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Assessment at the University of Washington Libraries

As academic libraries struggle to understand their role in supporting digital scholarship, there is a clear desire to share needs assessment work broadly so that we can learn from each other. A 2018 discussion on the ACRL Digital Scholarship Section Listserv revealed relatively few such assessments have been performed or shared publicly.[1] Questions also remain across the profession on how to assess digital scholarship work given its nexus between traditional research and emerging technology.

At the University of Washington Libraries, where I work as the Libraries' first full-time digital scholarship librarian, we, too, are working to understand our role in a changing culture of digital scholarship. Fortunately, as an institution recognized nationally for its strong assessment program, an assessment of digital scholarship needs across campus was a natural starting point for determining our digital scholarship strategy. Our work has taken a series of forms: faculty and graduate student interviews/focus groups, Triennial Survey data, digital pedagogy assessment work, evaluation of questions and needs surfaced during two years of weekly Digital Scholarship Project Help Office Hours and teaching and research case studies. By sharing the details of these assessments—their goals and methods, collective findings, and some

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of the "next steps" taken following their completion—I hope to contribute to this emerging area of research and offer guidance to those pursuing their own digital scholarship needs assessment work.

BACKGROUND: DIGITAL SCHOLARSHIP AT THE UNIVERSITY OF WASHINGTON

Although the University of Washington (UW) has a long and established history of digital humanities work, the UW Libraries' formal Digital Scholarship Program remains in its infancy.[2] The role of digital scholarship librarian was created in January of 2016 as a 0.5 full-time equivalent (FTE) position designed to serve UW students, faculty, and staff in a concierge role, connecting those wishing to complete digital projects with people and resources to help realize their project objectives. The position has since evolved into a role overseeing digital scholarship strategy for the UW Libraries with a mandate to "conduct regular environmental scans of the campus in collaboration with subject librarians and other campus stakeholders to identify current and emerging digital scholarship projects, and recommend strategies to support the needs."[3] As a result, the position was made a 1.0 FTE position in July 2017 and was reorganized under the newly formed Scholarly Communication and Publishing department. Although the positioning of this role fits well in a department focused on emerging forms of scholarship, sharing research for the public good, and outreach, being the sole librarian responsible for not only carrying out digital scholarship work on a practical level but also advocating and visioning for the future of this work can be daunting! The success of our needs assessment work relied on careful collaboration with colleagues across the Libraries, support of UW iSchool students, and volunteers.[4]

As we will see, the five types of needs assessments ultimately conducted by the UW Libraries in relation to digital scholarship were largely spurred or shaped by the creation of this digital scholarship librarian position and contributed to the part of the ramp-up that resulted in the position's expansion and the UW Libraries' 2014–2017 Strategic Plan, which recognized providing expertise and support for digital scholarship as an area of focus. We will begin our needs assessment discussion with interviews and focus groups.

Focus Groups and Interviews

One of the earliest digital scholarship program goals was to discover what digital scholarship means to those working in the different disciplines.[5] It occurred to us, for example, that participants in certain fields might not see themselves or their work reflected in the term "digital scholarship," which could put the program at an initial marketing disadvantage. The Libraries

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was also curious to hear from researchers about the different types of digital scholarship work being done across campus—and where participants could use help in completing their work. To this end, the Libraries organized a series of digital scholarship focus groups, with UW faculty and graduate students.

Description

During the spring quarter of 2016, the Libraries, with support from two iSchool Capstone students, held focus groups with fourteen faculty and six graduate students from the humanities, social sciences, and sciences. These focus groups were organized by discipline and divided between faculty and graduate students. In cases where participants were unable to attend the designated time for the focus group, I arranged individual interviews. In order to solicit participants, subject librarians sent out email invitations to their departments, and I sent an invitation to researchers affiliated with the UW Walter Chapin Simpson Center for the Humanities. Once participants responded, the organizers sent them questions in advance of their scheduled focus groups/interviews (see appendix E), each of which ran for an hour and included light snacks and drinks. To help make note taking easier, two Libraries staff were present during each interview, one to lead the discussion and one to take notes.

Findings

1. The term "digital scholarship" doesn't resonate

It became quickly apparent when talking with participants that digital scholarship as a term is meaningless to those outside of a library context. Those in the sciences, for instance, heard the term digital scholarship and immediately jumped into discussions of electronic library article databases that support research. When asked why they equated digital scholarship with library article research, one participant responded, "Everything is digital. The term is meaningless, so when you take away the digital, you're left with scholarship. To me, scholarship means research through traditional library tools." In the humanities, those working with digital tools and methods or doing what would be considered digital scholarship work in a general context did not see themselves as digital scholars. On the flip side, humanists who have been working in the area of digital humanities for several years also did not see themselves as digital humanists or digital scholars; one responded, "This is humanities scholarship. We've moved past the need to include digital in the definition."

Digital scholarship's lack of appeal as a description for a suite of services is confirmed in the literature. Although planning support for digital scholarship work, the University of Houston's Digital Scholarship Team notes, "Identifying a term that both describes digital scholarship services and resonates

with students, faculty, and staff is an imperative step in this phase."[6] A 2014 OCLC Report confirms the statement of our humanities and science participants: "No matter which approaches to supporting the digital humanities you opt to take, keep in mind that what we call 'The Digital Humanities' today will soon be considered 'The Humanities.' Supporting DH scholarship is not much different than supporting digital scholarship in any discipline. Increasingly, digital scholarship is simply scholarship."[7]

It is clear that if libraries want to establish successful digital scholarship services or centers on campus, we must give thought and pay careful attention to how researchers describe their work in order for them to see themselves in the library services and spaces provided. We continued to explore the question of "what do people call this work" as our assessment project moved forward.

2. Technical skills are difficult to acquire

Across the board, all disciplines represented in the focus groups voiced frustrations in the lack of clear opportunities to systematically learn new technical skills. Desired skills and tools ranged from getting help with web design to learning GitHub to learning programming languages like Python or C++, to learning R. Those who wished to learn programming languages expressed frustration that they could not take computer science courses without being enrolled in the School of Computer Science and Engineering. Faculty and students alike also expressed a strong desire to create a web presence that effectively showcases their work but lacked the skills or expertise to do so. This mirrors Jennifer Vinopal and Monica McCormick's findings, as expressed in their 2013 work on supporting digital scholarship in research libraries. They write, "Scholars want help developing, using, and maintaining Web sites for storing and presenting their digital research content."[8]

UW student participants also described taking courses that required them to use technical tools without formal training, leaving them scrambling to get help from peers and online sites like Stack Overflow to fill in knowledge gaps. On the flip side, instructors who participated in the focus groups complained that UW's quarter system limited their availability to teach the use of tools in addition to course content. Consequently, when forced to choose where to focus class time, faculty often chose to focus on content over tool instruction.

3. Multidisciplinary collaborations are challenging

Faculty and students alike were excited by the possibility of cross-disciplinary collaborations on projects but felt they did not have a clear path to identifying and establishing such collaborations, which they considered an overwhelming barrier to performing cross-disciplinary work. For example, one faculty member in the sciences hoped to identify a philosophy researcher who could collaborate on a project examining race and gender in machine learning algorithms but had no idea who in other departments might be interested in this

work. With a full research and teaching load, the faculty member had little time to explore potential collaborators. Another researcher was fortunate enough to identify an international collaborator but institutional restrictions on resource sharing (e.g., you must be affiliated with the UW to access and contribute materials to a UW server) left the duo without a sound infrastructure to support their work. As research collaborations expand beyond institutional silos to global collaborations, more efforts will need to be taken to create secure, safe, and accessible infrastructures for researchers to perform and share their work.

The challenges of building communities of practice are one of the major barriers to furthering a culture of digital scholarship. The 2017 Educause Center for Analysis and Research (ECAR) report, *Building Capacity for Digital Humanities,* reflects this point even as it envisions a strong future for cross-disciplinary collaborations: "Matching a scholar's research with corresponding methods from other disciplines and finding like-minded and open-minded collaborators is a common dilemma because it is rare to find somebody with all the skills required."[9] It is our aspiration that the UW Libraries, as a discipline-gnostic space, can help foster community around digital scholarship and, in turn, help foster desired cross-disciplinary connections.

4. Opportunities to showcase work are needed

Study participants expressed frustration that there was not a central place on campus to showcase digital scholarship work happening across the UW. This topic came up both from the perspective of wanting a place or opportunity to share the work that researchers had done and as an opportunity to get new and fresh ideas from other researchers. A 2014 University of Pittsburgh needs assessment of digital scholarship reported a similar finding: "There is a need for centralized spaces available on campus where faculty and students can exhibit the products of their digital scholarship."[10]

5. The standing of digital scholarship work in the professional community

Faculty and graduate students dedicated to doing digital scholarship work are often forced to do double the work based on traditional promotion and tenure processes or thesis and dissertation requirements. Junior faculty participants in particular expressed that if they dared to take on a digital project, they needed to continue to work just as hard on producing a traditional monograph or publishing in academic journals to meet tenure and promotion guidelines for their departments. A 2010 report by Diane Harley et al. that includes interviews with faculty succinctly captures some of the same faculty concerns about embracing new forms of scholarship, especially early in one's career: "The fact remains, however, that: (1) new forms of scholarship must be perceived as having undergone rigorous peer review, (2) few untenured scholars are presenting such publications as part of their tenure packages, and

(3) the mechanisms for evaluating new genres (e.g., nonlinear narratives and multimedia publications) may be prohibitive for reviewers in terms of time and inclination.[11]

Although numerous groups are experimenting with peer review of digital projects, until promotion and tenure systems become more accepting of new methods of scholarly publishing, untenured faculty will remain skeptical about digital scholarship, will need to go above and beyond to perform both types of publishing, or will wait until after tenure to engage in digital scholarship work.

Graduate students were also in a difficult position because many faculty positions request digital scholarship skills in job postings, yet traditional thesis and dissertation requirements are still print-centric. As a result, graduate students, who wish to succeed on the future job market, found themselves both writing a traditional thesis or dissertation alongside creating digital components of the thesis or dissertation that will not count toward graduation requirements at UW. Although there are trends shifting away from the traditional print thesis and dissertations, these have yet to be fully recognized by most UW departments and the UW Graduate School.[12]

6. The UW Libraries remains a natural home for digital scholarship

The UW Libraries was mentioned time and time again as a natural home for digital scholarship services. Participants spoke favorably about the UW Libraries as a discipline-neutral space with the ability to serve the needs of all disciplines, and to provide equipment and services that could be used by anyone from across the University.[13] The UW Libraries was also suggested by participants as a natural place for cross-disciplinary connections to occur. This finding was encouraging as we moved forward in assessing digital scholarship needs.

Limitations

Although the cross-disciplinary information provided by the focus group assessment was useful, the usefulness of the results may be limited by the fact that only four of the participants were from the social sciences (three faculty and one graduate student). Additionally, questions posed to those in the science/social sciences focus groups differed from those asked in the humanities groups, as a sample run of the questions with the former group revealed a need for additional context, which was corrected in the latter groups. In the future, the deployment of broader and more open-ended questions might yield a results set that maps more equally across the disciplines.

Triennial Survey

Although focus groups are extremely useful for gathering deep information about the faculty and graduate students on the subject of digital scholarship, they obviously lack the broad perspective of certain large-scale assessments like campus-wide surveys, which the UW Libraries is also experienced at deploying. As the digital scholarship librarian, I recognized an opportunity to address the large-scale view of digital scholarship across the university in the UW Libraries' Triennial Survey, which we administer to faculty, graduate students, and a sample of undergraduate students on all three UW campuses every three years. By incorporating questions related to digital scholarship into the 2016 version of the survey, I hoped to gain a better understanding of (1) what types of digital tools and methods were being used by faculty and graduate students across campus, and (2) which departments were doing this work.

Description

The UW Libraries' Triennial Survey is sent out by email to faculty, graduate students, and a sample of undergraduate students on all three campuses every three years since 2004.[14] Questions in the survey are far-ranging, and cover everything from a user's experience with UW Libraries' services to the use of library spaces. In spring 2016, I worked with the UW Libraries' Assessment Team to add a specific question to the survey pertaining to digital scholarship:

> Does your research and teaching involve any of the following digital activities/tools? Please check all that apply.
>
> - ☐ My work does not involve any of these
> - ☐ Text/data mining
> - ☐ Data visualization (using tools such as Tableau)
> - ☐ Web authoring or publishing (using tools such as Scalar or Omeka)
> - ☐ Digital mapping/digital map making (using tools such as ArcGIS, Neatline, Google My Maps)
> - ☐ Digital annotation (using tools such as hypothes.is and Lacuna)
> - ☐ Other (please specify)

All told, 1,527 faculty across all three campuses received the survey, with a 35 percent response rate, and 2,780 Seattle campus graduate and professional students received the survey, yielding a 22 percent response rate.[15]

Findings

The 2016 survey results indicated that 40 percent of UW faculty and 40 percent of graduate students said their work involved at least one of the listed digital activities/tools.[16] The students and faculty of the College of the Environment and the College of Built Environments ranked the highest for UW schools and colleges for using one or more digital activity or tool. Text/data mining and data visualization ranked the highest for faculty at 24 percent and 23 percent, respectively. Graduate students ranked data visualization and text/data mining the highest at 26 percent and 24 percent. These results varied slightly from college to college. For example, the College of the Environment ranked use of digital mapping/digital map-making tools at a higher rate. These results have been incredibly useful in identifying which schools and colleges to target as we continue to plan for digital scholarship services and provide a starting point to plan for larger scale digital scholarship support.

Limitations

Based on the comments received in the survey, we noted that a few respondents were slightly confused by some of the digital scholarship question multiple-choice options. Although we gave examples of specific tools that could relate to a digital scholarship activity, for example "data visualization (using tools such as Tableau)," it was clear that some respondents answered "no" to question options when they engaged in the underlying activity but used a different tool than the one(s) mentioned in the option parenthetically. This confusion may have impacted some of the survey results and will be addressed in future iterations of the survey. Likewise, given the high number of respondents who indicated they used text/data mining techniques, in the 2019 survey this activity will be separated into two response options, one for text mining and one for data mining. In doing so, I hope to reveal a more accurate representation of the digital scholarship work happening on campus, and to offer more guidance in developing targeted services. With limited resources to pilot new services, this information will help us decide whether to experiment with text mining or data mining first. It will further conversations with potential campus partners who may be interested to work with us in piloting future services.

Digital Scholarship Project Help Office Hours

As many public services liaisons can attest, consultations with researchers are valuable opportunities for better understanding the needs and activities of a given academic population. In order to learn more about the UW digital scholarship community, and to help encourage scholars engaged in digital scholarship projects, I began collaborating in spring 2016 with staff in

UW's centralized Learning Technologies unit to offer Digital Scholarship Project Help Office Hours. From the very start, these hours were another formal method for the Libraries to gather data related to digital scholarship needs, including which UW populations require assistance with digital projects (e.g., departments, as well as degree classes), what types of projects researchers are working on, and what types of difficulties those researchers are running into.

Description

Digital Scholarship Project Help Office Hours are held weekly for an hour and a half in the UW Libraries' Research Commons Consultation Space, a small room with semi-private cubicles that is located in one of the Libraries' main campus buildings. Office Hours are co-staffed by me, the digital scholarship librarian, and Beth Lytle, an information technologist from UW Learning Technologies.[17] Together, the two of us help Office Hours participants get started with digital projects, or to complete particular aspects of projects on which they are stuck. For each drop-in, we record information about which department the participant is from, their UW status (e.g., faculty, graduate student, undergraduate student), and where they are stuck (e.g., scoping a project, looking for storage and hosting for materials).

Findings

1. Who attends office hours?

In the first year of Office Hours, attendees included mainly UW faculty members and a few graduate students. More undergraduates began using the service in year two, thanks to faculty encouragement. Office Hours are the busiest during the summer months when certain UW faculty and graduate students begin work on their Walter Chapin Simpson Center Digital Humanities Summer Fellowships.[18] There has also been strong diversity in the departmental affiliations of Office Hours attendees. Some of the departments represented have included Architecture; Comparative History of Ideas; Comparative Literature and Cinema Studies; English, French and Italian Studies; Gender, Women, and Sexuality Studies; Geography; History; and Music.

2. What work is happening?

Our findings suggest that UW researchers are engaged in a wide range of digital scholarship projects, from creating Omeka sites to interest in story mapping projects to data visualization to text encoding and stylometry. Additionally, many faculty members have come to Office Hours with questions about effectively incorporating digital technology into their courses—which suggests an opportunity for the Libraries or Learning Technologies to step into the pedagogical components of digital scholarship.

3. Where do participants get stuck?

Another finding was that many Office Hours participants have trouble knowing how to start a digital project. For instance, both Beth and I spend significant time helping participants scope their research questions into more manageable projects.[19] Help is also frequently requested from attendees to decide which digital tool will best represent a participants' work, (e.g., from offering multilingual access to digitized texts and images to sharing the lived experience of an African American family member's journey from the southern United States to the Pacific Northwest during the 1950s).

Those wishing to use Omeka and related plug-ins come to Office Hours for advice on how to install Omeka on the UW server. Other questions range from locating software on campus to completing text encoding projects to creating content in Wikipedia to assistance with metadata construction.

However, the number one question we receive during Office Hours centers around where to host and store digital projects for free or at low cost. This finding mirrors a 2016 Jisc report finding, which states: "From the researchers' point of view, the infrastructure, and the ways in which different systems interoperate, should be invisible in much the same way that most people rarely give a second thought to how power, water and telephony services are provided to the home or office."[20]

The issue of limited storage space is particularly problematic for instructors who teach digital tools or methods as part of a class, and thus fill their allotted departmental server space quickly with student projects. Instructors often express their frustration at having to pay additional storage fees when they are trying to teach students practical and marketable digital skills. For those creating research projects, it is clear that more work needs to be done to help researchers develop a better understanding of the long-term costs of not only storage and hosting of projects but also the costs to update software and migrate content to new platforms as older platforms lose support over time alongside the long-term costs of digital preservation. We have begun to incorporate conversations about planning for costs, planning for metadata integration into projects, and long-term preservation into library workshops focused on digital project creation but still have much work ahead in expanding knowledge in this new realm of digital publishing.

Limitations

The information gathered during Digital Scholarship Project Help Office Hours has provided me personally and the UW Libraries in general with a good start for understanding the range of needs and barriers the campus community faces when completing digital projects. That said, there is still likely a set of needs yet to be discovered, such as those faced by researchers who cannot currently attend scheduled Office Hours, or who lack the time to make a consultation appointment.

Omeka Case Studies

With a variety of questions surfacing during Office Hours surrounding the digital scholarship tool Omeka, we focused the next portion of our assessment work on one-on-one interviews, walking step-by-step through the experience using Omeka from both the research and the teaching perspectives. Our goals for this assessment included developing a better understanding of objectives for digital work in teaching and research, what steps were taken to complete the work, and what pain points surfaced in completing digital projects from the teaching and research perspective.

Description

I interviewed two faculty instructors regarding their experiences integrating Omeka into their courses and one faculty member who used Omeka to create a hybrid publication published with a University Press was interviewed. Our interviews lasted an hour and notes from the interview were shared with the instructors to confirm accuracy. All three faculty members represented different departments within the UW College of Arts and Sciences and did not know details of one another's work prior to the case study interviews.

Findings

1. Teaching case studies

Though the teaching examples represented two different departments, similar themes emerged. For example, instructor 1 used Omeka with lower division undergraduate course and instructor 2 used Omeka with an upper division undergraduate course. Both instructors wished to offer students an opportunity to learn and incorporate skills beyond those of simply writing a term paper. As Omeka holds a strong focus on metadata integration, the instructors used this opportunity to teach critical thinking skills by developing metadata for objects they collected and integrated into their assignments. Both instructors emphasized the importance of describing items and the ramifications of how they are found (or not found) online as result, developing multiple keywords to describe objects, and asking students to think more critically about metadata attached to items they search for in the future as they interact with materials on the web. Surprisingly, when asked if they had invited a librarian to speak with their classes on the topic of metadata construction, the instructors expressed that they had not realized librarians would talk to classes about this topic. Library expertise did not immediately come to mind when thinking of metadata construction. As a result of these conversations, I look forward to working more closely with our metadata librarian and the Libraries' larger Teaching and Learning Group to think about ways to incorporate and scale metadata conversations directly into classroom settings. These

instructors represent a growing shift in digital literacy education. As the 2017 Horizon Report on Digital Literacy notes, "most of the digital literacy training in higher education is directed toward consumption and evaluation of information and media, and not on the creation of products using digital resources. Additionally, postgraduates expressed that they had minimal or no training in the use of digital artifacts to communicate ideas or stories (51.1%), and they indicated they were given minimal guidance around the laws, rights and responsibilities, and security for using technology and media (58.1%). These responses mirror the limited experiences undergraduates have to practice with these digital tools."[21]

Libraries have an opportunity to partner with faculty and share expertise in metadata construction, rights training, preservation, and new modes to communicate research more broadly. As we move from a model of students as consumers of information to creators of information sources, we need to adapt library instructional methods to meet these needs. This will involve more communication and collaboration among public services staff, technical services staff, and IT staff to create a successful transition. The role of digital scholarship librarian seems like a perfect bridge to begin these conversations based on the public-facing work performed by digital scholarship librarians and the need for coordination with technical services and IT colleagues to move digital scholarship projects from idea to reality.

These Omeka case studies also helped the UW Libraries to identify a broader need for guidance on integrating technology into course assignments. Libraries have traditionally offered assignment design services to faculty, assisting them with the integration of research skills into course assignments based on course goals. Faculty would like to see a similar service offered that focuses on integrating digital tools and methods into course assignments. Instructor 1 described a willingness to learn digital tools and methods but with heavy teaching loads, research agendas, and the compact nature of the quarter system, limited time was left to investigate which tools would be most appropriate for classroom purposes. This problem is compounded because new tools are coming out all the time, leaving instructor 1 feeling overwhelmed when trying to identify which tools to focus on when teaching. Both instructors expressed a strong desire for a single point to find for support in identifying the best tools and gain assistance with tool setup. This is a current gap on the UW campus—UW librarians are still focused on creating traditional research assignments, UW's Center for Teaching and Learning does not yet offer support in this area, and UW Learning Technologies only offers support for a specific set of University-supported tools. As a result, both instructors used teaching assistants (TAs) to run a broad investigation of available digital tools and used TAs to help set up Omeka on the UW server. One can imagine the number of resources wasted if each department is hiring TAs to duplicate this work time and time again. Unfortunately, UW is not unique in this

situation. As ECAR reports, "In the absence of institutional support, grassroots initiatives tend to be siloed. Multiple individuals or groups in different departments or divisions may work with the assumption that they are the only people doing digital humanities on campus because they have never seen other DH work in their local context."[22]

The case studies highlighted limitations in UW's infrastructure to support digital work. Because Omeka is not a centrally supported tool at UW, instructors who wish to install it on UW server space must tackle installation on their own. Instructor 2 estimated that, along with a teaching assistant, around forty hours was spent trying to get Omeka installed and running properly on the UW server. Both instructors complained that hosting the course Omeka sites on the UW server resulted in sluggish response times when multiple students were working on the Omeka site at the same time during class sessions. Running an unsupported tool also means that there is no centrally supported assistance when the tool breaks. Indeed, Instructor 1 reported that the site once crashed the night before a major assignment was due when all of the students logged in at the same time to upload their assignments. This resulted in the course TA having to pull away from assisting with course content and grading in order to bring the site back up. Instructor 2 reported similarly that a UW server upgrade once broke the Omeka course site a few days before the beginning of the quarter. Because the instructor was busy trying to make final preparations for courses, there was little time to investigate the source of the problem, and the instructor ended up paying a fee out of pocket to have University IT make the needed repairs to get the site running in time for the first day of classes. It is clear that a single point of entry and a robust digital infrastructure are key in helping faculty integrate new modes of scholarship into the classroom at low cost.

2. Research case study

The faculty member involved in this case study was under contract with a university press to publish a book. In order to keep costs down (it can be expensive to publish image-heavy books) and to provide open access to foreign contributors to the publication, the faculty member created a hybrid publication using Omeka. The Omeka site would contain additional images and offer an opportunity to incorporate discussions of media materials not possible in a typical print publication. Unfortunately, many university presses in the United States are not able to commit to long-term storage and hosting of digital companions to print work, leaving researchers to identify their own hosting and storage solutions should they choose to go the hybrid publication route.

Similar to the teaching case studies, this faculty member had to decide on whether to select a UW-supported tool or a non-supported tool. The faculty member began their hybrid publication journey with selection of a UW-supported tool, WordPress. Unfortunately, this site was hacked, leading to an

immediate site shut down by campus IT and the loss of all project data. The faculty member next selected a non-UW-supported tool, Omeka, to host the content, and hired a programmer to support the project with the help of additional grant funding. As with the teaching case studies, Omeka was painstakingly installed on the UW servers where it was sluggish due to the amount of image and media files contained within the site. Lack of clarity in how to set up a custom URL for the UW-hosted site also led to additional stress and unnecessary work on the part of the faculty member. Eventually it became clear that the site needed to be moved to a non-UW server to avoid these slowdowns and hassles.

At this point, the faculty member approached the UW Libraries in search of a hosting solution. However, without infrastructure and long-term digital preservation policies in place to support this type of hosting, the Libraries was unable to take the project. Instead, I worked with the faculty member to identify a low-cost hosting solution and helped to negotiate the transition of the site to that space. Still, questions remain as to why faculty member's personal funds must be spent on an ongoing basis to support scholarship that is ostensibly required to advance one's career, or to support UW classroom instruction. For faculty who receive grant funding from which the university takes a cut, the question is why funds from awarded grants aren't reinvested to support infrastructure necessary to share work publicly, particularly when public dissemination of research is a requirement from more and more grant funding agencies.

All case studies presented in this section would have benefited greatly if there was a single place to go early in the digital project planning process to get answers on how best to support the work as well as a robust digital infrastructure to support the work. My hope is that this assessment data will create an urgent need for the Libraries to begin experimenting with digital infrastructure to support student and faculty work. It also opens up the ability to begin conversations around funding opportunities to develop space on campus in support of digital scholarship work.

Limitations

The focus of these case studies on the singular tool Omeka is a clear limitation. A fuller case study assessment might have included the examination of additional tools, although such a project would be significantly more time-intensive Additionally, this study was limited to only the cases of three faculty, all of whom come from the same UW college, the College of Arts and Sciences. For a future study, it would be useful to look at faculty cases from different colleges that reported greater digital tools and methods integration.

Digital Pedagogy Assessment

Description

Based on our teaching case studies and focus group conversations, we wanted to take a deeper dive into what digital scholarship looks like in the classroom. Our goals for this portion of the assessment work were to determine who is teaching digital tools and methods in the classrooms (e.g., tenured faculty, untenured faculty, TAs, lecturers), to determine which departments and schools are incorporating digital skills and methods into the classroom, to determine at what level this work is being done (e.g., graduate versus undergraduate), and examine how various disciplines refer to digital scholarship work.

For this portion of the assessment study, the course descriptions in the UW course catalog were reviewed for mentions of digital tools and methods used as part of the course. Lists of courses were compiled by discipline and sent to subject liaisons for review, asking if, to their knowledge, the list of potential courses involving digital tools and methods was complete (see appendix F for email request templates and course selection criteria). Liaisons were then asked if they would be willing to send a request to their departmental administrative assistant to request a copy of the course syllabus. If the library liaison was unable to send the request, I did so. Requests were sent to departments over the summer months when departmental activity was quieter overall, leading to success in acquiring many of the requested syllabi. Of the 154 syllabi requested, 86 syllabi were received and reviewed of which 63 were determined to fit our initial criteria of incorporating digital tools or methods into the classroom.

Findings

1. Who is teaching these courses?

Instructors listed as the instructor of record on the syllabus, or in the course catalog if no instructor was indicated on the syllabus, were searched to determine their tenure status. Tenured faculty were found to be teaching most of these courses, followed by graduate students, and then nontenure-track faculty. Courses were taught at the lowest rate by nontenured, tenure-track faculty. These findings mirror those found during our focus groups/interviews where junior faculty expressed nervousness about how nontraditional forms of publication would be received during tenure and promotion processes, whereas graduate students expressed a strong need to show evidence of work with digital tools and methods in order to be marketable for future academic positions. Results may also be coupled with concerns that lack of a robust infrastructure to support digital work make it less desirable for untenured

faculty to pursue full teaching schedules and tight research time lines for tenure and promotion processes. Unfortunately, it seems this trend is not unique to UW. A recent Ithaka study notes, "Although a little over a third of full professors and assistant professors who answered our survey indicated that they have created or managed digital resources, almost half of the associate professors who responded have done so."[23]

2. Which departments are incorporating digital tools and methods into classes?

Similar to findings from the Triennial Survey data, the departments doing the most work incorporating digital tools and methods into the classroom included the College of Arts and Sciences, the College of Built Environments, and the College of the Environment. It is clear that as digital scholarship services are planned, the UW Libraries will want to keep a close eye on what is happening in these colleges.

3. Where is the work happening?

Perhaps not surprising given the large number of undergraduates at UW, digital tools and methods are being taught at a higher rate in undergraduate courses. This may be tied to our finding from the focus group/interviews assessment that graduate students feel the need to demonstrate their ability to use digital tools and methods to be marketable and thus are more likely to experiment with digital tools and methods in the undergraduate courses they teach. It is clear we must think critically how to scale additional support for undergraduates performing digital scholarship work.

4. How is digital work described?

Given the focus groups/interviews assessment findings that digital scholarship as a term does not resonate with the campus community, we were curious to see how instructors were describing this work in the various disciplines. English Studies instructors described all work, from digital story making to creating archives to story map production, as multimodal work. The largest discrepancies seemed to arise when looking at how disciplines described incorporation of tools or methods to create maps or perform geographical analysis. Terms used included GIS, spatial analysis, mapping, visualization, online maps, digital geographies, multimedia maps, digital spatial technology, critical cartography, and geovisualization. It is clear that to get cross-departmental buy-in for digital scholarship services and spaces, the UW Libraries will need to develop discipline-targeted messages or find another term, perhaps open scholarship, that allows all disciplines to see themselves in the services, programs, and spaces developed by the UW Libraries.

Limitations

Although the data gathered from this portion of our assessment process was informative, it should be noted that there are likely courses we missed in our assessment process due to limited course descriptions in the course catalog and subject liaisons' limitations because they did not have full knowledge of every course taught in their departments. It should also be noted that two departments refused to share their syllabi for the purposes of this study, because they did not want to share intellectual property created by the instructors. The College of Engineering was largely left out of this study because its largest department, the department of Computer Science and Engineering, is well-funded and therefore can pursue its own solutions to many of the issues expressed by our assessment participants. Were it included, the College of Engineering would likely be a leader in the incorporation of digital tools and methods into the classroom.

WHAT'S NEXT

Although the assessment work we've gathered thus far has been informative in establishing a baseline picture of the culture of digital scholarship and in beginning to form relationships with digital scholars across campus, it is time to move from assessment to action! Next steps we will be taking (or have already taken) in this process are outlined below.

Sharing Assessment Data. Assessment data has been shared widely in the UW Libraries, particularly as the strategic planning process is underway. Results have also been shared with the campus IT directors and the vice provost for Academic and Student Affairs in hopes of raising awareness and codeveloping solutions to these emerging needs.

Partnerships. We are identifying potential campus partnerships in hopes of filling in some of the gaps in the systematic learning of tools or programming languages. For example, it is hoped that a closer partnership with UW's eScience Institute may lead to a greater set of solutions for those undertaking digital projects in the future.[24]

Programs. In partnership with the UW Libraries' Research Commons unit, a collaborative space focusing on support for all steps of the research process along with opportunities to share research, I am experimenting with a new program series called Hacking the Academy.[25] The series takes a closer look at the new ways scholarship is produced, shared, archived, and reused through series of panel discussions and workshops. Now in its second year, the series' most highly attended programs fall into the category of workshops where participants are able to actively gain new skills or find funding opportunities for new modes of scholarship.

WICKED PROBLEMS FOR CONTINUED EXPLORATION

Of course, some problems surfaced by these assessments are more difficult than others to address and point to larger areas of exploration for UW's digital scholarship community. Many of our most wicked problems are tied to issues of funding, space, and limited personnel in an already resource-constrained environment. This leaves us in an uncomfortable, institutional soul-searching space. Wicked problems lacking simple solutions include:

Role of the library. What is the Libraries' role in supporting digital scholarship? What responsibilities lie solely with the Libraries and which should be picked up by or shared with campus partners?

Priorities. With limited institutional resources, how do we shift resources and priorities to support this new movement of students as creators of information? Do we stop doing some things in order to shift funding and resources to new areas? How do we make these decisions and communicate them to the broader campus community?

Platforms. Which digital scholarship platforms do we invest in? How do we balance the desire to self-host infrastructure and the realities of the competition for tech positions in the Seattle area with the risks of investing in hosted services that may be swallowed up by for-profit entities down the road?

Access versus preservation. How do we juggle the need for opportunities to share work openly through digital scholarship platforms with the need for long-term preservation?

Funding. How do we fund digital scholarship infrastructure when collection budgets are already limited? How do we estimate an ongoing budget for storage and hosting of digital scholarship work that maintains certain projects completed by the UW community over time and includes opportunities to grow the collection down the road?

Policies. What role can the Libraries play in helping faculty and students change promotion and tenure requirements or theses and dissertation requirements to include digital work?

We have recently established a Tri-Campus Digital Scholarship group, charged by three associate deans in the UW Libraries and including both UW Libraries' staff and stakeholders across the campus community. This group is a good step forward not only in establishing deeper partnerships across the three campuses but also with the campus at large. The group will come together with a shared vision and work toward a solution to these wicked problems.

CONCLUSION: A WORD OF CAUTION

Whereas some libraries have significant digital scholarship programs already in operation, the UW Libraries is still making strides in understanding the underlying culture of digital scholarship at UW. The assessment work completed thus far offers a window into that culture and the microcosms of digital scholarship bubbling up throughout campus. Sharing assessment data is helping to raise awareness of growth opportunities across campus to support digital scholarship. Openly sharing digital scholarship assessments has also surfaced patterns of need across institutional boundaries.

That said, although assessment data collection can be useful in determining next steps and creating library buy-in for moving a digital scholarship program forward, it should be noted that the mere act of assessment creates an expectation that participants' perceived digital scholarship problems will be solved. Consequently, unless one is in a position to make changes and create such solutions, one risks leaving digital scholars with a sense of frustration, feeling like they are contributing their time and goodwill to a cause that isn't producing results. Assessment is the beginning of creating long-lasting relationships with digital scholars. These relationships must be nurtured through continual check-ins with those involved in assessment and with status updates on how data shared is being used to move interests forward.

Librarians should also exhibit caution by limiting themselves to acting only on the needs gathered during the assessment process without considering the future of the field. As one focus group interviewee put it, "needs assessments only represent what is being attempted at this time at the University. Who knows what faculty or students could achieve by being opened up to a larger world of possibilities they don't even know exist?" As Brian Matthews, the associate dean for Learning and Outreach at Virginia Tech, writes in *Think Like a Startup: A White Paper to Inspire Library Entrepreneurialism,* "Assessment isn't about developing breakthrough ideas. In short: we focus on service sustainability rather than revolutionary or evolutionary new services."[26] The 2014 OCLC Report *Does Every Research Library Need a Digital Humanities Center?* concurs with Matthews on the importance of keeping an eye towards the future of the Libraries partnering with researchers as creators of new knowledge, "It has been argued that the digital revolution is reconnecting scholars and memory institutions. Ignoring this trend could sever those relationships and position the library more as a museum than as an integral contributor to scholarship."[27] Although solutions to these problems are difficult to mediate and resolve, inaction in supporting the changing role of how scholarship is produced will result in serious consequences for a library's standing across campus and in higher education as a whole. Between the work you'll read about in this book and the newly formed Tri-Campus Digital

Scholarship Group, the UW Libraries stands ready to take on the challenges of building a robust digital scholarship program to meet the needs of today's researchers and those yet to come.

Takeaways

- Limitations of traditional publication systems (tenure and promotion or thesis and dissertation requirements) have serious implications on a scholar's opportunity to engage in this work and/or a scholar's workload, feeling the need to produce both types of scholarship to move forward.
- Above all, digital scholars want a single point of entry where all of their digital project questions can be addressed coupled with a reliable digital infrastructure with which to perform this work.
- Libraries need to work with faculty to incorporate new forms of scholarship into the classroom through codeveloping research assignments putting students at the center as content producers rather than content consumers, engaging in active training and conversations in metadata construction, talking through the lifecycle of digital work, offering hands on rights training, and incorporating discussions of reproducibility best practices into the classroom.

NOTES

1. Association of College and Research Libraries, "Digital Scholarship Section Listserv," March 26–27, 2018.
2. Digital humanities work began at the University of Washington in the late 1970s with faculty members Walter Andrews (Near Eastern Languages and Civilizations) and Leroy Searle (English). Two separate campus entities have also been around since the 1980s: The Center for the Humanities (now the Walter Chapin Simpson Center for the Humanities) and the Humanities Arts and Computing Center (now the Center for Digital Arts and Experimental Media).
3. University of Washington Libraries, "Digital Scholarship Librarian Position Description," May 17, 2018.
4. I would like to acknowledge those who contributed to the assessment process ,including Jackie Belanger and Maggie Faber of the UW Libraries Assessment Team; UW iSchool students Abigail Darling and Becky Ramsey Leoparti; Michelle Urberg, Liz Bedford, Jenny Muilenburg, Khue Duong, Beth Lytle, and the Libraries' Teaching and Learning Group's Assessment Subcommittee. This assessment work is possible thanks to their feedback on assessment design and their assistance collecting and analyzing assessment data.
5. UW has taken the approach to include the arts, humanities, social sciences, and sciences when developing services for digital scholarship.

From the Culture of Digital Scholarship in Academic Libraries, edited by Robin Chin Roemer and Verletta Kern (Chicago: American Library Association, 2019).

6. Josh Been et.al., *Digital Scholarship Road Map: A Report from UH Libraries' Digital Scholarship Team* (Houston: University of Houston Libraries, 2016), 6, http://hdl.handle.net/10657/1623.
7. Jennifer Schaffner and Ricky Erway, *Does Every Research Library Need a Digital Humanities Center?* (Dublin, Ohio: OCLC Research, 2014), 16, www.oclc.org/content/dam/research/publications/library/2014/oclcresearch-digital-humanities-center-2014.pdf.
8. Jennifer Vinopal and Monica McCormick, "Supporting Digital Scholarship in Research Libraries: Scalability and Sustainability," *Journal of Library Administration* 53 (2013): 29, doi: 10.1080/01930826.2013.756689.
9. Kirk Anne et al., *Building Capacity for Digital Humanities: A Framework for Institutional Planning* (Washington DC: Educause Center for Analysis and Research, 2017), 9, https://library.educause.edu/resources/2017/5/building-capacity-for-digital-humanities-a-framework-for-institutional-planning.
10. Aaron Brenner, *Audit of ULS Support for Digital Scholarship* (Pittsburgh: University of Pittsburgh, 2014), 16, http://d-scholarship.pitt.edu/id/eprint/25034.
11. Diane Harley et al., *Accessing the Future Landscape of Scholarly Communication: An Exploration of Faculty Values and Needs in Seven Disciplines* (Berkeley: Center for Studies in Higher Education, 2010), 9, https://escholarship.org/uc/item/15x7385g.
12. Digital dissertations are starting to gain traction at some institutions including George Mason University, which has developed guidelines for digital dissertation work in the Department of History and Art History; see https://historyarthistory.gmu.edu/graduate/phd-history/digital-dissertation-guidelines. The Modern Language Association's Committee on Information Technology has also developed a list of various Guidelines for Evaluating Digital Work. To date, UW's Center for Digital Arts and Experimental Media (DXARTS) is the only campus entity to fully support digital dissertation work.
13. Participants acknowledged that some of the equipment they were interested in using was available in various departmental labs on the UW campus; however, usage of this equipment was restricted to those enrolled in the department housing the lab. Rather than the costly endeavor of each department trying to spin up labs duplicating resources, the UW Libraries was suggested as an opportune place to house all potential equipment for use by any UW student, faculty, or staff.
14. University of Washington Libraries, "Triennial Survey," www.lib.washington.edu/assessment/surveys/triennial.
15. University of Washington Libraries, "Triennial Survey Results: Digital Scholarship Discussion," July 20, 2016, 1.
16. Ibid.
17. Chapter 7 provides additional information on the history of these Office Hours.

18. Each year, UW's Walter Chapin Simpson Center for the Humanities funds a select number of graduate students and faculty to pursue a digital humanities research project. Information on this program and funded projects may be found at https://simpsoncenter.org/programs/digital-humanities-summer-fellowships.
19. See chapter 7 for a broader discussion of DS consultations.
20. Sheridan Brown et al., *International Advances in Digital Scholarship* (Oxford: Jisc and CNI, 2016), 6, https://www.jisc.ac.uk/reports/international-advances-in-digital-scholarship.
21. B. Alexander et al., *Digital Literacy: An NMC Horizon Project Strategic Brief,* 3.3 (Austin, X: The New Media Consortium, 2016), 6–7, http://cdn.nmc.org/media/2016-nmc-horizon-strategic-brief-digital-literacy.pdf.
22. Anne et al., *Building Capacity for Digital Humanities,* 17–18.
23. Nancy L. Maron and Sarah Pickle, *Sustaining the Digital Humanities: Host Institution Support beyond the Start-up Phase* (New York: Ithaka S + R, 2014), 15, www.sr.ithaka.org/wp-content/mig/SR_Supporting_Digital_Humanities_20140618f.pdf.
24. Although "science" is the title, the eScience Institute aims to serve all of campus through support of data science. The Institute offers hours and serves in data visualization, cloud computing, and more. Additional information on the eScience Institute may be found at https://escience.washington.edu/about-us/.
25. Sample programs for Hacking the Academy may be found at www.lib.washington.edu/digitalscholarship/hacking-the-academy-programming-series. Special thanks to Dan Cohen and Tom Scheinfeldt for their willingness to let us use the title of their book as the title of our program series.
26. Brian Matthews, *Think Like a Startup: A White Paper to Inspire Library Entrepreneurism* (Blacksburg: Virginia Tech, 2012), 9, http://hdl.handle.net/10919/18649.
27. Jennifer Schaffner and Ricky Erway, *Does Every Research Library Need a Digital Humanities Center?* (Dublin, Ohio: OCLC Research, 2014), 16, www.oclc.org/content/dam/research/publications/library/2014/oclcresearch-digital-humanities-center-2014.pdf.