abstract: Researchers increasingly engage with the digital archives built by libraries, archives, and museums, but many institutions still seek to learn more about researchers’ needs and practices with these digital collections. This paper presents a user assessment study for Emblematica Online, a research digital library that provides digitized versions of emblem books from leading rare book collections. This paper examines the ways in which scholars engage with the special collections contained within Emblematica Online through analysis of interviews. The authors propose that the diverse and complex uses of digital special collections require libraries and archives to consider expanding the capabilities of their digital content and platforms.

Introduction

Digital archives today not only provide unprecedented access to rare archival materials but also enhance the exploration of these materials when integrated with tools for image analysis, data mining, and other modes of textual analytics. But assessment is a lesser known and implemented aspect of digital library development, and libraries and archives still seek ways to learn about the actual usage of these digital collections in research and teaching.

We sought to build a model for exploring and determining user needs for a digital collection through a user study of Emblematica Online, a digitization and curation project that provides access to digitized copies of emblem books from the leading rare book collections around the world. Drawing upon our analysis of how humanities scholars engage with digital content and use Emblematica Online, this paper suggests strategies...
to increase the usability of digital collections and better meet the needs of humanities scholars striving to integrate digital resources into research and teaching.

**Background**

**The Emblem Book and Emblematica Online**

The emblem book genre, introduced in the 1500s, during the early modern period, provides cultural knowledge in the form of emblems. An emblem in the canonical sense combines text and images via a tripartite structure consisting of a motto (*inscripto*), a picture (*pictura*), and an epigram (*subscripto*) to convey a particular message or theme, oftentimes regarding politics, society, ethics, or religion.1 *Emblematica Online* builds upon the bibliographic scholarship of the German literary historians Arthur Henkel and Albrecht Schöne from 1967 and on Peter Daly’s 2008 book *Companion to Emblem Studies*,2 as well as on the earlier digitization efforts of emblem books by various libraries and archives. *Emblematica Online* is a multi-institutional collaboration of scholars, librarians, and technologists to create an accessible digital library and metadata aggregation of emblem books. It is drawn from the renowned collections of the University of Illinois at Urbana-Champaign and the Herzog August Bibliothek Wolfenbüttel (Herzog August Library) in Germany. *Emblematica Online* advances access to research materials not only in emblem studies but also in many other humanities disciplines that integrate emblems in study, such as art history, Renaissance studies, history, theater studies, and literature.3 Two successive grants from the National Endowment for the Humanities (NEH) supported the project.4

**Digitization of Special Collections**

As researchers adapt to the changing digital environment, they also expect to discover and access these types of research materials on the Internet. While almost everyone agrees that observing the physical object provides the most comprehensive user experience, the consensus is that the benefits of digitizing special collections outweigh the losses that might occur within the nature of digitized materials. One notable benefit frequently highlighted in the literature is the broadening of the user base of digital collections across specialized areas of research. Peter Hirtle observes that one major change with digitization “is the appearance of new types of researchers using rare books and manuscripts . . . Our experience shows that increasing the availability of special collections material can change the audience for the particular genre.”

Digital archives today not only provide unprecedented access to rare archival materials but also enhance the exploration of these materials when integrated with tools for image analysis, data mining, and other modes of textual analytics.
using the material.” John Overholt also argues that providing better access to special collections through digitization will prompt new uses of the materials, explaining that “once freed from the confines of the reading room and transmuted into malleable digital form, we can expect an explosion of innovative uses by nontraditional users. Indeed, that process is already beginning.”

A critical concept that supports digitization of content for expanded scholarly and public usage is the idea of the “virtual reunification” of specialized archival and cultural heritage materials. Ricardo Punzalan defines virtual reunification as “the strategy of reassembling physically dispersed heritage collections to produce a consolidated, digitized representation of scattered artifacts, literary and artistic works, and/or archival records of a single origin or common provenance.” Helen Shenton argues that projects engaging in virtual reunification “not only enable the virtual reconstruction of cultural heritage but enable vastly enhanced general access and enable greatly enhanced revelation of both the intellectual and physical elements of collections.” The work of virtual reunification relies on both technology and cross-institutional and interdisciplinary collaboration. It not only merges digital materials but also provides tools to enhance discovery and access, including, Punzalan says, “hyperlinks, search and retrieval options, commentaries and annotations, metadata, descriptions of the item’s physical condition, text editing, translations, and historical narratives.” This strategy for building digital collections is oriented toward advancing scholarly research that strives to study archival materials and objects that have been widely dispersed for much of their existence.

Emblematica Online was created as the first comprehensive portal to digitized rare emblem books across multiple collections. The first phase of the research project was funded by a National Endowment for the Humanities (NEH)/DFG (Deutsche Forschungsgemeinschaft or German Research Foundation) Bilateral Digital Humanities Grant. It entailed a collaboration between University of Illinois at Urbana-Champaign and the Herzog August Library to create the OpenEmblem Portal digital library with approximately 700 digitized emblem books from their collections. The second phase, funded by an NEH Humanities Collections and Reference Resources grant, sought to expand the collections and advance the metadata aggregation with more digitized content from the University of Illinois and the Herzog August Library. The second phase also greatly expanded the breadth of the collection with added digitized holdings from the University of Glasgow in Scotland, Utrecht University in the Netherlands; Duke University in Durham, North Carolina; and the Getty Institute in Los Angeles, California. At the time of this writing, Emblematica Online contained approximately 1,381 digitized emblem books from these institutions’ collections and 28,413 individual digitized emblems.

Digital Collections and the Need for Scholarly Collaborations

A 2013 Ithaka S+R and Association for Research Libraries report on the sustainability of digital collections observes that libraries need to invest more resources in understanding their users. The report declares, “As the web only continues to grow and provide many alternative information sources for those who seek them, developing robust strategies not just for ‘passive’ discovery but for ‘active’ outreach may be called for.” Charles Henry argues for the roles of scholarly users in the development of resources, warning,
“Without the guiding voice of scholars, the tremendous effort now being devoted to digitizing our cultural heritage could in fact impede, not facilitate, future research.”

These and other similar studies call us to investigate user practices as critical aspects in the development of digital collections and resources, especially in the humanities.

Several studies highlight how scholars use digital content in complex, multifaceted ways. These studies include William Brockman, Laura Neumann, Carole Palmer, and Tonyia Tidline’s 2001 report for the Council of Library and Information Resources, *Scholarly Work in the Humanities and the Evolving Information Environment*; and *Our Cultural Commonwealth*, the landmark 2006 report by the American Council of Learned Societies on humanities and social sciences cyberinfrastructure, “the layer of information, expertise, standards, policies, tools, and services that are shared broadly across communities of inquiry but developed for specific scholarly purposes.”

Other studies are discipline-specific investigations into how scholars in particular fields, such as art history, classics, and history, develop research practices with digital collections.

Studies of humanists’ usage and needs for digital archives frequently note the importance of scholars’ expertise in the development of digital collections. Reports and studies such as the Log Analysis of Internet Resources in the Arts and Humanities (LAIRAH) project by University College London, the Toolkit for the Impact of Digitized Scholarly Resources (TIDSR) by the University of Oxford, and Research Portals in the Arts and Humanities (REPAH) by the University of Sheffield and De Montfort University in Leicester—all in the United Kingdom—have revealed a number of ways to build digital collections that reflect researchers’ work practices and scholarly needs. The usage of digital resources is key to sustaining such compilations of digital collections. As digital humanities research expands in complexity and diversity of methodological approaches, the demands on our digital collections will grow exponentially.

*Emblematica Online* resulted from a scholar-librarian collaboration and built upon a successful strategy for creating and curating digital content. As the digitization of emblem books has been pursued over the past two decades, Daly’s study and other analyses of digital emblem collections also cite the importance of librarian-scholar collaborations in the ongoing curation of digital special collections, for example, in the design, creation, and updating of descriptive metadata. In *Emblematica Online*, extensive scholar-librarian collaborations formed the cornerstone of the project. The project’s principal investigator was a tenured professor in the Department of Germanic Languages and Literatures and a leading expert in emblem studies, with library faculty members as coinvestigators across both NEH grant awards. Together the investigators focused on the selection of emblem books for digitization. They developed and applied detailed book-level and emblem-level metadata to the digitized emblems and emblem books, most notably assigning Iconclass subject headings, a classification system for art and iconography, to cataloged emblems. The process of this research highlights the essential roles of scholars in the creation and curation of digital collections such as *Emblematica Online*.

**Scholarly Curation of Digital Collections**

The role of humanities scholars in helping to cultivate digital collections is increasingly important, as digitization initiatives advance from static collections of scanned materials...
into complex research portals providing new and vitally valuable ways to interact with digitized texts, images, and media. As such, scholar-librarian partnerships are essential to the design of digital collections. Digital collections curated by research libraries and cultural heritage institutions often are motivated by preservation as well as access, but the role of digital collections in research practices today requires more than static, scanned content. Carole Palmer and Laura Neumann argue that scholarly contributions and input are particularly important for highly focused thematic digital collections. As specialized digital collections expand in content and structural design, they explain, the scholars “contribute important expertise in selection, collocation, interpretation, and integration of the sources they study.”

The need for scholarly involvement with the digitization of rare books and special collections is particularly notable. Janet Gertz argues that identifying users’ needs for digital facsimiles of rare materials and determining the added value of digitized content are critical considerations in the selection and process for digitizing content from rare book collections. She proposes that the key question to ask is, “What will be gained that will make them worth more in digital form?” User needs assessment thus is a critical factor in the development of digital collections.

Our study builds upon this previous work to examine how scholars use Emblematica Online in their research. After nearly 10 years of development, the project team built Emblematica Online into a research digital library containing a corpus of digitized emblem books from five leading research libraries, annotated with detailed metadata and made accessible via a relatively basic interface. But questions about users of Emblematica Online remained: What is needed to make Emblematica Online a user-friendly scholarly resource for conducting research involving emblem books and rare emblems? How would scholars use Emblematica Online in their research as well as in teaching and other academic activities? How should Emblematica Online be structured to facilitate these uses by students, faculty, and researchers? The user assessment study analyzed here sought to answer these questions, and on a larger level, to determine how humanities scholars draw upon digital collections to deepen or enhance their research and teaching.

Context: Use Cases

One key set of materials that framed our work consisted of five use case letters that were submitted by scholars in support of the second phase of Emblematica Online. These letters from faculty in multiple fields, including art history, Renaissance studies, and musicology, described their uses of the digital collections and Emblematica Online for their research and teaching.

These five use cases revealed insights into the user practices of humanities scholars who utilize specialized digital collections in their research. We analyzed the use cases employing a codebook and content analysis. Several themes emerged in this analysis

The role of humanities scholars in helping to cultivate digital collections is increasingly important, as digitization initiatives advance from static collections of scanned materials into complex research portals.
around the research methods with Emblematica Online as well as with digital collections as a whole, around discovery and access functionalities to navigate and use digitized archival materials, and around scholarly needs in utilizing digital collections.

The use cases revealed the variety of methods that scholars use to engage archival materials and digital content in their scholarship. One scholar observes that digital collections such as Emblematica Online maximize research capacity and efficiency, noting, “The project goes beyond merely digitizing books and making them available online; it also makes an enormous corpus of these sources searchable and almost instantly comparable.”

Another respondent noted that Emblematica Online’s content has significant implications for how we construe, work with, and develop humanities data:

The digitization of the emblem corpus in its entirety—something that may be feasible within the relatively near future—offers the prospect of giving scholars a uniform standard corpus with which to work: this makes possible, for the first time, reference to a body of data that is the same for all scholars, thus enabling scholarly hypotheses to be readily tested not only by the original author but by many others.

The potential of digitization and metadata applications available in Emblematica Online to advance how we build and curate humanities data holds rich possibilities. The transformation of archival content into data that can be utilized across disciplines in a multitude of research investigations holds promise that digital collections such as Emblematica Online can reach beyond static interactions with users to generate transformative research outputs and support new modes of scholarly communication.

Another key theme was the need for scholarly expertise to enhance digital collections. As one scholar observed:

One feature researchers will particularly appreciate is having rich metadata and indices for searching out themes as well as individual emblems. I currently use several digital databases for research . . . I recognize how much effort it will take to create the metadata. This also requires those skilled not just with the computer but with languages and the culture of the early modern era as well.

This integration of scholarly expertise with the development of database infrastructure and content creation is critical for effective development of digital research resources that reflect scholarly needs and have a higher chance of becoming part of the research practices of scholars.

Methods

This user assessment study incorporated multiple sources of data. One of the authors, Harriett Green, first conducted individual interviews with humanities scholars at the University of Illinois and at the Herzog August Library and with attendees at the Society for Emblem Studies triennial conference at the University of Kiel in Germany. The interview participants were selected through a targeted recruitment of scholars who had corresponded with the grant project investigators. The authors also worked with the Emblem Studies conference organizer to coordinate a general call for participants to all conference attendees. This was a qualitative study that sought to gain insights into
how humanities scholars engage with digital content and pursue digital scholarship. A carefully targeted pool of scholars known to have experience or familiarity with Emblematica Online were recruited for the interviews. To complement this pool, we conducted usability testing sessions that included pretest and posttest interviews with humanities scholars deliberately recruited for their limited experience with Emblematica Online, which allowed us to have a fuller range of experiences and disciplinary areas of study to analyze the usefulness and usability of Emblematica Online.

Eight scholars in disciplines ranging from musicology to art history to literary studies were interviewed about their research with digital collections and with Emblematica Online. The interviews focused on the scholars’ experiences with digital collections for research purposes. The conversations also explored scholars’ specific uses with Emblematica Online, including the scholars’ familiarity with the site, benefits, challenges, pedagogical uses of digital materials, functionalities expected, and the potential impact of Emblematica Online in emblem studies as well as in their diverse disciplines.

The responses from the interviews helped to shape the user testing protocol for the subsequent series of user testing sessions with humanities researchers to test the original Emblematica Online website. For the usability testing of Emblematica Online, five scholars—three graduate students and two faculty members—participated in one-hour user testing sessions in a usability lab at the University of Illinois Library. The scholars’ research areas spanned early modern studies, Renaissance studies, theater, English literature, and emblem studies. The sessions consisted of a 10-minute pre-interview, up to 30 minutes of user testing exercises with the Emblematica Online portal, and a 15- to 20-minute post-interview. The pre- and post-interviews asked about the participants’ uses of digital collections, their work with Emblematica Online, and the benefits and challenges of working with digital content.

We recorded, transcribed, and hand coded all 13 interviews. Grounded coding theory guided the development of a codebook for qualitative content analysis of the interview data. Both authors separately coded the transcriptions, and then reviewed and reconciled the coded interview responses for inter-coder reliability. We analyzed the interviews for prominent themes regarding the humanities scholars’ usage of Emblematica Online, research practices with digital collections, and how digital content impacts both research and teaching practices in the humanities.

Data Analysis

The research goals for this user assessment study were

- To learn how Emblematica Online and similar digital archives are integrated into the research workflows of scholars in early modern studies and other disciplines that draw upon emblem books for research;
- To gain deeper understanding of the research practices of humanities scholars with digital content in specialized collections; and
- To gather input from researchers to assess the new functionalities and services added to Emblematica Online and to determine future functionalities that could further enhance the portal.
The questionnaire protocols used for the interviews and user testing interviews differed slightly (see Appendix A and B).

Interviews

Our analyses of the participants’ responses about their work with digital content and with digitized emblem books as resources for research and teaching revealed that humanities scholars engage with digital collections in diverse and rich ways that stretch beyond simply viewing digitized copies of the rare emblem books. The responses by the interviewees reinforced that humanities scholars engage in a range of research practices with digital collections, and that their interactions with special archival collections such as Emblematica Online frequently generate dynamic and diverse workflows between the print and digital archives.

Integration of Digital and Traditional Print Scholarship

All respondents were scholars in humanities disciplines, with many focused in early modern studies. For most, their research practices were deeply rooted in print archives and special collections. As one scholar explained, “There’s a kind of aesthetic appeal which you can’t reproduce on the screen, and that’s really not to do with the quality of the scholarship that comes out of it, but you know it’s the contact with the books [which] is I think the reason why most of us got into this field.”

The interweaving of print and digital sources figured prominently in many respondents’ research practices. One respondent commented:

On one hand, better more precise searching capabilities are what we all want, but I also, you know, as an old-school person, I’m attached to the kind of random accident, unexpected aspect of research and, you know, when you go to the stacks you’re looking for your particular book, but your eye falls on this other one two books over.

This mixture of browsing and precision searching across both archival and digital content is characteristic of humanities scholars’ documented practices of wide reading, “chairing” of materials, and exploring collections in the research process.22

The scholars integrated the digital collections into their research workflows in various ways. Many respondents used the digital collections in familiar patterns to support citations, to find materials, and to analyze as another primary source for their research, in disciplinary areas ranging from Shakespeare studies to architecture to music history. But a notable finding beyond these familiar patterns of use was how the collaborative nature of Emblematica Online’s digital collections, as it evolved from a two-partner to a six-institution joint collection, was critical to advancing scholars’ research through access to multiple archival collections in one search. As one respondent explained:

Just to be able to compare, to have all of these collections at your fingertips is just amazing. For example, when I was doing that conference paper, I knew what the image looked
like from this book, when it was published in the first half of the sixteenth century; but then to see all of them and to find an image that I didn’t know even existed—that was so key to what I was doing.

The practices of wide-ranging archival research and interdisciplinary investigations across multiple collections were core to scholars’ expressed needs, and Emblematica Online was highlighted for its interdisciplinary scope.

Interdisciplinary Scholarship

As one scholar described the content of Emblematica Online, “It just reaches so broadly across disciplines of any kind of cultural studies of pre-modern Europe.” In considering the potential for Emblematica Online to influence specific disciplines as a resource, several scholars predicted that it would bring broader exposure to the field of emblem studies. A number also noted that the accessibility of multiple collections of emblem books enabled unprecedented comparative analysis and access to these archival works. One faculty member observed, “They touch so many different kinds of research, they combine word and image, we have this world class collection here, linking it to the other important collections is just, such a key step, and it’s so cross-disciplinary. So, I think it’s a great test case for what digitization can make possible for researchers.” Some expressed the desire to incorporate the emblems as new modes of analysis of visual culture in their scholarship.

Course Instruction Use

The respondents reported that digital collections were becoming increasingly integral in their classroom teaching as well as in their research. One respondent noted that Emblematica Online’s content “could be well used in the classroom, even with undergrads . . . It’s hard to maintain their attention, but to me, always presenting them an image always gets their attention. So instead of presenting a text or a musical piece, it works really well.”

In particular, scholars can implement innovative pedagogical practices with access to digital collections such as Emblematica Online. Respondents observed that the resources provided by Emblematica Online could be valuable for teaching students how to integrate visual and textual analyses. As one respondent noted, “I can see this being useful as a starting point for research papers, how to use research resources that aren’t articles, how to close read and engage with an object that isn’t necessarily a book.” The use of digital content was key to the researchers, as they and their students drew upon digital content as primary sources and applied various methods of comparative analysis according to their disciplines—from music to literature to art history—that engaged the visual aspects of the materials as well as the text.

Discovery and Access: Challenges and Needs

The suggested functionalities for Emblematica Online as a specialized digital collection would enable scholars to go beyond simple searches to manipulate and analyze digital materials in complex ways. One ability that scholars sought was comparative analysis. As one respondent explained:
It would be interesting if the way that the images were digitized, I could sort of pull them out and compare them, sort of side by side. I think also, having the printers catalog, would be a great tool, because then you could keep track, in a sense, of whether certain printers have an interest, or are prone in certain kinds of emblematic works across literary visual culture.

The desire of researchers to work with digital content in diverse ways, as described by this respondent, increases as more and more humanities scholars pursue cross-disciplinary research. These transformations in humanities research practices underscore the need for digital collections to have capabilities beyond static views of the content.

The scholars also encountered challenges in navigating content in *Emblematica Online*. As one respondent commented:

On one hand, I felt I could pretty well get to what I needed, but it was a little more arduous than I would have liked. So, I think one thing that would impact my use of this, particularly for teaching, would be a kind of smoother path, to this emblem in this book or this motif compared across multiple sources. So, more smooth integration of the entire body of material would of course be great.

This highlights another scholarly need: Scholars expressed the desire for interoperability of digital collections with other repositories of digital content, as they sought to build intellectual arguments that drew upon multiple research resources. As Brockman, Neu-mann, Palmer, and Tidline note, humanities scholars continuously draw upon multiple sources in their research and build a diverse archive of print and digital content.23

Discussion

What do these responses reveal about humanities scholarship with specialized digital collections? We propose that three key factors in the humanities scholarship ecosystem should be noted in the development of specialized digital collections and research portals: (1) the research practices of humanities scholars, (2) the facilitation of interdisciplinary scholarship, and (3) the impact of virtual reunification on humanities scholarship.

Humanities Research Practices

While humanities scholars still engage in serendipitous browsing and seek this functionality in digital collections as much as in the physical library stacks, they also view digital collections as an essential part of their work with archives. One faculty member commented, “We’re increasingly attracted to and depend on and have wonderful new opportunities of working with this material in digital formats, and because it does help preserve the actual material books, but it’s nice to be reminded of that materiality in the way it’s presented visually.” This observation attests to scholars’ need to retain the connection between the digital facsimile and the original material. This need to engage with the detail of the physical book while taking advantage of the malleability of digital files reveals the research practices and needs of humanities scholars today as they interact with digital collections.
Interdisciplinary Scholarship

Digital collections can expand scholarly boundaries both in a single field and across disciplines. In the case of Emblematica Online, several respondents cited its rich potential to serve as a conduit for opening up the field of emblem studies to a far broader audience of students and scholars.

Several respondents also noted the influence that specialized digital collections such as Emblematica Online can have in recalibrating certain scholarly research practices, as scholars overcome previously daunting challenges in accessing archives and engage in interdisciplinary work using diverse archival materials such as emblem books. Moreover, they discover content that they otherwise would not have considered, due to the improved access to multiple types of archival materials provided by digital collections.

Emblematica Online and the Impact of Virtual Reunification

Previous scholars have established the value of collating dispersed cultural heritage and archival collections through digitization and the creation of online portals, and our study further reveals that the impact of such collation is evidenced in the users’ expressed needs and the research practices they pursue with these materials. Users seek distinct ways to interact and utilize materials in digital special collections for research, teaching, and producing scholarly outputs. Emblematica Online is a fitting example of virtual reunification in that it is a collaborative project that brings together archival materials and produces a new level of engagement. Punzalan observes the virtual reunification projects are notable in that “following such scholarly traditions, virtual reunification exemplifies new modes of publication and collaboration. Digitizing artifacts and literary or artistic works and subsequently making them accessible over the Internet is becoming a platform for inter-institutional cooperative endeavors.”

Many respondents attested to the value of Emblematica Online as a tool for expanding scholarship, including one scholar who said, “It provides electronic access to a wide variety of emblem books and iconographical treatises that years ago were only available at special collections. This democratization of knowledge, combined with its immediate accessibility, is an essential tool in the study of emblem forms.” This increased accessibility to rare content is a critical factor in the rationale for digital collections, but in addition, the needs of users must be taken into account to develop and curate digital collections with content and functionalities that most effectively serve scholarly needs.

Scholarly expertise is particularly critical in the virtual reunification of specialized collections. As one scholar noted:

There are digital databases for the humanities that have been designed by computer experts, and they can be less useful simply because those guiding the production of the database may have the technical skills but not the linguistic, literary and historical knowledge to make these sources easily accessible to researchers.
Recommendations and Conclusion

The needs of interdisciplinary scholars are complex as they take advantage of easy access to vast digital collections of content. The knowledge base from which scholarly users approach digital collections can vary widely, especially when considering interdisciplinary uses of a digital collection. Effectively structured digital collections must incorporate user experience principles that enable researchers to interact with the collections at various levels and perspectives. Structured evaluations of users’ experiences with a digital collection’s interface and functionalities are a critical tool for effective redesign of the functionalities and interface of the digital collection.

Our interviews and user testing provided key insights that influenced the final redesign of Emblematica Online (see Figures 1 and 2). While the interviewed scholars praised the content available in Emblematica Online, they also observed that navigation of resources within the portal was sometimes cumbersome and could be improved. Interviewees also suggested features that could improve the user experience such as interoperability with other digital portals. These suggestions allowed the project team to integrate features, such as utilizing Iconclass headings as access points to other digital collections. For example, the Iconclass headings provided links to the Virtuelles Kupferstichkabinett (VKK or Virtual Print Room), a database of descriptions and illustrations of prints and drawings from the Herzog Anton Ulrich Museum Braunschweig and the Herzog August Library in Wolfenbüttel; and to the Festkultur (Festival of Culture), a collection of digitized prints from the Herzog August Library. These comments also enabled the project team to revise the website’s navigation mechanisms that were not utilized and sometimes caused confusion. For example, the team created a more obvious system of navigating between a book and its emblems or the previous search results list.

At present, the Emblematica Online website receives a steady stream of visits. In a raw sample of September through December 2016, Google Analytics recorded approximately 2,500 new sessions and 21,278 total page views overall, although full filtering for the researchers’ IP (Internet protocol) addresses was not applied to remove duplicate views.

While this study is not statistically generalizable, we believe our analysis reveals three key principles to consider for curating specialized digital collections with a user-focused strategy:

- Enhanced discovery and accessibility: Making the digital content as accessible and open as possible is important. We found that a key facet of scholarly use of digital resources is the ability to access a wide range of content. This facilitation involves factors such as consistent metadata, usable file formats, and enabling optimal search mechanisms for discovering and exposing content to users. Emblematica Online’s use of Iconclass and connections to the Virtuelles Kupferstichkabinett are notable steps in this direction.
Interoperability: Scholars also seek ways to interact with multiple collections within a unified research environment, which could range from searching and collating content from multiple digital collections to the ability to incorporate digital content into a tool or platform of their choosing. Cross-institutional collaborations are the cornerstone of the development, growth, and sustainability of Emblematica Online, and we propose that libraries and archives more strongly consider multi-institutional collaborations for building and curating digital collections.
Interactive-centered curation: The desired capabilities expressed by scholars in this user assessment study to conduct comparative analysis of content, actively working with digital content across multiple digital collections, and to export content for teaching and research speak to a need for capabilities for greater interactivity with digital collections.

The findings of our exploratory study reveal the ways in which Emblematica Online and similar specialized digital collections potentially enable transformative shifts in research and teaching for humanities disciplines. This investigation also highlights that it is more important than ever for the development of digital collections to be a partnership between scholars and libraries. Libraries’ digital collections can continue to play critical roles in the advancement of humanities research, but we argue they must have enriched functionalities that expand their capacities far beyond basic search and retrieval of digital content.

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Appendix A

Interview Questionnaire

1. What is your position and research area?
2. How have you used digital content in your research, if at all?
3. What is your level of familiarity with Emblematica Online?
4. If you have used Emblematica Online before, please describe your work with it.
5. If you have not used Emblematica Online before, please explain why?
6. What are or could be the general benefits of using a digital resource such as Emblematica Online?
7. What are or could be the challenges of using a digital resource such as Emblematica Online?
8. How might you use Emblematica Online in your teaching?
9. How might your students make use of the content and functionalities in Emblematica Online?
10. What functionalities are most needed for you and/or your students to work effectively Emblematica Online? They can be functionalities that exist in the portal now, and should continually developed; or new functionalities and services to add.
11. What are the ways that Emblematica Online could impact your research work and/or your field?
12. How do you see the field of emblem studies and/or Renaissance studies being influenced by a resource like Emblematica Online?
13. Do you have other thoughts about Emblematica Online and/or digital humanities resources in general that you’d like to share with us today?

Appendix B

User Testing Interview Questionnaires

Pretest

1. What is your position and department(s)?
2. Please describe your research area and interests.
3. Why were you interested in participating in this testing session?

Posttest

1. How have you used digital content generally in your research, if at all?
2. What types of functionalities, tools, and services would make digital collections maximally useful for your research?
3. What were your first impressions of the Emblematica Online website?
4. What were the primary challenges of using the Emblematica Online portal?
5. What do you see as the potential strengths of the resources provided by Emblematica Online?
6. How might you use a resource like Emblematica Online in your teaching, if at all?
   a. How could your students make use of the resources in Emblematica Online?
7. If you had a “magic button” that could make any changes you wanted, how would you revise Emblematica Online to do what you need?
8. Do you have other thoughts about Emblematica Online, digital collections in general, and/or digital humanities tools that you’d like to share with us today?

Notes
9. Ibid., 298.


