



Assessing Digital Humanities Tools: Use of Scalar at a Research University

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abstract: As librarians increasingly support digital publication platforms, they must also understand the user experience of these tools. This case study assesses use of Scalar, a digital humanities publishing platform for media-rich projects, at the University of Illinois at Urbana–Champaign. Based on a survey, interviews, and content analysis, the study highlights the platform’s usability, its functionality, and its successes and failures in meeting user expectations. The media upload process, image annotation, and aesthetics factored into user issues. Writing pedagogy also emerged as an important consideration. Results suggest lessons for digital literacy instruction, as well as how and when Scalar might serve patrons’ publishing needs.

As digital humanities (DH) has expanded—if unevenly—over the past several years at academic institutions, affiliated libraries have sought to support it. Libraries provide dedicated library DH staff as well as DH labs. They operate digital scholarship centers where DH may be one of the areas supported, and they collaborate with other campus units to use digital media for scholarly and research goals. These efforts include a variety of activities to support unique scholarship. However, there is also movement toward support for standardized research tools that can satisfy a greater share of DH needs without the demands on staff time and expertise created by digital projects built from the ground up.¹ Increasingly, librarians must understand what digital scholarship needs faculty and students have, match those needs with particular tools where appropriate, and support the use of such tools.

This article reports on a case study of the rollout and use of one open-source DH publishing platform, Scalar, at the University of Illinois at Urbana–Champaign, a large public research university that partnered with the platform’s developers. Most broadly, this study examines how faculty, staff, and students used (or did not use) Scalar in the context of a substantial marketing effort for the tool on campus. More particularly, it considers:



- What desired and actual uses of Scalar have arisen?
- To what extent have Scalar users felt successful?
- What usability issues do they report?
- What broader issues have arisen that exceed usability problems?
- How does Scalar fit into the broader ecosystem of DH tools?

Scalar offers an opportunity for user studies because it promises new capacities for DH publication that many libraries will likely want to support. Designed by the Alliance for Networking Visual Culture (ANVC), led by Tara McPherson at the University of Southern California in Los Angeles, Scalar seeks to provide researchers with the abil-

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ity to create media-rich publications in a platform as easy to use as WordPress, a popular blogging tool and content management system. Scalar's signature features include the easy embedding of media alongside text in online "books" (interactive multimedia websites) and the ability for researchers to create multiple narrative "paths" (sequences of content) through their books. It also allows for extensive annotation of both text and media by authors and readers.² One example highlighted on the Scalar website and in the campus rollout is a multimedia website called *Freedom's Ring*.

The site plays a recording of Martin Luther King Jr.'s "I Have a Dream" speech as the screen scrolls through a series of overlapping images of historical artifacts related to the speech. The site also shows the full text of the speech, revealing differences in King's performance from the prepared version.³ Another featured example online and in campus presentations is *Exhibitions Close Up—Bernini: Sculpting in Clay*, a digital companion to an art museum exhibition.⁴

The integration of media and options for nonlinear scholarship are key to Scalar and more broadly to ANVC's mission "to support emerging genres of scholarship."⁵

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McPherson and others have written about this mission elsewhere, including issues of how to pursue feminist or otherwise critically motivated publication platforms, designs, and reading experiences.⁶ Most importantly for the present study, the opportunity for media integration and options for nonlinear writing suggest a different compositional process for academic ideas that has significant implications for the user experience of the platform. This issue will be important for many DH tools that libraries may seek to integrate because, more than simply easing existing practices, DH tools carry the

potential to alter scholarly workflows, methodologies, and writing practices.

The campus humanities center led the rollout effort for Scalar in this case, but the library almost immediately began providing assistance despite not advertising the tool as a supported resource. The library support included instructional assistance



from the digital humanities librarian, answers to queries at the library's graduate student and faculty-oriented Digital Scholarship Unit, and other technical support at an undergraduate-oriented Media Commons space. The library has shown some interest in increasing support for the tool, including limited discussion of the library hosting its own instance of Scalar for campus use. Because the library has already begun providing de facto support for the tool, and because this assistance will likely continue even if local hosting does not come to pass, an understanding of user issues with the tool could help the library to anticipate service needs. This case study, then, may help other libraries facing similar demands to consider issues particular to supporting Scalar. To the extent that the promotion of Scalar on the campus shapes some user responses, this study also has relevance to the rollout of other DH tools on other campuses, whether by the library or other partners.

Literature Review

As Claire Warwick laments, despite a solid history of studying how humanists search for and use information generally, user studies research specifically related to digital humanities has been sparse.⁷ She sums up the too-common approach as "provide good resources for the user, tell them what to do and wait for them to adopt digital humanities methods."⁸ She calls for broader adoption of user-centered methods in the process of creating a DH collection or other resource. A handful of projects, including Warwick's, have focused on this kind of user-driven development. However, the users and uses considered by DH developers are not always as broad as would benefit development. DH funding proposals and the resulting projects often overlook pedagogical uses.⁹ Reporting on the creation of a DH network analysis tool, Project RoSE (Research-oriented Social Environment), Lindsay Thomas and Dana Solomon noted the course correction they made to avoid this tendency and involve students in the development of the tool. Their tool focused on discovery and learning, and student feedback shaped "both usability and conceptual issues."¹⁰

More commonly, strengths and weaknesses of DH tools appear briefly in case studies of resource development where a library or research group selects and uses the tool to create a collection. These user reports contribute to a broader understanding of particular tools but are often limited: first because the tool and broader user issues around digital tools are not the research focus of the case studies, and second because evaluation of the tool focuses largely on functional requirements in relation to the project rather than on the user experience.¹¹ One such case study provides an exception where initial functional assessment leads to further detailed discussions of usability and user experience problems: Jason Kucsma, Kevin Reiss, and Angela Sidman's report of user issues that arose in a digital collection project built with Omeka. Although Omeka is a tool developed specifically for scholarly content, Kucsma, Reiss, and Sidman highlight such issues as the tedium of record-by-record metadata creation and an interface that allows users to make key errors that result in lost work with no option for recovery.¹²

Reports of instructional use cases have appeared more recently in discussions of digital literacy and DH pedagogy, and these provide some insight into user hopes and fears for these technologies. In a rare published case describing Scalar use, Anita Say



Chan and Harriett Green discuss how they incorporated Scalar and several other DH and traditional library tools into undergraduate courses. Their students experienced mostly successful use of Scalar, with some frustrations with the software structure, in a class that encouraged students to engage with new ways to integrate evidence, especially media, into projects.¹³ Allison C. Marsh, by contrast, reports a “mostly disastrous” experience asking graduate students to use Omeka. Her experience, however, suggests two pedagogical challenges for consideration by future instructors: “Students need more training on basic digital tools” and “Students need more training on effective narration/curation/storytelling.”¹⁴ Marsh also footnotes an observation that students found online sample Omeka exhibits to be “a double-edged sword” because, while inspirational, they were also unattainable—a problem that has echoes in the present study. The trouble students had with the tool, though, did contribute to useful discussions about problems in digital curation.

In this respect, Marsh’s assessment fits well with other arguments positing that failure in the DH classroom can be a fruitful part of the learning experience and new

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tools can be an opportunity to rethink the creation process. Meditating on the role of failure in the DH classroom, Katherine D. Harris argues, “Successes are fewer than we think; failures are more often the norm.”¹⁵ These failures result in learning for students and instructors about how to engage

digital technology. Maura Ives even more directly claims, “At some point you, or your students, will hit the wall [of technological failure].” This shows, she says, that you are “doing something right—and you will have the opportunity to teach your students how to bounce back and keep going, which may be one of the most valuable things that they can learn from us.”¹⁶

The emphasis on a confrontation with difficulty raises important issues for user experience studies, especially when studying innovative tools such as Scalar that encourage new modes of thinking and writing. In particular, researchers need to disambiguate complaints about particular tools in order to distinguish true usability problems from the frustrations emerging from a clash between mental models—that is, the mental models users bring to a tool and the new models the tool may specifically be meant to enable. Ives may overstate the case that any confrontation with technological failure is a good learning experience, but certain clashes may reveal a need for different pedagogical approaches to creation rather than simply bad user interfaces. Library and information science (LIS) professionals working with classroom instructors, then, can benefit from studies of new digital tools that account for the broad user experience of those tools separate from usability concerns specifically. Therefore, this study seeks to differentiate between usability problems in Scalar that prevent users from engaging the tool successfully and difficulties users faced due to unfamiliar writing expectations. This study also aims to acknowledge where the line between these two issues may blur.



Research on library DH support has predominantly focused on administrative structures or broad campus needs. A 2011 survey of libraries belonging to the Association of Research Libraries (ARL), for example, showed a broad array of emerging models for DH support.¹⁷ Two years later, an issue of the *Journal of Library Administration* focused on some emergent and proposed models. In that issue, Miriam Posner notes two broad administrative trends: (1) a “service-and-support model” where librarians assist scholars with projects they bring to the library for help; and (2) a more collaborative model with librarians involved as partners in DH projects.¹⁸ In a proposal with elements of both paths, Jennifer Vinopal and Monica McCormick provide a model for “scalable and sustainable” tiered services. At one level, these tiered services serve and train for a set of standard tools for everyday needs, with no customization support. In select cases at more advanced levels, tiered services engage with scholars in more creative, sustained ways, often with the support of grant funding.¹⁹ At the level of the individual campus, an environmental scan of campus DH support needs identified more than twenty-five types of support for DH work provided by libraries and DH centers at the University of Colorado–Boulder.²⁰ The authors identified an overall lack of campus community around DH as the leading barrier to such research, and they advocated working with campus partners on programming and outreach.

Despite the rarity of user studies for library DH support, libraries have a history of studying how people find and use information, not just in the service of tool creation but also to improve services for those using existing tools, particularly search tools. Such investigations are similarly necessary for DH tools. LIS professionals need to understand common user needs that attract people to particular tools, features that make those tools easy (or difficult) to use, and best practices for promoting them to users through marketing or instructional efforts.

Methodology

This case study of institutional adoption of a DH tool used a mixed-methods approach to gain understanding of the use of, and reactions to, Scalar at the University of Illinois at Urbana–Champaign. After Institutional Review Board approval, members of the university community who attended a Scalar information session or workshop, or who otherwise indicated interest in Scalar, received an e-mail invitation to complete a brief survey. The survey asked about the extent to which they had used Scalar or other digital publishing tools (see Appendix A). The survey was initially distributed shortly after the spring 2014 semester, when several instructors were using Scalar in their classes.

Survey respondents were invited to participate in follow-up interviews in summer and fall 2014 (Appendix B). Two sets of complementary interviews were conducted: one with users of Scalar for digital publishing or pedagogy, drawn from survey respondents; and a second set with select survey respondents and others identified as providing support for use of Scalar on campus. The author also examined selected Scalar books created by students.

Discussion of Results

Timeline

The campus humanities center first highlighted Scalar to members of the university’s humanities community in July 2013 in a “save the date” announcement for fall 2013, kicking off the beginning of the marketing and outreach efforts on campus. See Figure 1 for a timeline of the rollout.

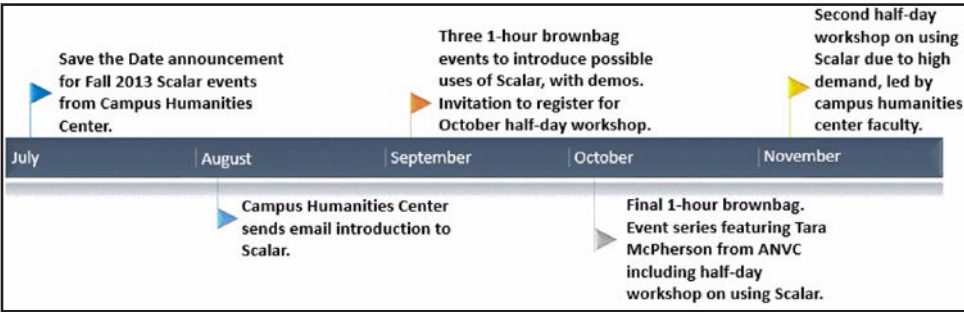


Figure 1. Timeline for the introduction of Scalar

News of Scalar during this time already began to impact courses and the library. A few graduate and undergraduate courses started using Scalar in the fall (see Appendix C for the profiles of Scalar User One and Scalar User Four as examples). The DH librarian (Scalar Supporter One) spoke with three faculty members about using Scalar in their classrooms and began partnering with one of them to do so (Scalar User Four). The library’s public-facing Digital Scholarship Unit began to receive initial inquiries during the fall as well, though it was not explicitly marketing support for the tool. More classes used Scalar during the spring 2014 term, with continued involvement of the librarian and a small number of inquiries at the Digital Scholarship Unit. The faculty member from the campus humanities center also visited a number of classes, met with individual instructors using the tool, and provided introductory sessions on Scalar to specific groups, such as an instructional program focused on campus ethnography. One interdisciplinary faculty working group on media studies and another departmental group also discussed Scalar in their meetings during this period.

Survey and Interviews

Twenty individuals responded to the survey (see Appendix C for a summary of all responses). Eight interviews came from these respondents and one additional individual identified as providing significant support for Scalar (see Appendix D for profiles of the interviewees). Tables 1 and 2 show the demographics of the participants. For the purpose of analysis, I refer to “Scalar User” and “Scalar Supporter” with a number to distinguish the participants and the interview protocols used, although in reality the same person might have filled those two roles at different times.

Table 1.

Survey and interview demographics

College or unit	Survey (N = 20)	Interviews (N = 8)
Graduate School of Library and Information Science	2	1
School of Art and Design	4	2
College of Liberal Arts and Sciences	7	2
College of Media	3	1
Campus technology	2	0
University Library	2	2

Table 2.

Survey and interview demographics

University status	Survey (N = 20)	Interviews (N = 8)
Faculty (includes lecturers)	9	7
Staff	3	1
Graduate student	7	0
No answer	1	0

Expectations and Uses for Scalar

The surveys and interviews revealed a mix of desired teaching and research uses of Scalar, but participants more frequently pursued teaching uses. None of the interviewees had used the platform for publishing research, although two were conducting research involving analysis of Scalar as a publishing platform. One interviewee knew of other research proposals by colleagues intending to use Scalar to publish research.

Eleven survey respondents indicated planned or in-progress research use of Scalar. Three of them were writing about, rather than with, Scalar (a graduate student and two who were later interviewed). Five others were graduate students who used Scalar in lieu of or alongside a traditional paper in a class (including at least one in Scalar User One’s course). In one case, the student utilized Scalar as a supplement to a thesis project, explaining that the software enabled building “a rhizomatic network to illustrate my Graduate thesis research and studio practice.” While other users indicated interest in the idea of creating multiple paths in Scalar, this student is the only participant who reports



a possibly successful use of this feature in a project. Other research uses reported in the survey were a proposed Scalar site to host supplemental material to a book chapter and two reported potential uses of Scalar as an exhibit platform. One researcher utilized Scalar to create a new personal research profile page after the university discontinued the Web server space he had used previously.

When asked to elaborate on their research uses in interviews, participants identified a number of reasons Scalar appealed to them:

- the ability to incorporate multimedia or more images than can usually be included in a print publication;
- the ability to create multiple paths through a set of research objects;
- its potential as an outreach platform to provide versions of academic research presented in a way more appropriate to a public audience;
- its potential as a process tool to see connections between objects in a large image archive.

All but the last of these functionalities fit well with the ways Scalar had been marketed.

In the survey, seven instructors reported having used Scalar in classes: one in LIS for a cross-listed course with other departments, two in the Department of History, two in Media and Cinema Studies, one in Art History, and one in the University Library. They had used Scalar to create online syllabi, asked students to complete individual and group projects with it, and employed Scalar to organize content for students to use in their projects. The interviews revealed that another instructor had extensively tested Scalar for use by rhetoric students for an assignment but decided not to use it.

All but two of the interviewees taught a class with Scalar or provided support, and their responses revealed more of the specific goals in classrooms. Instructional intentions included:

- desiring to have engagement with technology as the general learning theme of classes;
- enabling complex annotation and critical conversation about online artifacts by students;
- seeing relationships between different kinds of evidence (that is, text, images, and other media) and raising methodological issues in incorporating them;
- comparing annotation techniques as scholarly practice in print and in newer technologies;
- enabling student work in media-heavy classes.

Scalar User Five additionally identified Scalar as a candidate for plans to use a platform to develop a new, ongoing undergraduate publication that provides scholarly frames for historical artifacts, which could then be used in classes as an open educational resource.

Meeting Expectations and Uses

Successes in using Scalar for publishing research were difficult to identify, although in some cases it was too early to tell. Scalar User One still hoped to use it for research on multimedia artists despite a frustrating experience teaching with the tool. She cited the ability to incorporate a larger amount of media and construct a nonlinear reading object



as important. Likewise, Scalar User Three thought Scalar might prove useful for creating archival exhibits. Scalar User Two, however, was more skeptical: while tempted to use Scalar as a process tool for images in her personal archive, she noted that it could not support the number of images she had, did not have a good way to ingest her archive, and lacked the ability to limit access to images she had licensed from others. Moreover, she felt that any public site could not work for her publications or even for public outreach efforts because the site design lacked sufficient sophistication. Scalar Supporter Two did highlight, however, a researcher who had submitted a Scalar book as a supplement to a grant application.

Teaching uses ranged much more broadly from success to failure. Scalar User One and Scalar User Two, for example, both reported that their experiments with Scalar in the classroom had failed almost entirely. Scalar User One noted that, outside of a few media-savvy students, her class encountered problems even creating accounts in Scalar. The students also ran into usability and broader user experience problems in constructing Scalar books. However, she placed as much blame on the design of the course as on Scalar, due to technology overload: “So here we were asking them to go to at least three platforms to do work and you know—a problem. So that’s not Scalar’s fault obviously.” She also noted that Scalar might not have been the best conceptual fit for all student projects. Scalar User Two expressed the most frustration: her undergraduate students had given up during what she felt was an overly complicated creation process, and she shared written end-of-semester feedback from them documenting their feeling that Scalar did not work.

On the other hand, Scalar User Four, Scalar User Five, and Scalar Supporter One had positive experiences with Scalar across four different undergraduate classrooms. They cited some usability and user experience challenges but felt that students successfully created basic Scalar books that incorporated different types of media. For Scalar User Four, the limited challenges her classes faced with Scalar actually helped the students reflect on new publishing technologies: Scalar, as a less familiar platform still in development, offered opportunities for reflection. However, she and Scalar Supporter One noted that the students’ frustration with the usability problems increased when going beyond their first book. Scalar User Five felt that the platform helped students to think through multimedia sources critically as historical sources. What both of these instructors wanted most from Scalar was better instructor control of student-by-student editing permissions within coproduced books.

One significant frustration that repeatedly arose in interviews involved the visual design of Scalar books. All the participants had been dazzled by sophisticated examples used in campus marketing efforts and on the Scalar website, including *Freedom’s Ring*. The gap between what Scalar User One called the “super-sexy” demo books, which had significant design support, and what Scalar User Two referred to as the “rustic” appearance of out-of-the-box Scalar books disappointed both students and instructors. Even Scalar User Four, generally the most enthusiastic, suggested a desire by her students for more sophistication in design when they continued from a first to a second assignment using the platform. Interviewees cited the basic design as a possible barrier to use for research products since any more sophisticated design would require funding support, something humanities and arts scholars usually lack.



However, some participants noted that they might have felt less disappointed if the demo books been more realistic from the start. The out-of-the-box look even compared favorably to other platforms, with Omeka being a frequent point of comparison. Scalar User Three, for example, preferred the appearance of Scalar to that of Omeka but remained doubtful of how easily one could create a more sophisticated design. This marketing problem echoes Marsh's findings when using Omeka in her graduate classroom, suggesting a broader applicability to the question of how to promote DH tools. Grant-driven projects, in particular, often need to demonstrate their most advanced and appealing uses, but this could backfire if sample projects are not realistically achievable for everyday users.

Usability Issues

Interviewees reported varying experiences with beginning to use Scalar, finding it either difficult or easy. Some of the difficulties, though, seem to have been a by-product of having a hard time finding Scalar through Google: Scalar User One remembered that during fall 2013, Google search results did not feature the platform, so anyone looking for *scalar* found results related to a math or physics term.²¹

The most frequent set of usability problems cited by interview participants revolved around the media upload process. While Scalar's capacity to integrate multimedia alongside text was a key attraction, and probably its most successfully used feature, users encountered several obstacles. Scalar's limit of two megabyte-sized files, for example, was not sufficient for many of the media objects users wanted to incorporate,

especially for video. Some users wanted to batch-import a large library of media files but had no easy way to get them into the system. Multiple interviewees also mentioned confusion about the options for incorporating media. Scalar User Two pinpointed this as an interface problem because the icons for four different media options were hard to distinguish (see Figure 2): "[Students] found this opaque

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... And at first I found it opaque! I really would have to do it to be reminded which one is which." Scalar also requires the media upload process to work separately from page creation, which interviewees found counterintuitive. They and their students often had to back out of their page-creation process to go back and upload an image into their site.

Another usability problem involved the annotation process for images. Scalar requires users to specify X/Y coordinates for the horizontal and vertical positions of an annotation box to place the box within the image or other media. Users also must manually input size requirements for the box (Figures 3 and 4). As Scalar User Two lamented, "Students just don't understand X and Y [for this process]. They had a really hard time with that." Scalar User Six agreed, citing problems with pinpointing parts of images for annotation as one reason he decided not to use Scalar in his class. Both wanted an interface allowing users to quickly move a mouse to select the appropriate part of the image for an annotation.



Figure 2. The Scalar toolbar with icons for the options for incorporating media. Some users found the icons difficult to tell apart.

Title

Manutius

X: 20

%

Y: 20

%

W: 20

%

H: 20

%

Content

Description

Figure 3. The Scalar interface requiring users to manually input size requirements for an annotation framing box and to specify X/Y coordinates to position the box



Figure 4. An example of a Scalar annotation, “Manutius,” in an 1890 painting by François Flameng, *Aldus Manutius in His Printing Establishment at Venice, Showing Grolier Some Bookbindings*, collection of the Grolier Club, New York. Licensed under Public Domain via Wikimedia Commons, http://commons.wikimedia.org/wiki/File:Aldus_in_His_Printing_Establishment_at_Venice_Showing.jpg#/media/File:Aldus_in_His_Printing_Establishment_at_Venice_Showing.jpg



Only one survey respondent, an IT specialist, reported intentional use of the custom cascading style sheets (CSS) option, which controls display of Web content, for testing purposes. No participants used the option to add custom JavaScript. However, Scalar Supporter One reported that one student accidentally put something in one of the custom boxes, and it created substantial account problems: until the problem was fixed, the student would be logged out of his account any time he tried to navigate to a new page.

Issues beyond Usability

Users most frustrated with Scalar had a clear mismatch between their mental models (and those of their students) for how the creation and writing process should work, and for the content creation processes demanded by Scalar. Scalar's departure from basic functions available on other widely used publishing platforms—for example, being able to upload media directly onto a page—ties fundamentally to the writing capabilities

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enabled by the platform. Scalar makes its nonlinear functionality possible by separately managing pages, paths, media objects, annotations, and tags (keyword descriptions for content that link to related content). Any one of these entities, viewed on its own, simply looks like a web page. This architecture allows media to be reused in different ways, but most

importantly, it makes possible the mutable uses that are central to Scalar's conceptualization. For example, a media object or a path can be made an annotation to another media object, or a media object can even become a path (see Figure 5).

Scalar Supporter Two, while enthusiastic about Scalar, acknowledged that this extreme flexibility could be "one of the chief challenges" for users: "That mutability reflects the theory behind the design in a way that's very exciting . . . but it's really

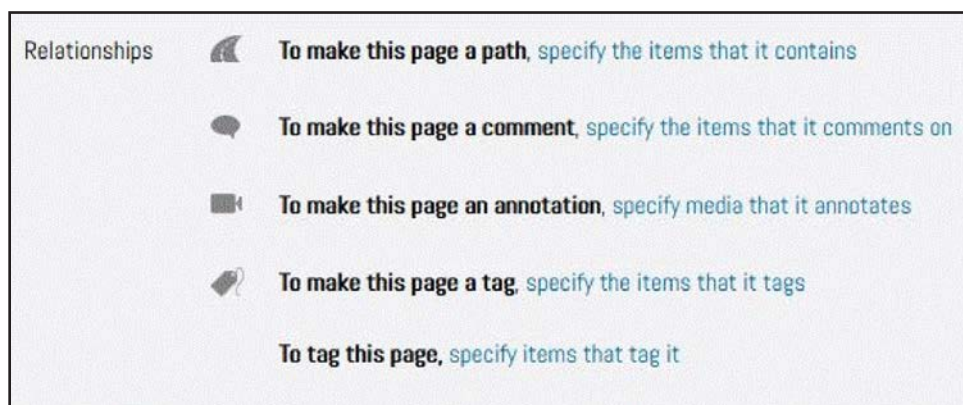


Figure 5. The Scalar menu that enables a media object to be used in four different ways: (1) as part of a path, (2) as a comment, (3) as an annotation, or (4) as a tag indicating a relationship with another item, or in any combination of those uses



when anything can be anything it's hard to get into it as somebody looking for some specificity. It's like painting in the dark a little bit sometimes." Scalar User One eventually came to the conclusion that Scalar failed in her co-taught class in part because the instructors did not anticipate the disjuncture between Scalar's emphasis on nonlinearity and the needs of particular student projects. Doing it again, she would have students complete more prewriting and project mapping to organize their ideas and then decide whether Scalar was really the platform needed for their work. Scalar Supporter One and Scalar Supporter Two both endorsed these preparatory steps of prewriting and thinking about process. Scalar User Five, who had no digital publishing projects for his research, identified a reason for this need related to expectations about writing and genre: "I'm still figuring out what kind of writing it would be, and for whom, audience." This comment highlights how Scalar seeks to provide different ways to think about writing and genre in a digital environment. The mismatch with user mental models is not, in this sense, purely a technical problem but a social question that may call for a willingness to experiment with research outputs or different pedagogical approaches.

Evidence of a gap between users' ideas of how to write and the affordances of Scalar—the system's clues about how it should be used—is clearest in the relatively low use of the creation of multiple "paths" through books in Scalar. The gap is also apparent in the specific ways that some students implemented paths versus pages in publicly accessible Scalar books. With the exception of one graduate student survey respondent who likely used this feature, only Scalar User One expressed much interest in the ability to use multiple paths to create a nonlinear book. Although students successfully created online books for several classes, they generally followed a linear structure of a series of pages. Books created by Scalar User Four's students, for example, illustrate some confusion in the relationship between paths and pages. Examples from one class include a book with a series of pages but no path connecting them; the pages could only be explored through a menu suggesting a linear progression. Other examples were a book with

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no pages but instead a series of nested openings to paths, and a book that included multiple paths where each had multiple pages, but with each path nested in such a way as to create only one linear reading experience. Other students successfully created a single path of multiple pages. The use of multiple paths was not a requirement for this class, so the students' alternate methods of creating a linear reading experience without paths did not pose a problem, but it does reveal that the concept of the path itself was not necessarily transparent.

The dominant use of Scalar in teaching practice warrants further attention as an area where Scalar's design did not meet expectations of users. Even most survey responses on actual research uses from graduate students indicated these uses arose in the context of a course, with the exception of the thesis student. Scalar, like many other DH tools, has been designed foremost around researcher needs. Scalar User Four, Scalar User Five, and Scalar User Six nonetheless all noted overlapping sets of features that would improve the ability to teach with Scalar. These included:



- tiered authoring permissions to enable student collaboration without giving them the ability to destroy one another's work;
- time stamps for pages based on the last update rather than date of creation (for course deadlines);
- a "fenced in" Scalar with books only viewable to the class, to keep student work private;
- a way to delete a book that is created: without this, test sites, failed projects, or student sites that list the instructor as a coauthor for grading purposes wind up cluttering the author interface.

However, Scalar User Five highlighted one especially attractive feature of the platform that met a need important to his teaching and research: it was not a corporate product, and therefore he would not be requiring students to hand personal data over to a commercial entity.

Scalar in Campus Digital Publishing

Survey questions asking about respondents' use of other digital publishing tools prompted a total of thirty-three different tools: twenty-one for research and creative work, and twenty-two for teaching (with ten mentioned in both cases—see Table 3). The survey did not offer a specific definition of *digital publishing*, in part because the line between publishing and other activities can blur in a digital environment, and in part to allow users to include anything they thought might apply. A few users indicated being unsure whether certain technologies applied—and individual examples probably do not qualify as publishing tools (such as Box file-sharing software), or in other cases could be used for multiple purposes.

By far the most commonly mentioned platform was WordPress, followed by Omeka. For teaching, participants identified several course management systems. However, when those who used Scalar were asked what they would have done without Scalar, five identified Omeka as a likely alternate tool, followed by four mentions of a blogging tool (WordPress especially but not exclusively), and one each for a course management system, PBworks, creating videos, and "any number . . . of tools." About an equal number of participants said they needed Scalar to conduct their research or teaching compared to those who identified one or more alternate tools.

It is not surprising that WordPress, Omeka, and course management systems (as a whole) were most mentioned among platforms, given that they are the options that various campus units systematically support and promote. Wikis also have campus support but were not mentioned as frequently. It may be that participants did not think of wiki use as a publishing activity.

While already suggested by the survey data, it was clear that Scalar's nearest conceptual neighbor as a platform was Omeka (followed closely by blogging, specifically with WordPress), and that users preferred Scalar. While Omeka was noted sometimes as better for certain types of exhibits, interviewees repeatedly noted Scalar's relatively easy way to integrate multimedia with text to create narratives around media artifacts. Even Scalar User Two, who voiced the most dislike of the platform on the basis of both usability and aesthetics, said it was an improvement on these fronts from an out-of-the-box Omeka installation.



Table 3.

Other digital publishing tools used by survey respondents

Tool	Research	Teaching	Any use
Adobe Acrobat	1		1
Audacity	1		1
Blogger	1	2	3
Box		1	1
Course management systems		5	5
Dreamweaver	1		1
Drupal	1	1	2
Easel.ly		1	1
Etherpad	1		1
Facebook	1	1	2
Google Drive	1		1
Google Groups		1	1
Google Maps		1	1
iBooks Author	1		1
iMovie	1		1
InDesign	1		1
Mozilla Popcorn	1	1	2
Netfiles		1	1
Omeka	5	3	8
PbWorks	1	1	2
Photoshop	1		1
Piktochart		1	1
PowerPoint	1		1
Prezi		1	1
Tumblr		1	1
Twitter	1	1	2
Vimeo		2	2
Website	2		2
Wiki	2	1	3
WordPress	9	5	14
YouTube	1	1	2



When discussing support for digital publishing needs on campus, whether for use of Scalar or more generally, interviewees cited a variety of partners including the

Interviewees repeatedly noted Scalar’s relatively easy way to integrate multimedia with text to create narratives around media artifacts.

campus humanities center (specifically Scalar Supporter Two), campus information technology (IT) services, the library (including Scalar Supporter One, the public-facing Digital Scholarship Unit, and a public-facing media creation unit staffed in

the library involving campus IT), unit-level or college-level technology or data services, the campus-wide teaching support center, and colleagues. Scalar User Five reported directly contacting Scalar’s developers at the ANVC for some questions about Scalar and reported a good experience.

However, despite these various sources of support, both Scalar users and supporters were concerned about the level of staffing available as digital publishing needs grew. Most commonly, their concerns centered on the availability of tech support from campus technology services or unit-level services. There were also concerns about assistance for digital pedagogy and for shaping approaches to digital publishing on campus. For these activities, interview participants saw both the library and the campus humanities center as key players. Interviewees emphasized the library as important for establishing infrastructure for sustainable digital publishing options that would offer greater assur-

Interviewees emphasized the library as important for establishing infrastructure for sustainable digital publishing options that would offer greater assurance of long-term preservation.

ance of long-term preservation. Interviewees also saw the library as a partner in digital pedagogy and helping students and faculty to understand how to conceptualize and approach digital publishing. The campus humanities center, while seen as a resource for assistance using Scalar specifically due to its partnership with the ANVC,

was more generally described as key to fostering critical conversations about digital publishing. Scalar Supporter Two noted this as perhaps the biggest reason for bringing Scalar to campus from the humanities center’s perspective. Indeed, at least two discussion groups on campus were actively talking about Scalar and digital publishing more generally, in large part due to the efforts of the campus humanities center.

Other Notable Themes

Other notable themes from the interviews involved social issues surrounding technology. Scalar User Four spoke frequently to the effect that she felt the primary challenges with Scalar were not technical but revolved around incentivizing digital publication for both students and faculty. Many humanities students may not want to deviate from traditional methods for completing essay assignments, for example, and others may not see



the point of investing time learning a platform that they may not use again. Scalar User Four successfully navigated these issues through course and assignment structures that made it worth students' time. She also reported her partnership with Scalar Supporter One in her classes as important to fostering the interest of the students and their trust in the platform because they heard about it from two different authorities, their instructor and a librarian. For faculty, she noted the importance of internal funding incentives, such as teaching innovation grants and other opportunities that would add prestige to experimenting with digital publishing.

Incentivizing is a useful frame for thinking about other issues with Scalar. The campus humanities center's focus on fostering discussion, for example, created intellectual payoff in the form of at least two discussion groups, several invited speakers, and some research projects. In short, Scalar became the gateway to a conversation on campus about digital publishing and scholarly communications in general. However, the lack of active research projects in Scalar, as

opposed to teaching projects, points to missing incentives for some participants. Scalar User Two's reluctance to use Scalar for more than a process tool is instructive: its aesthetic limitations without significant external support for Web development did not meet her sense of community standards in art history. She also

noted a lack of award structure for digital projects in her discipline, which she cited as especially conservative: "So theoretically I should not have digital publishing needs until I have a second physical, single author book in my hands." Finally, she noted a lack of trust in Scalar's longevity: both Scalar User Two and Scalar Supporter One noted concerns about preservation of Scalar books as a possible barrier to scholarship. As Scalar User Two lamented, "Lots of people's labor has gone into digital humanities projects in my field that are useless now, inaccessible, unusable." While preservation processes may be technical, the lack of clarity around permanence created an anxiety of obsolescence should Scalar not succeed beyond its grant funding. This reaction suggests preservation of new digital projects might be an important social incentive.

Finally, student privacy arose as a key concern for instructional uses of any digital technologies. Scalar User Five and Scalar User Six, in particular, noted a need to keep student coursework private and a need for "fenced in" (and, where possible, noncorporate) versions of digital tools. The reasons included not only protection of personal data but also a need to have students do digital work that cannot be made public for other reasons. Scalar User Six, for example, wanted students to be able to create simulated media campaigns using social media for business writing classes:

You can't have that stuff really go live [because it could mislead people or interfere with a real local business's marketing strategy], but you want them to share it with you, and you want them to show you how links in and out might work. And you could say narrate to me how it's going to work, which is OK . . . but really you want them to build these spaces in an online environment . . . In order to see that and have them learn from that, you have to have it be as live as possible.

Scalar became the gateway to a conversation on campus about digital publishing and scholarly communications in general.



These privacy issues raise not just problems for tool design but also challenges for how university administrative and technical structures partner with platform providers.

Study Limitations and Relevance

This study has some significant limitations. There is a lack of representation in the interviews of some stakeholders. For instance, it would have been beneficial to interview one of the respondents from campus technology, who would have added a unique perspective. There also are no student interviewees. Of the seven graduate student respondents in the survey, none participated in interviews (one volunteered but did not respond to follow-up messages). And while the interview responses indicated frequent adoption of Scalar in graduate and undergraduate classes, undergraduates were not contacted directly for this study.

Student responses to classroom use are only reported secondhand from interviews with instructors or supporters, though in a few cases, instructors did produce documented student feedback during their interviews. However, the user interviews generally represented the breadth of departments between survey respondents, and more importantly, the range of colleges expected to have significant interest in Scalar.

While this case study of institutional use of Scalar develops in-depth understanding of particular users, the findings are limited to the specific circumstances of one large public research university at a particular time, and to the people who chose to participate in the surveys and interviews. Not all those using Scalar in the classroom or for research were represented in the sample, and several participants mentioned others they knew who used Scalar. Moreover, it is important to note that Scalar is a tool with ongoing development: some of the usability issues mentioned in the study may be addressed in future iterations of the platform. Nonetheless, because many similar institutions may adopt Scalar to some extent or develop library support for other DH tools that raise similar issues, the current case study will have resonance for others and provide initial groundwork for further user studies of DH tool use.

Conclusion

From the perspective of user needs, Scalar offers functionality that would be unique in a stable of platforms supported by a library DH service. Scalar's special features might drive platform selection for baseline, low-customization services offered to an entire campus. While offering some capacities similar to either blogging (particularly with WordPress) or Omeka, Scalar was distinct enough in its options for the incorporation of media objects with text to serve some people better than those other platforms.

Despite the advantages of Scalar, some usability issues pose challenges. These challenges often bleed into broader user experience issues created by the platform's resistance to conventional writing practices. Notably, Scalar's recent marketing through social media since the completion of the interviews highlights that strategies involving prewriting and the formulation and organization of ideas prior to actual writing are appropriate or even necessary to the platform. Librarians or classroom instructors teaching with Scalar should adjust their approach accordingly. Nevertheless, teaching uses



of Scalar may offer the easiest opportunities for libraries to collaborate with instructors and support the platform.

Research uses of Scalar were scarcer and will pose more challenges for support. Yet this may be a broader issue with other innovative tools that ask users to work differently, that have usability issues to untangle, and that need to develop a preservation strategy to establish trust. For research uses, it may be especially important not to overpromote the platform's out-of-the-box options for aesthetics and functionality. Doing so risks significant disenchantment if researchers quickly run into barriers to achieving the design sophistication they had come to expect.

This study suggests how libraries might partner with campus humanities centers to foster interest in new platforms by using the platforms as an opportunity for the conversations scholars already want to have about digital scholarship. Libraries that do not have such partnerships available might consider fostering critical conversations in tandem with the marketing of digital tools as part of their outreach effort. For scholars, these discussions are a key social incentive for taking a closer look at a platform, integrating it into their classes, and considering it for their own research. These conversations may also help scholars consider how best to use the functionality of digital platforms to promote new approaches to writing.

Finally, the problems users encountered in the process of creation suggest that true usability problems may exist alongside challenges stemming from the users' employing writing processes inappropriate for the tool. To distinguish the two areas for specific user difficulties may require care. Because usability studies often start from the assumption that any problems are problems with the tool, they are likely to be a necessary but insufficient component of broader user studies examining how people use platforms intended to transform scholarly creation processes and practices.

Strategies involving prewriting and the formulation and organization of ideas prior to actual writing are appropriate or even necessary to the platform.

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Appendix A

Survey Questions

1. Please indicate your university status:
 - a. [Name of university] faculty
 - b. [Name of university] staff
 - c. [Name of university] graduate student
 - d. Other
2. What is your primary departmental or unit affiliation at the university? [open response]
3. Which of the following sessions on Scalar have you attended, if any? Please check all that apply.
 - a. One of the one-hour informational sessions introducing Scalar sponsored by [campus humanities center] in fall 2013.
 - b. One of the half-day hands-on workshops about how to use Scalar sponsored by [campus humanities center] in fall 2013.
 - c. Scalar online webinars.
 - d. An individual consultation to learn more about Scalar from someone at [campus humanities center].
 - e. An individual consultation to learn more about Scalar from someone at the library.
4. Please indicate the extent to which you have used Scalar:
 - a. I have not made any use of Scalar. [skips to other digital publishing tools]
 - b. I have created a user account for testing purposes. [skips to feature use]
 - c. I have used Scalar for my research, creative work, or teaching, including in-progress work, or I have used Scalar to support others doing such work. [to next page]

[page break]
5. Briefly describe how you have used Scalar in your research or creative work: [open response]
6. If Scalar wasn't available, how would you pursue your digital publishing goals for your research or creative work?
 - a. Does not apply—I have not used Scalar for this purpose.
 - b. I would not pursue this work without Scalar.
 - c. I would have used an alternate tool or platform (please specify): [open response]
7. Briefly describe how you have used Scalar in your teaching: [open response]
8. If Scalar wasn't available, how would you pursue this digital publishing work for your teaching?
 - a. Does not apply—I have not used Scalar for this purpose.
 - b. I would not pursue this work without Scalar.
 - c. I would have used an alternate tool or platform (please specify): [open response]
9. Do you use Scalar to support others using it for the above purposes? Support could include helping others choose, learn how to use, or implement particular digital publishing tools or platforms. It could include support for a particular project (as a project manager or graduate assistant) or systematic support for a unit or the campus.



- a. Yes, I use Scalar to support others in their use.
- b. No, I do not serve this support role for others using Scalar.

[page break]

10. Please indicate any of the following Scalar features you have used (check all that apply):

- a. Imported media from partner archives (Critical Commons, Cuban Theater Digital Archive, Hemispheric Institute [of Performance and Politics], HyperCities, Internet Archive, PLAY! [Participatory Learning and You! Annenberg Innovation Lab], VHA [Visual History Archive] Online, VHA)
- b. Imported media from a commercial cloud service (Prezi, SoundCloud, Vimeo, YouTube)
- c. Uploaded media
- d. Annotations
- e. Coauthoring with another user
- f. Custom styling (i.e., cascading style sheets [CSS])
- g. Custom JavaScript

[page break]

11. Please indicate whether you have used other digital publishing tools or platforms for research, creative work, or teaching, or if you have used them to provide support for these activities:

- a. I have not made any use of other digital publishing tools or platforms. [skip to digital projects that can't be done]
- b. I have used other digital publishing tools or platforms for my research, creative work, or teaching, including in-progress work. [to next question]

[page break]

12. What other digital publishing tools or platforms have you used in your research or creative work, if any? You may name or describe as many as you like. [open response]

13. What other digital publishing tools or platforms have you used in your teaching, if any? You may name or describe as many as you like. [open response]

[page break]

14. Do you have digital publishing projects you would like to pursue or support but cannot because you do not have access to a good tool or other method of dissemination? Projects could include digital versions of traditional publication types (e.g., journals or books) or new publication types enabled by digital tools.

- a. No
- b. Yes (Please briefly describe the publication, emphasizing the type of publication rather than the content.) [open response]

15. Would you be willing to be interviewed in person, over the phone, or online about your experiences with Scalar and your digital publishing needs more generally? (Y/N)
[Y] Please provide your name and e-mail address to be contacted for this interview:



Appendix B

Semi-Structured Interview Questions

Scalar User Interviews

1. To start off, can you please tell me about what initially interested you in Scalar as a possible tool for use in your work?
2. How well did Scalar fit your needs as you learned more and tried to use it, if you did?
3. [If actually tried using Scalar only]: What have been the easiest and most challenging parts of using Scalar?
4. Do you envision using Scalar for [other] teaching or research purposes in the future?
5. Besides any use of Scalar you have made, what digital publishing needs do you have related to your teaching and research?
6. What existing tools or platforms do you see for filling your digital publishing needs?
7. What needs are not being met by any tool or platform?
8. What sources of support do you see on campus for your digital publishing needs, and when would you go to them?

Scalar Supporter Interviews

1. To start off, how did you get involved in providing support for Scalar?
2. What kind of engagements have you had with faculty, students, and/or community members regarding Scalar?
3. What level of support are you and your organization offering? How much time?
4. What kinds of challenges have you discovered in trying to support work with Scalar?
5. What kind of feedback about Scalar have you gotten from those you have worked with?
6. I'd like to shift to talk a little about support for digital publishing on campus more broadly, particularly in the context of humanities publishing. What kind of role do you see [the campus humanities center], and humanities centers more broadly, having in digital publishing?
7. What kind of role do you see [the library], and academic libraries in general, having in digital publishing?
8. What other groups outside of [these two entities] do you see as important to providing digital publishing support on campus, including support for Scalar?



Appendix C

Totals from Closed-Response Survey Questions (Non-Demographic)

Which of the following sessions on Scalar have you attended, if any? Please check all that apply.

- One of the one-hour informational sessions introducing Scalar in fall 2013. 12
- One of the half-day hands-on workshops about learning how to use Scalar sponsored by [campus humanities center] in fall 2013. 10
- Scalar online webinars. 5
- An individual consultation to learn more about Scalar from someone at IPRH (Illinois Program for Research in the Humanities). 4
- An individual consultation to learn more about Scalar from someone at the library. 0

Please indicate the extent to which you have used Scalar through the present date:

- I have not made any use of Scalar. 2
- I have created a Scalar user account for testing purposes. 3
- I have used Scalar for my research, creative work, or teaching, including in-progress work, or I have used Scalar to support others doing such work. 15

If Scalar wasn't available, how would you pursue your digital publishing goals for your research or creative work?

- Does not apply—I have not used Scalar for this purpose. 5
- I would not pursue this work without Scalar. 5
- I would have used an alternate tool or platform. 4

If Scalar wasn't available, how would you pursue this digital publishing work for your teaching?

- Does not apply—I have not used Scalar for this purpose. 3
- I would not pursue this work without Scalar. 3
- I would have used an alternate tool or platform. 4

Do you use Scalar to support others using it for the above purposes? Support could include helping others choose, learn how to use, or implement particular digital publishing tools or platforms. It could include support for a particular project (as a project manager or graduate assistant) or systematic support for a unit or the campus.

- Yes 4
- No 9



Please indicate any of the following Scalar features you have used (check all that apply):

- | | |
|--|----|
| • Imported media from partner archives (Critical Commons, Cuban Theater Digital Archive, Hemispheric Institute [of Performance and Politics], HyperCities, Internet Archive, PLAY! [Participatory Learning and You! Annenberg Innovation Lab], VHA [Visual History Archive] Online, VHA) | 12 |
| • Imported media from a commercial cloud service (Prezi, SoundCloud, Vimeo, YouTube) | 15 |
| • Uploaded media files from my computer | 15 |
| • Annotations | 14 |
| • Coauthoring with another user | 11 |
| • Adding custom styling (i.e., cascading style sheets [CSS]) | 1 |
| • Adding custom JavaScript | 0 |

Please indicate whether you have used other digital publishing tools or platforms for research, creative work, or teaching, or if you have used them to provide support for these activities:

- | | |
|-------|----|
| • Yes | 12 |
| • No | 8 |

Do you use other digital publishing tools or platforms to support others using them for the above purposes? Support could include helping others choose, learn how to use, or implement particular digital publishing tools or platforms. It could include support for a particular project (as a project manager or graduate assistant) or systematic support for a unit or the campus.

- | | |
|-----|---|
| Yes | 7 |
| No | 5 |

Do you have digital publishing projects you would like to pursue or support but cannot because you do not have access to a good tool, platform, or other method of dissemination? Projects could include digital versions of traditional publication types (for example, journals or books) or new publication types enabled by digital tools (for example, blogs or curated digital collections).

- | | |
|-----|----|
| Yes | 7 |
| No | 12 |



Appendix D

Overviews of Individual Interviewees

Scalar User One is a lecturer in LIS and in the university's campus ethnography program. She is also an artist and a researcher of performance artists and art communities. She and co-instructors used Scalar among several other platforms in a class on feminism and technology. They ran into a number of substantial problems that she noted may have been exacerbated by attempting to use too many other different platforms in the course and by Scalar's incompatibility with some student projects. She remains interested in what Scalar may have to offer as a research platform and would consider using it for another class without the other tools—although she would want to see some improvements to usability.

Scalar User Two is a tenured faculty member in art history. She asked undergraduates in one class to use Scalar but ran into substantial barriers. Of all interviewees, she expressed the most frustration with Scalar for a broad range of usability, functionality, and aesthetic issues, and she cited general student frustration with Scalar. She did not think she would use Scalar again without substantial changes. However, she did think it had limited potential as a thinking (but not publishing) tool for her research—although some usability issues and functional needs would have to be addressed.

Scalar User Three is an archivist at the university interested in using Scalar as a digital exhibit tool. She made use of a local installation of Scalar on the University Archives servers prepared by a senior archivist to do some basic testing of Scalar. She has not yet used Scalar to create an exhibition but continues to be interested.

Scalar User Four is an untenured faculty member in media studies. She taught three classes using Scalar: one in fall 2013 and two in spring 2014. The classes were on media ethics (two sections) and food networks. She expressed the most enthusiasm about her class experiences with Scalar and felt they were successful despite a few user problems. She was the only instructor to have worked with a librarian extensively in addition to support from the campus humanities center (also interviewed: see Scalar Supporter One).

Scalar User Five is a tenured professor in the History Department. He gave his students assignments based around Scalar in one undergraduate course and felt it was successful and favorably received by students. He is also interested in Scalar as a platform option for a new advanced standing undergraduate course centered on publishing versions of historical sources with historical commentary. He does not feel he has any pressing digital publishing needs for his research, in part because he does not think he has found the appropriate mode of writing for the medium.

Scalar User Six is a lecturer in the English Department teaching primarily a mix of rhetoric and business and technical writing courses. He created multiple accounts for extensive testing of annotation functions for possible use in the classroom. However, he ultimately decided that teaching the use of Scalar would require too much class time, in part due to a complicated creation process. Usability problems with annotation posed a particular barrier. He could see pedagogical uses, but not for the classes he currently teaches: he feels it would be better suited to independent study or another, less structured, teaching context.



Scalar Supporter One is the digital humanities librarian at the institution. Contacted by three faculty members interested in classroom uses after the initial Scalar promotion on campus, she wound up working with three classes for one instructor (see Scalar User Four information for class details). For two media ethics classes, she provided a two-hour workshop and then consulted with students individually and had a shared office hour with the instructor. The third class involved more substantial involvement in a condensed course on food networks that met initially on campus before traveling abroad: the students used Scalar in a series of assignments before and during their time outside the United States.

Scalar Supporter Two is a faculty member working in the campus humanities center that brought Scalar to campus. He first used Scalar in advance of its public release at a National Endowment for the Humanities summer workshop at the University of Southern California in Los Angeles. When Scalar contacted humanities centers at a number of universities as initial partners for debuting Scalar and the local center decided to participate, he agreed to lead local efforts and help people who wanted to use Scalar. He has led campus workshops on Scalar, worked with individual classes and researchers, and serves as a contact point to provide feedback to the Scalar developers.

Notes

1. A 2014 Ithaka report provides one summary of the challenges with “boutique” projects, with the goal of producing a digital humanities (DH) sustainability tool kit. Nancy L. Maron and Sarah Pickle, *Sustaining the Digital Humanities: Host Institution Support beyond the Start-Up Phase* (New York: Ithaka S + R, 2014), accessed April 14, 2015, <http://www.sr.ithaka.org/research-publications/sustaining-digital-humanities>. See also the resources listed in the literature review.
2. Scalar’s most recent development in annotation capabilities has been the integration of Hypothes.is, an open annotation tool (<https://hypothes.is/>). This development came after the end of the present study.
3. Evan Bissell, Erik Loyer, and Andrea McEvoy Spero, *Freedom’s Ring: King’s “I Have a Dream” Speech*, multimedia interactive website (Stanford, CA: Martin Luther King, Jr. Research and Education Institute, Stanford University, 2014), accessed April 14, 2015, <http://freedom-ring.org/>. This site takes advantage of the ability to export data from Scalar and build a different site around it: that is, the data structures were created in Scalar, but the site itself was not. The degree of visual and programming sophistication of this site and other highlighted sites, and the resources required to accomplish them, are key to some of the user disenchantment discussed later in this essay. The full Scalar showcase can be found at <http://scalar.usc.edu/scalar/showcase/>.
4. Sheryl E. Reiss, *Exhibitions Close Up—Bernini: Sculpting in Clay*, multimedia book (Los Angeles: caa.reviews/Alliance for Networking Visual Culture [ANVC], 2013), accessed April 14, 2015, <http://scalar.usc.edu/hc/caa.reviews-bernini/index>.
5. “About the Alliance,” ANVC, accessed April 14, 2015, <http://scalar.usc.edu/about/>.
6. Tara McPherson, “Designing for Difference,” *Differences* 25, 1 (2014): 177–88; Tara McPherson, “Scaling Vectors: Thoughts on the Future of Scholarly Communication,” *Journal of Electronic Publishing* 13, 2 (2010), <http://dx.doi.org/10.3998/3336451.0013.208>; Ken Wissoker, “The Future of the Book as a Media Project,” *Cinema Journal* 52, 2 (2013): 131–37; Anne Burdick and Holly Willis, “Digital Learning, Digital Scholarship and Design Thinking,” *Design Studies* 32, 6 (2011): 546–56.



7. Claire Warwick, "Studying Users in Digital Humanities," in *Digital Humanities in Practice*, ed. Claire Warwick, Melissa M. Terras, and Julianne Nyhan (London: Facet, 2012): 1–21.
8. *Ibid.*, 1.
9. See, for example, Stephen Brier, "Where's the Pedagogy? The Role of Teaching and Learning in the Digital Humanities," in *Debates in the Digital Humanities*, ed. Matthew K. Gold (Minneapolis: University of Minnesota Press, 2012): 390–401.
10. Lindsay Thomas and Dana Solomon, "Active Users: Project Development and Digital Humanities Pedagogy," *CEA Critic* 76, 2 (2014): 215.
11. For example, Omeka, a DH tool tuned to creating online exhibits, has received attention in this regard. Sarah Whitcher Kansa, Nada Shabout, and Saleem Al-Bahloly noted functional strengths and weaknesses of Omeka. Likewise, Sanghee Oh, Wonchan Choi, and Silvia Valisa discuss use of Omeka for a digital project but limit evaluation to a paragraph on general ease of use and weaknesses for metadata harvesting. Sarah Whitcher Kansa, Nada Shabout, and Saleem Al-Bahloly, "The Modern Art Iraq Archive (MAIA): Web Tools for Documenting, Sharing and Enriching Iraqi Artistic Expressions," paper presented at Digital Humanities 2010, King's College, London, July 7–10, 2010, <http://dh2010.cch.kcl.ac.uk/academic-programme/abstracts/papers/html/ab-754.html>; Sanghee Oh, Wonchan Choi, and Silvia Valisa, "The Sonzogno Digital Library Project," *Proceedings of the ASIS&T [Association for Information Science and Technology] Annual Meeting* 50, 1 (2013).
12. Jason Kucsma, Kevin Reiss, and Angela Sidman, "Using Omeka to Build Digital Collections: The METRO Case Study," *D-Lib Magazine* 16, 3/4 (2010) <http://dx.doi.org/10.1045/march2010-kucsma>.
13. Anita Say Chan and Harriett Green, "Practicing Collaborative Digital Pedagogy to Foster Digital Literacies in Humanities Classrooms," *EDUCAUSE Review*, October 2014, <http://www.educause.edu/ero/article/practicing-collaborative-digital-pedagogy-foster-digital-literacies-humanities-classrooms>.
14. Allison C. Marsh, "Omeka in the Classroom: The Challenges of Teaching Material Culture in a Digital World," *Literary & Linguistic Computing* 28, 2 (2013): 280, 282.
15. Katherine D. Harris, "Play, Collaborate, Break, Build, Share: 'Screwing Around' in Digital Pedagogy," *Polymath: An Interdisciplinary Arts and Sciences Journal* 3, 3 (2013), <https://ojs.siue.edu/ojs/index.php/polymath/article/view/2853>.
16. Maura Ives, "Digital Humanities Pedagogy: Hitting the Wall and Bouncing Back," *CEA [College English Association] Critic* 76, 2 (2014): 224.
17. Tim Bryson, Miriam Posner, Alain St. Pierre, and Stewart Varner, *SPEC [Systems and Procedures Exchange Center] Kit 326: Digital Humanities* (Washington DC: Association of Research Libraries, 2011).
18. Miriam Posner, "No Half Measures: Overcoming Common Challenges to Doing Digital Humanities in the Library," *Journal of Library Administration* 53, 1 (2013): 45. For more on the collaborative model, see Bethany Nowviskie, "Skunks in the Library: A Path to Production for Scholarly R&D," *Journal of Library Administration* 53, 1 (2013): 53–66.
19. Jennifer Vinopal and Monica McCormick, "Supporting Digital Scholarship in Research Libraries: Scalability and Sustainability," *Journal of Library Administration* 53, 1 (2013): 27–42.
20. Thea Lindquist, Holley Long, Alexander Watkins, Leo Arellano, Michael Dulock, Eric Harbeson, Erika Kleinova, et al., "dh+CU: Future Directions for Digital Humanities at CU Boulder [University of Colorado–Boulder] Technical Report" (December 19, 2013), accessed April 14, 2015, http://scholar.colorado.edu/libr_facpapers/32.
21. Login issues exist due to multiple Scalar installations from the ANVC: if you try to log in to the wrong one, you get an error message that directs you to a list of candidate installations.