Using a tool is, on a basic level, an interaction with an object in a specific environment. Think about the use of a hammer on a nail. The hammer in this case is a medium which brings about and forms the difference and the connection between subject and object, and subject and environment. The hand works on the object using the hammer. But in every hammering, the hand sustains specific impulses through the hammer, the object hammers back. Media shapes our perception and our action, both at the same time (McLuhan 2006; Plessner 1982; Draude 2017). The networked computer is a medium in that sense, as it shapes our perception, our understanding of objects, and our interactions with our environments. A computer is different from a hammer on so many levels. But as the stone used as a hammer gave its name to the stone age, the networked computer has become the signature medium for our post-digital world. The hammer in the anthropological narrative is the tool that marks a distinctive trait of humanity, the manipulation of the outside world, and thus the emergence of the conscious difference between self and environment (Plessner 1982). Now, the person in that narrative using the hammer already knows how to use it, how to hold it, and what to do with it. If we add a second person who does not have any practical knowledge of the hammer yet, all kinds of communication and experimentation will come into play as soon as person 1 will explain and show person 2 how to use the hammer for a specific purpose in a specific manner. Or, in other words, how to use the hammer applying a specific method on a specific object. Or maybe that second person has different experiences and different goals. And with this second person and the need to explain and explore the use of the tool and medium, all basic elements of a workshop have been named.

On the backdrop of media theory, machines, tools, and infrastructure used in workshops are not just a means to an end, but a means with specific social and epistemological implications. As learners and experts come together, they do so in specific environments and specific intersectional constellations. Workshops in DH encompass a wide range of goals, groups, and concepts. It is our understanding that introductory workshops for humanists new to digital methods were a strong disciplinary DH practice during initial phases of extensive disciplinary growth and still make up a large part of workshops offered at DH conferences, at university libraries, and DH departments (Rapp, Bartsch, and Borek 2016). Our own experience with DH workshops and the role of digital infrastructure for learning and teaching is based on introductory courses, project-oriented learning

with modular workshop elements, and short-term introductory workshops, both as workshop leads and as participants (e.g. during conferences or dedicated DH workshops on university or department level). While our thoughts and concepts might be applicable to workshop settings for experienced digital humanists, our focus is on workshops that are open to participants with heterogeneous disciplinary backgrounds and no prior experience with DH methods and workflows. And while workshops in DH can be run perfectly well without using any digital infrastructure (think of modeling or a preparatory session dealing with archival material before digitization), we focus on workshops where using a computer is part of the concept and workflow. Such use cases can be focused on datasets, methods, software, digital research environments, and the like.

In our experience, participants in workshop groups bring different levels of competence and a variety of setups regarding their personal workspaces and wider digital infrastructure. In workshop settings where participants use their own devices (Bring Your Own Device, BYOD) all kinds of computer systems will be brought to the workshop tables. And while a multi-system ecology can lead to interesting insights, it often leads to problems when it comes to installing software or software modules with specific requirements, configuring new software according to hardware requirements or downloading datasets from a remote location using version control. In workshop settings, solving such problems can take time – if they can be solved at all. Configuration takes time and sometimes intricate knowledge of a system, both of which might not be readily available in time-critical workshop settings.

In introductory workshops, participants have different levels of system administration experience. Teachers are not necessarily competent system administrators either when it comes to systems other than their own (or even their own). Additionally, helping participants configure their systems might lead to privacy concerns, as desktops and file systems on computers might contain files from participants' private lives. Different levels of experience and competence regarding digital workflows and basic system administration as a preliminary for specific workshop software setups need to be taken into account as systemic effects. Students have different levels of knowledge and experience regarding digital workflows, as some enjoyed computer science education in school, others did not. Whether a school offers computer science courses or not is not random but related to class issues, as the availability of computer science classes in schools has been shown to be related to higher income levels in the adjoining neighborhood (Rosenstein, Raghu, and Porter 2020; citing Margolis 2008). Pertaining to this educational divide is the larger question of access to computing resources on an individual and institutional level. For the German school system, Rohde and Wrase (2022) show that access to basic digital infrastructure correlates with school type, meaning schools offering degrees required by colleges and universities offer better access to digital infrastructure than schools that do not offer such degrees. As this difference between school types in Germany is related to class issues, so is the digital divide. The problem persists in higher education, as access to digital educational resources depends on access to viable devices, which most often have to be provided by students themselves (e.g. when working from home or working mobile). On an

institutional level, advanced DH methods (e.g. big data analytics and machine learning applications) require high performance computer servers which might not be readily available, especially at smaller departments or universities.

Also, gender is an important determinant for students' subject choices regarding STEM education (Aeschlimann, Herzog, and Makarova 2015). Only one fifth of computer science students at German universities in 2020/21 were women (Statistisches Bundesamt 2021). Not considering different levels of experience with digital workflows thus risks to reproduce dynamics of marginalization described for STEM and computer science in DH contexts (for a discussion of digital infrastructure in the humanities and social sciences (HSS) in South Africa, see Van der Walt, Steyn, Trusler, and Van Zaanen in this volume). Digital infrastructure for workshop settings is related to this basic question of inclusion that needs to be addressed through workshop infrastructure design which facilitates inclusive access for participants.

Digital Infrastructure for Workshop Participants

How is digital infrastructure provided to workshop participants in regular and documented settings? We see four different strategies being applied in DH workshops: the use of computer pools provided by institutions like universities (Burger 2007; Powell and Kong 2017), Bring Your Own Device (BYOD), virtual research environments (VREs) (Bellamy 2012), and virtual desktop environments (VDEs) (Schlesinger, Gäckle-Heckelen, and Burkard Forthcoming; Klinke 2018; Nunn 2018; Gumber 2015). While BYOD means that participants use their own computer, installing and configuring any software necessary for attending the workshop beforehand or as part of the workshop program, computer pool, VRE and VDE approaches move potential problems regarding installation and configuration partly or completely away from participants' systems to the pool or to the server side and provide a standardized user interface with a limited set of software. Any issues regarding system consistency or software requirements for any research software package or software modules can be addressed beforehand. Participants can be disburdened from preparatory installation and configuration tasks that might turn out to be complex, time-consuming, and potentially unsolvable for participants depending on their system and on their system administration experience. Moving away installation and configuration from participants' machines also addresses privacy concerns, as personal files are (mostly) not accessible for technical support. However, while working with computer pools means that participants do not use their own device, VREs and VDEs are often coupled with a BYOD element, insofar as participants use their own devices to access the virtual environment via browser or client software. For settings where privacy concerns need to be addressed with high priority, working with VREs and VDEs through any computer, e.g. in a computer pool, is a viable solution. With a BYOD component in VDE approaches, installation and configuration problems can emerge when participants install the client software. But as with specific client software the scope for installation and configuration workflows is limited and to some extent predictable, problems can be addressed through step-by-step tutorials and personal support (Schlesinger, Gäckle-Heckelen, and Burkard Forthcoming).

The use of VREs in DH workshops is part of a larger development regarding the provision of data and methods to researchers. Historically, this development leads from the simple provision of datasets to the provision of datasets with added functions and services for data analysis and the provision of fully implemented methods and workflows, either through standalone software or web applications. Bellamy (2012) names the Perseus project as an example for a VRE that combines a dataset with specific methods, in this case specific search methods and the connection to text mining tools. As Bellamy notes, "[N]ew-generation digital humanities projects are not just about hastily making data available through databases or digital libraries, but are about creating scholarly, interpretive frameworks to make sense of it." Additionally, web applications like Voyant Tools are not bound to one repository but provide toolsets and automated workflows from text data ingest to printable visualizations open for upload and processing of user-defined corpora (Sinclair and Rockwell 2016).

While VREs provide fixed implementations of specific services, VDEs are based on the concept of a desktop computer. This allows for the installation of software packages and software modules for a wide range of use cases, from standard desktop applications to specialized research software. A VDE can thus be described as a platform solution that allows one to deliberately design workspaces, provide datasets, and install software using standard system administration tools of the underlying operating system. VDEs can be used in a wide range of use cases, from small scale project environments to large scale installations in universities with thousands of users (Mills 2014; Gumber 2015). This versatility makes VDEs a candidate for workshop-oriented digital infrastructure, especially in cases where workshops are offered repeatedly, e.g. by centralized training initiatives in university libraries or DH departments.

General workshop goals include building confidence, competence, and collaboration in the group and within individuals in relation to the workshop objectives. Frustration and overload can be detrimental to achieving these goals (see Phillips, Bordelon, and Terry Kapral in this volume), even if the source of frustration has nothing to do with workshop objectives or workshop content. Use of digital infrastructure as a key component can be a source of frustration (e.g. in BYOD settings where participants need to install specific software and run into difficulties). Even if additional staff is available to support individual participants, concentrating on solving a configuration problem and following the workshop program at the same time can put participants under stress. As in such settings problems arise on a regular basis and are connected to deeper power structures, we consider this as structural conditions of workshop preparation and realization.

Reflecting our own practice and experiences in DH education, two strategies for dealing with these conditions can be observed, an expert approach and a baseline approach. The expert approach puts the load of setting up the workspace with necessary software installation and configuration on participants. Preparatory notes consist of instructions about what software will be used and where to download it, often using a BYOD approach. This is a viable approach under the condition

that participants have the competence, confidence, and knowledge to prepare their systems according to needs and to solve any problems that might arise by themselves. Participants who control their systems well or even had the workshop tools already installed, have an advantage over those who struggle with preparations, as problem solving takes time and feeds into frustration. Expert approaches expect participants to be already digital professionals, system administration skills are taken for granted, control of a computer system is thought of being either given abilities, talent, or best effort in a competitive environment. Thus, potentially difficult preconditions must be met by participants before more high level or more complex skills can be learned and practiced in an assisted workshop environment. While this approach is fitting for expert workshops, it bears the risk of reproducing inequalities in introductory settings.

In a baseline approach, on the other hand, access to a system configuration level where workshop tools can be applied is made as easy as possible, and workflows pertaining to workshop objectives will be explained and practiced in a way that is accessible for anyone in the group. Using a VDE, installation and configuration issues can be moved to the server side. A graphical user interface with recognizable standard design elements like desktop icons or a start menu can help when introducing participants to basic functions of the workspace (e.g. navigation of files and folders, starting the software which will be used during the workshop, or loading data provided through a shared folder). As scientific methods and computational tools are applied as part of larger workflows, explaining and practicing the necessary steps to start, stop, and evaluate a computational process can provide a starting point for further experimentation. In a well-prepared environment, participants can work with high level functions like specific research software or research-oriented software without having to deal with configuration problems first. This facilitates access for participants with less prior experience, following an inclusive approach.

A shared environment can support wider workshop objectives regarding competence, confidence, and collaboration in relation to workshop contents. VDEs and VREs allow an abstraction of participants' systems which removes the necessity for support of unfamiliar systems. Instead, a shared workspace that is identical for everyone in the group facilitates support through workshop leads and staff as well as mutual support between participants. While necessary steps to load a dataset into a program may vary with different operating systems, in a shared identical workspace they are completely reproducible. This allows for workshop modules where the group follows a step-by-step introduction to a workflow, as all steps from starting the program to loading a dataset to exporting any results are identical for everyone. Additionally, a shared environment can motivate communication and discussion in the group through common references not only regarding results when using specific software, but also workflows attached to it. It is easier to show where to look for a dataset provided for the workshop via a shared folder or for the start button for a specific software with an identical folder structure and user interface.

A system is only as good as its support system. This holds true for a VDE approach, especially if it involves a client software for accessing the virtual desktop.

This means that installation and configuration problems are not completely off the table. But being limited to one specific software package, debugging and support requests become more predictable. In a VDE + BYOD setting, debugging local configuration problems will in most cases be limited to the VDE client software on participants' systems, for which system requirements and configuration options can be well known and well documented. Thus, problems can be mitigated through detailed tutorials and direct support. While support is a necessary element for any digital infrastructure and any usage at any stage, it is of special importance for onboarding participants during the orientation phase of a course or workshop. During this phase, support is tasked with solving installation and configuration problems and, furthermore, any irritation that might come up while participants accustom themselves to the system. With a shared environment and reproducible actions, support will be able to solve problems with competence and confidence and explain any hiccups that might arise. This allows participants to value problem solving as a learning experience and position themselves as serious users towards the virtual environment. Facilitating mutual support in the group through identical interfaces and reproducible workflows is equally important for achieving workshop objectives. Communication and exchange about orientation in a shared and manageable environment further individual and collective empowerment in relation to methods, datasets, research questions, tools, and, last not least, the working environment itself. This leads us back to the hammer as medium and the wood and nail that will resonate through the hammer and the hand. It is this resonance that co-constructs subjectivity, research objects, and research perspectives.

VDE Experiences

Starting from the needs in our own teaching and learning practice in introductory DH courses and workshops, we developed a virtual desktop environment (VDE) for DH use cases in small to medium groups, called DH2go. The VDE contains basic development tools and standard libraries for the programming languages R and Python, furthermore applications for network analytics and visualization (Gephi), geo information system software (QGIS), and stylometry (stylo).[1] The project was developed in an iterative fashion and during several iterations the goal became to develop an accessible, sustainable, and reusable DH teaching and learning environment that can be run locally or as a service. The system has been used in introductory DH university courses at the University of Stuttgart, research-oriented project seminars, and workshops. VDE approaches have been applied and are being applied in a range of projects, either with a focus on specific software and limited use cases (Powell and Kong 2017) or for larger installations providing many tools to cater to different use cases (Nunn 2018; Klinke 2018; Schlesinger, Gäckle-Heckelen, and Burkard Forthcoming). As privacy concerns regarding student data were a high priority, running the service on campus was mandatory.

The system is based on a Debian Linux operating system with a remote desktop server (VDE) making the system available to client software installed on users' computers (BYOD). After connecting to the server, the service works like a second

(remote) desktop. The onboarding process consists of preliminary bureaucracy, personal support provided by a graduate student and an administrator, and orientation in the course or workshop. We found that providing continuous support throughout any event is a key element for attaining inclusion goals, as solving technical problems becomes something doable and, in this perspective, can even be a positive learning experience. Equally important has been that through the common reference, compared to the variety of systems in a BYOD only approach, mutual support has improved. It is a positive side effect of mutual support that students and other participants tend to adopt the system more quickly and even keep working with it in subsequent course and project settings.

During one major iteration, we introduced course folders and exchange folders. The course folder can be used by workshop leads or lecturers to provide course material (e.g. datasets, worksheets, or any other data that can be put into a desktop folder). Participants can access the material and, if need be, copy the data to their user space. As each user only has access to their own workspace, the exchange folder serves as a hub for the group where all participants can drop any data they wish to share with the group. Both folders were quickly adopted by groups and used for distributing and exchanging data and analytics results in introductory and research-oriented courses.

We see three key elements for working with a VDE in DH courses and workshops. 1) Policy is needed to describe the scope and stakeholders to inform decisions about default configuration. If the system will be used for more than one occasion, user and data management procedures need to be defined. 2) Support has turned out to be a key element for students and for faculty. Support should be at best highly available, as solving any problems during an event can be time critical. Onboarding and orientation phases rely on dedicated support, especially during live workshop sessions. 3) Developing and running digital infrastructure takes time. If researchers and lecturers run the service themselves, system administration and support can take a large chunk out of other research activities. We argue that designing and running digital infrastructure for learning and research has social and epistemological implications and consequences. It should be considered as research or related activity in a disciplinary context, which is currently not the case, as digital infrastructure is understood to be part of research data management or IT services. Taking into account that for running a VDE service, policy and support need to be constructed, technical solutions implemented, and time be freed, the approach is most feasible for larger events, for recurring events, or for institutions that offer a VDE as a service. If such a service can be offered and user management as well as support can be outsourced to an institutional level or a workgroup, the approach becomes feasible also for smaller workshops. Our perspective for DH2go is to streamline and automate the setup procedure so that running a VDE becomes feasible for workshops in any size and with any duration.

Workshops are a focused and short-term form of learning, which poses questions regarding sustainable outcomes. What is the takeaway of a workshop and how can participants come back to what they learned and practiced in the workshop? This

is not only a question of workshop design. Digital infrastructure for workshops needs to offer the possibility to download meaningful outcomes and to either reuse methods learned during the workshop or recreate the conditions under which these methods can be reused locally or remotely. Regarding VDEs, the question of sustainability might count as an argument for providing access to participants also after the workshop. However, as workshop objectives are not limited to the usage of the VDE system, providing ways to keep workshop outcomes without continued access to the VDE system is an acceptable solution. With respect to the global climate crisis, sustainability is also related to the ecological footprint of our actions and, in this case, our digital infrastructure. A server used for a VDE needs power. While smooth operation is key for a productive learning experience, provisioning computing power and storage can consider group size and system requirements of the tools to be used on the platform. On the other hand, when taking into account the larger context of a workshop and newly developed habits of telecommunication and videoconferencing, a server-based environment might fit well into concepts of flexible learning. The hammer resonates to subjectivity and forms the relation to the object and to other beings. It is perception and action in one single movement. It leaves a trace in the world. So does pressing the power on button of a VDE.

Tools in a workshop should thus be made to last. And not only the tools, but the workshop itself, in the double sense of the place where tools are kept, and the work takes place and the temporary event that is the work of learning and building communities of practice. We argue, in this context, that accommodating learners with heterogeneous systems and different backgrounds in an accessible digital working and learning environment helps building sustainable workshop practices and learning experiences. Abstraction from participants' systems through a VDE or VRE can help to establish common references in the group, deliver reproducible workflows, facilitate individual and mutual support, and thus facilitate empowerment, critical discussion, and interaction with the material and methods at hand.

Note

1 See the project website for a detailed list of available applications: https://esthet1cs.net/dh2go, archived site at time of writing: https://web.archive.org/web/20230106195854/https://dh2go.ilw.uni-stuttgart.de/index_en.html.

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