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Guest Editorial

The Evolution of Library Workplaces and Workflows via Generative AI

Mohammad Hosseini and Kristi Holmes

ChatGPT was released on November 30th 2022, and very quickly popularized generative artificial intelligence (AI) to the extent that it is now seen as a mainstream technology and used by many. However, this mainstreaming and popularity has also resulted in a hype, thereby overwhelming us by a wide range of opinions and news related to its current and future applications. While we can test generative AI applications and read news about their added value, it might be hard to envision the short-, medium- and long-term impact of these tools on library operations, resources, and services.

Reflecting on how libraries and their existing workflows are evolving alongside the rise of generative AI is intriguing, yet extremely challenging due to the rapid development of the technology. This is further complicated by the variation across each library's organization, management, and use. Indeed, even two libraries in the same institution might have a different approach regarding collection management, curation, user engagement, and technology integration. These differences can be further amplified by library size, disciplinary focus (e.g., university library, medical library, law library), services offered (e.g., education and training, evaluation), communities served (e.g., students, medical trainees, researchers, faculty, public), overall approach to technology, as well as their budget. Each library is made up of several units with specific goals and responsibilities. The same technology may have a different impact on each department of a library, as well as each employee, depending on their role and background. As a result, despite various opportunities and challenges presented by generative AI, librarians should consider charting their own personal roadmap to learn about and familiarize themselves with this technology based on their unique circumstances, interests, and needs.

To understand the perspectives of different libraries and librarians on this journey, we had short conversations about generative AI with eight individuals who are involved in various roles in different libraries. Across these different libraries and roles, there were several consistent themes. Everyone noted the importance of keeping up to date about this technology and understanding opportunities and challenges. All individuals we conversed with were aware of so-called hallucination problem in generative AI (generation of nonsensical or untrue content) and biases embedded in these systems, but stressed that libraries should learn about this

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technology and use it to their benefit. When asked about current use cases, opportunities, and challenges, we heard a range of responses that reflected perspectives and experiences of each individual, closely tied to their specific context and roles. A summary of these views follows.

How Generative AI is Currently Used in Libraries and What Are Some of the Potential Opportunities and Concerns?

Those who contributed to the educational mission of libraries considered opportunities in terms of improved lesson planning and retrieving better examples or ice breakers for patrons. Nichole Novak, the Head of Reference and Instruction Services at Galvin Library at Illinois Institute of Technology and her colleagues have experimented with the free version of ChatGPT to kick-start their thought processes for lessons and help draft scripts for videos. Although they noticed that the generated content needs further refinement and editing, using ChatGPT helped them to not start from scratch. Nichole shared that she has heard AI being used for basic reference questions too. In addition to her concerns for the quality and accuracy of these AI-mediated references, she was worried about losing the human connection with patrons:

> *A reference interaction is a good moment for making a connection with your patron, putting a face on the library, and also an opportunity to teach them how to access a database and search for resources. A library is much more than its collection, it's a space for patrons to interact, learn and build a community. In this sense, AI lacks the welcoming presence of a librarian who knows our library.*

She also raised concerns about students using generative AI to do assignments:

> *We didn't see a lot of it but we have had instances. The goal of completing assignments is for students to learn. When they use these tools, they don't learn about information retrieval, and how to find and use reliable sources. Until recently, students and researchers would visit websites, and based on how the landing page of a website looked (e.g., the number of pop-ups and broken links, or URL), they would get a quick sense about validity or reliability of information. But ChatGPT presents information (true or false) in a sanitized manner without letting them do the evaluation or know anything about the used sources.*

Molly Beestrum, the Head of Research and Information Services at Galter Health Science Library at Northwestern University echoed similar views about students who have used ChatGPT to do their assignments. She has used the free version of ChatGPT to generate examples that would be understandable for students or researchers at a certain level (e.g., first-year medical students) or summarize text from a critical appraisal perspective. She emphasized that she does not use the generated content nor fully trust it before verifying it through several reliable sources because of the hallucination problem. She added that this critical attitude is absolutely necessary when working with these systems but might not always be employed:

> *Students and early career researchers might not know enough to understand if the generated content is actually true or not. I worry that generative AI is going to be used as an*

information retrieval tool. At the moment, even a search engine like Google is better than ChatGPT in that respect.

She further highlighted that these systems could be a massive timesaver for writing, and could level the playing field for those studying and working in a second language, or those who might not have a great command of grammar or spelling. She believed that libraries should not stress out and instead, investigate how their patrons are using these tools, to understand the benefits and limitations of specific use cases. She acknowledged that given the current pace of information transmission and dissemination, "humans cannot keep up," and this necessitates leveraging new tools:

I think Generative AI tools might have a good potential for systematic reviews in the future. We just need to figure out the best way to do this. For example, when doing systematic reviews, we ask researchers to suggest studies that they think should definitely be included in their sample. We have received several fake citations recently, which, after further investigation, were found to be generated by ChatGPT. One major concern is to have these hallucinated citations get into our papers and studies.

Another librarian who spoke with us was Amy Chatfield, an Information Services Librarian based at the University of Southern California. She also highlighted the potential of using these tools in systematic reviews, when screening for evidence, and added:

Currently, models like ChatGPT do not have access to the full text of most articles. We can train them to become better in one task but that takes a considerable amount of time and resources, without necessarily making the model useful for other tasks. Accordingly, with some tasks it would make more sense to do it ourselves instead of trying to program a model.

Even in the case of tasks that have been automated for a long time, she thought, human contributions add value to what computers can do:

For instance, we do not do so much indexing anymore because computers are perceived to be better at it. But when a computer indexes, it searches for words, characters and letters. Humans are needed to tell AI, 'hey, epilepsy and epileptic are in the same domain, so put them together.' This is easy, but it is much harder when you try to teach AI something like 'here's an article that's talking about how to transition someone from carbamazepine to valproic acid'. The article might never mention the word epilepsy anywhere because everyone reading that article already knows these drugs are used to treat epilepsy. Since there are a lot more context clues behind the scenes than people might notice, training AI for each specific context and situation might take a lot of time and resources.

Amy has tried both free and paid versions of ChatGPT, Google's BARD and the AI-powered version of Bing search engine. She was concerned that generative AI might be used to cut out humans from the research process, because:

There are many parts of librarianship that people consider as rote and easy and simple, that actually turn out to be not that way. Let's consider search strategy development as an example. There have been experiments to train AI to come up with a sensitive and well-done search. However, those who train AI may not know what a good search actually is. So, they come up with something that looks beautiful but is not as comprehensive as what librarians would develop using manual searches. Computer scientists who build these models do not want to believe that every single article and abstract is not similarly structured and might not contain the same information in it. Sometimes we are dealing with three or four levels of abstraction and AI cannot always be trained to handle these.

Despite these shortcomings, Amy thought that some might be happy with what AI does because completing searches by humans is tedious and difficult. She added that addressing these challenges and improving workflows that integrate human and AI capabilities require a better interplay between computer scientists and librarians. She highlighted the significance of hiring computer scientists in libraries, like those who can code or train large language models.

Bart Davis, the Head of the Collection Management and Metadata Services department at Galter Library has discussed the use of generative AI with his department but due to concerns around accuracy, they have not used this technology to create any metadata:

We need to spend time and resources to program a model but if it ends up generating inaccurate metadata, that creates a lot of additional work for catalogers. We are hesitant to jump on the bandwagon of generative AI right now to create metadata because it is not fully tested for our context, but I can see some libraries or vendors embracing it in the future. Either way, clear disclosure and labeling of AI-generated metadata, followed up by human validation are absolutely crucial.

Since Bart has some programming skills, he currently uses the free version of ChatGPT to boost his capabilities in writing code and to generate Python scripts for standard and repetitive tasks, which he can then verify. He also envisions having AI as a cataloging assistant:

Especially if they could be integrated into library management systems; suppose you create a record and then AI pops up and says 'hey, maybe consider this subject heading, or maybe update this old record based on how you have recently indexed or cataloged items.'

Using AI to enhance coding capabilities was also highlighted by Matt Carson, Senior Data Scientist and Head of the Digital Systems at Galter Library, who is responsible for Galter's library system infrastructure, as well as several different technical and data-oriented research projects. Given his management responsibilities, Matt infrequently codes and appreciates reminders about how a certain function works. He has used ChatGPT to find examples, document code, and add comments to existing code, as well as generate random data sets to test his code. Since Matt uses the paid version of ChatGPT, he can also install third-party plugins to improve the efficiency of his personal knowledge management through gathering information faster and summarizing it. He added:

I think off-the-shelf generative AI models are going to improve through these third-party plugins where developers have really focused on one aspect, and continuously improve it for better accuracy. These plugins will be an asset for librarians and researchers, and libraries should embrace these types of tools.

Matt asserted that AI tools are neither going to replace researchers nor librarians, but those who fail to learn about and incorporate these tools in their daily workflows may find themselves outperformed by those who have embraced it. Brendan Quinn, Senior Developer at Northwestern University Libraries in Evanston, Illinois relates:

Developers in my team have adopted the use of GitHub Copilot (powered by OpenAI's GPT-4) for all day-to-day programming. Using GitHub Copilot is a bit like having a coding partner beside you at all times.

Brendan shared details about their prototype which takes advantage of generative AI to develop an application for discovering information about their digital collections by chatting with a generative AI model. The prototype takes a user's question and performs a vector database query that retrieves documents based on how closely they match the question semantically. The application then sends the question and retrieved documents to the generative AI model, which provides a response grounded on the data contained in those documents. They are also experimenting with hybrid search that takes advantage of the precision of traditional keyword-based search and the semantic understanding provided by vector search capabilities. While he called generative AI the biggest game-changer he has witnessed in terms of using new technologies in libraries, he also shared concerns regarding misconceptions surrounding this technology:

I spend a lot of time explaining to folks that generative AI is neither connected to, nor works like a database – it is not like a dictionary or encyclopedia that has the data inside of it. Therefore, we should treat these more like systems that make mistakes similar to those made by humans. When I speak with a person, I do not automatically assume that everything they said is correct, factual and true. I adopt a similar approach when engaging with generative AI, take it with a pinch of salt!

These misconceptions were also echoed by Bianca Kramer, former scholarly communication and open science librarian at Utrecht University in the Netherlands, currently a consultant at Sesame Open Science. She stressed that assuming everything done by humans is the gold standard can be misleading, because we are all biased and make lots of mistakes. Therefore, thinking about how humans and technology can complement each other would be more beneficial. She was concerned that systems like ChatGPT give the impression of an authoritative source without having or claiming any authority. Given the current trend in using them, she expressed concern:

At some point, AI-generated sources will become the source. It will be interesting in the next decade to see what will happen to primary sources, and to what extend they are going to be replaced by sources generated by AI.

Jeroen Bosman, an open science and scholarly communications specialist at Utrecht University believed that the future applications of generative AI in libraries and society depend on many factors:

> *Besides depending on how they will develop in a technical sense, we still need to see how they will be embedded in our social and legal contexts. They can be a real timesaver for some tasks and can increase interdisciplinary relations. On the flip side, they will amplify the mainstream perspectives and could have a detrimental effect on critical thinking skills.*

Jeroen recommended that libraries should adopt a balanced approach and move slowly, through small-scale implementations. While he encouraged librarians to test these systems, he also invited them to adopt a critical approach towards using them, e.g., learning how to refine and evaluate their own prompts. He added that this approach is used in Utrecht University's information literacy program and new workshops that aim to explore the impact of generative AI on the information landscape:

> *For centuries we collected information packaged in concrete items written by someone or a group. The onus was then on the user to extract relevant information and insights from these packages. Thanks to the internet and advancements in communication technology, we have so many of these packages to unpack and explore. This has made us realize that our existing information retrieval paradigm is extremely inefficient and generative AI might help us. However, it is very important to realize that there are different streams, approaches, visions and ideologies within societies, all of which are embedded in those separate concrete information packages. And we might lose those nuances or the ability to use a dialectical approach if we just have sort of one answer from the machine for everything.*

A similar apprehension was voiced by Verónica Hoyo, Executive Director of the Network of the National Library of Medicine (NNLM) National Evaluation Center (NEC), based in Northwestern's Galter Library. The NEC is charged with assessing NNLM activities, services, and resources with special focus on understanding its impact on persons who experience health disparities or are underrepresented in biomedical research. She has used the free version of ChatGPT as a sparring partner (to improve surveys and challenge her own biases) and highlighted that while these models might get better in the future, they have inherent shortcomings:

> *These models are currently not representative, because the data used to train them have not been representative. Although the training data of these models have not been disclosed, given that access to technology is already unequally distributed and data from substantial sections of the population are missing in our corpus, one can infer that these models have major limitations and gaps.*

Conclusion

Libraries play a central role on campus and will remain an indispensable partner and catalyst for universities' research and educational endeavors. Therefore, it is no surprise that libraries are actively guiding the consideration and use of generative AI on their campuses. On this journey, libraries will develop strategies to responsibly leverage generative AI technology while carefully managing risks. Generative AI is evolving at a rate rarely seen before, making it difficult to anticipate every challenge and develop comprehensive and consistent policies in response. By sharing different perspectives across different roles, geographies, and types of libraries, we can learn from one another, adjust strategies and services, and inspire new partnerships and opportunities for generative AI and other technologies to support and advance the work of our libraries.

To capture a diverse spectrum of opinions and use cases of generative AI in libraries, we engaged with four individuals from Galter Health Sciences Library at Northwestern University (Chicago, Illinois), one from Northwestern University Libraries (Evanston, Illinois), another from a different university in Illinois (Illinois Institute of Technology), another from a university in California (University of Southern California), and two librarians based in Europe. This approach allowed us to start with our own context and then step beyond our local environment to obtain a more nuanced perspective. These responses not only showcased the multifaceted nature of generative AI but also highlighted the unique ways in which it is being leveraged and perceived within the library community. The breadth of insights gathered underscored the evolving narrative of generative AI in libraries.

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Once You Get Tenure, You're on Your Own: Mentoring and Career Support for Mid-Career Academic Librarians

Jennie Gerke, Juliann Couture, and Jennifer Knievel

Little research exists that evaluates the existence and importance of mentoring for academic librarians with faculty status who have already achieved tenure but have not yet been promoted to a more senior rank, such as full professor or full librarian. This study represents the second of a two-part research project seeking to better understand the existence and accessibility of mentoring, career planning, and other supports for mid-career, tenure-track librarians. The authors conducted seventeen structured interviews with individual librarians who were at associate or full professor/librarian rank with tenure in order to gain insights into these questions. Analysis of the interviews identified several areas of support and guidance that are of particular importance for promotion and career growth for mid-career academic librarians: Criteria, Mentoring, Process, and Responsibilities.

Introduction

The importance of mentoring for the success of academic faculty and librarians has been widely demonstrated, mostly focused on early career success and tenure-track faculty.[1] Librarians inhabit many different roles and ranks within the academy, and institutions of comparable size and focus do not necessarily place librarians in the same place in their hierarchies.[2] Tenure-track faculty positions are not inherently superior or inferior to non-tenure-track faculty positions or staff positions for librarians. Regardless of their job classification, librarian positions often come with dramatically different sets of expectations and criteria for success. Due to these drastic differences, tenure-track librarians face particular barriers to success in this type of role. The authors sought to better understand the existence and accessibility of mentoring, career planning, and other supports for mid-career librarians. Additionally, the authors sought to better understand how mentoring and other career supports influenced the promotion and career growth of mid-career librarians. Mentoring and career support take many different forms and might include both formal and informal mentoring, official and unofficial professional support, and coaching for career planning and professional development. This study represents the

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second of a two-part research project seeking to gain insight into the questions of mentoring and career support for mid-career librarians.

The first part, reported in Couture et al., described the responses to a targeted survey delivered to mid-career librarians, investigating their access to mentoring and career planning, as well as their intentions for seeking additional promotion.[3] That study found that mentoring became significantly less available to librarians after tenure, but that those librarians still felt the need for mentoring. Librarians reported substantial changes to their workloads, expectations, and Ross post-tenure career directions. The survey also measured factors influencing whether librarians were seeking further promotion. Those factors fell into the categories of financial, political, workload, work/life balance, and procedure/process. The survey identified relationships between the availability of mentoring and individuals' intention to pursue promotion, identified that unclear promotion guidelines have a depressive effect on librarians' intentions to seek promotion, and suggested that men are slightly more likely than women to pursue promotion.

This study represents a follow-up analysis related to the initial survey, in which the authors conducted seventeen semi-structured interviews of survey participants in order to more deeply understand the factors influencing promotion for mid-career librarians. In these interviews, participants discussed their professional experiences and access to mentoring or other kinds of post-tenure professional support. Four primary themes arose from these interviews: Criteria, Mentoring, Process, and Responsibilities.

Literature Review

There is a wealth of literature documenting mentoring programs in academic libraries and their importance for the acculturation and development of early career librarians.[4] These programs often follow the typical junior-senior dyad mentoring model, but others have described varied approaches such as team mentoring and peer mentoring.[5] Most mentoring programs in libraries are targeted specifically toward new librarians.[6] These programs most often focus on providing early-career guidance and training to new librarians, or on shepherding librarians through the tenure process.[7] In the literature, there is a noticeable gap in mentoring support for post-tenure, mid-career librarians, who frequently need to navigate increased workload expectations, work-life balance challenges, leadership development, and career planning.

Beyond libraries, mentoring is widely recognized as an essential part of success in academia.[8] Mentoring not only bolsters the success of the individual being mentored but also improves the engagement of the mentors.[9] Structured mentoring programs improve diversity, especially when those programs are designed from the perspective of supporting and welcoming all participants, rather than focusing on a deficiency narrative among one's underrepresented faculty and librarians.[10] Most formal structures for mentoring, focused as they frequently are on the achievement of tenure, are then withdrawn upon promotion, leaving little guidance for navigating the different challenges of the post-tenure stage of one's career.[11]

Mentoring networks can contribute to career success and satisfaction, but without the scaffolding provided by mentoring programs might be harder to establish.[12] Social persuasion, while effective at encouraging individuals to apply for promotion, is unfortunately a system known to be fraught with bias, making such networks, even when well-intentioned, problematic.[13] Mentoring also has an influence on the demographics of leadership in academic libraries. While it is not a secret that the profession of librarianship is profoundly dominated by white women, leadership positions are more likely to be held by men, and the representation of people of color in leadership positions is even worse than in the rest of the profession.[14] A high rate of retirements continues to drive high turnover at senior leadership positions, which often require full professor rank, making the mentoring and promotion of women and people of color even more critically important.[15] The dearth of mentoring toward senior positions for librarians thus potentially contributes to the insufficiency of librarians with high enough rank to fill these leadership positions.

Both formal and informal mentoring support has been identified as beneficial for success for women and BIPOC librarians. For librarians of color, being partnered with other librarians of color and having cohorts of peers of color reduced isolation and gave space for advice on navigating professional abuse and neglect.[16] The obstacles faced by librarians of color can be systemic, and are consistently more acute than the obstacles faced by their white counterparts.[17] Academic librarians across ranks reported having access to leadership programs and trainings, but minimal access to support networks such as formal and informal mentors to navigate difficult work situations or get guidance on advancement opportunities.[18]

Increasingly there has been attention devoted to the gender disparities in promotion rates.[19] Geisler et al. found that women were 2.3 times less likely to be promoted than men.[20] Women are more likely than men to feel isolated, less likely to have mentors, and more likely to leave their institutions.[21] Women with children are less likely to get tenure, and more likely to devote their time to service and "care" work such as committee assignments, advising, and mentoring of students.[22] O'Meara and Stromquist highlight the various barriers to promotion for women faculty and document the value of peer networks to increasing women's sense of agency post tenure.[23] Promotion is often influenced by an individual's sense of agency.[24] Terosky et al. examined how women associate professors were influenced in their decisions to apply for promotion to full professor. They explored what would help mitigate those factors, including institutional interventions, self-selected support networks, and perceptions of ability.[25]

Recently, the literature has delved deeper into what barriers exist for promotion to full professor and other leadership opportunities. In these studies, common themes emerge: lack of clear criteria and process, increased service and teaching workloads, gendered expectations that inhibit dedicated time and resources for research, and absence of mentoring and post-tenure career planning.[26] For academic librarians, similar factors have proved to be barriers to promotion to full professor and to pursuing leadership opportunities.[27] Recommendations to improve rates of promotion include crafting clear criteria and procedures, and increasing mentoring and support networks.[28] Additionally, implementing regular reviews to assess workloads and progress towards promotion have positive impacts on promotion rates.[29] Part 1 of this study includes an extensive discussion of relevant literature summarized in this section.[30]

Method

The authors identified a dataset of tenured academic librarians at public R1 institutions, since those institutions are more likely than private institutions to offer tenure to librarians.[31] When the data were collected in 2017, the authors identified forty public R1 institutions that tenure their librarians (see appendix A). After securing IRB approval, the authors identified specific individuals with tenure at each institution, for a total of 1,009 individual librarians. Each individual was sent a personalized invitation to complete a survey about mid-career mentoring, career planning, and professional development. Of those invited, 387 individuals completed the survey for an overall response rate of 38 percent. The final question of the survey invited respondents to participate in follow-up semi-structured interviews, which compose the dataset used in this article. Of the 387 survey respondents, 171 volunteered to participate in follow-up interviews, for a volunteer rate of 44 percent of the survey respondents, or 6 percent of the entire initial sample.

After reviewing the data from the survey, the authors identified a number of areas where in-depth conversations would help provide a clearer picture of the factors influencing promotion for mid-career librarians. While the authors started this research with a focus on mentoring, the survey hinted at other possible drivers that might be influencing promotion. These findings drove the development of a list of guiding questions for each interview (See appendix B). The questions were not necessarily asked exactly as written, nor in the order that they appear in the appendix, but rather the content of the conversation drove the direction, and the guiding questions acted as prompts for the authors to encourage participants to address particular areas of interest to the researchers. Generally, the interviews asked participants about

- their overall career plans;
- the support and guidance they had received or were still receiving after achieving tenure;
- their portfolio of service and research commitments and how they related to those same portfolios before tenure;
- their mentoring experiences with both individual mentors and group programs, either formal or informal;
- the barriers to promotion they had seen or experienced;
- their desire for mentoring.

The authors invited all 171 self-identified survey respondents to sign up for one of ten individual, semi-structured interviews. After the initial round of interviews, the authors assessed the ranks and institutions of all participants who had completed an interview session. Finding that associate professors and some institutions were well represented, the authors then reviewed the list of remaining survey respondents to identify full professors, members of institutions with particularly rigorous criteria (as identified by earlier survey responses), and members of institutions who did not already have an interviewee signed up.

Through multiple rounds of solicitation, a total of seventeen individuals participated in semi-structured interviews. Existing research supports the approach of using a data set of this size for this type of qualitative research.[32] This research approach serves to add depth and nuance to individuals' responses about mentoring and promotion in ways that a large-scale survey cannot. While it is not necessarily the case that these individuals are representative of the field as a whole, this approach provides insight into individual experience and identifies potentially broader implications for the field at large to consider, whether librarians at any particular institution are tenure-track or not. These discoveries, when situated within the broader context of research about these populations in academia, contribute to a picture of how librarians differ from, or are similar to, other academic groups. Qualitative assessments like structured interviews illuminate areas in which the profession can improve to ensure mid-career librarians are receiving the support and growth they need.

The authors conducted a total of seventeen semi-structured interviews over a period of two months with a set of tenured librarians representing a variety of ranks and institutions. The researchers collected the rank of each participant, as well as their pronouns. The initial study sample included such a small percentage of librarians of color that their responses could not be separated as statistically significant. Therefore, the authors did not request racial identity for the interviewees. In some cases, during the interview the participants voluntarily disclosed their race in the context of their responses. Gender identities described below were inferred from the pronouns. If no pronouns were provided, the authors did not assume an identity (see figure 1). Roughly two-thirds of the participants were associate professors or a comparable rank, and the remaining one-third were full professors or a comparable rank (see figure 2).

The authors kept notes during the discussions. Additionally, each interview was recorded and then transcribed. Using the collected transcripts, the authors conducted topic modelling analysis.[33] Topic modeling examines a corpus of text, in this case the interview transcripts, for terms that occur near each other frequently. This topic modeling provided a framework for the qualitative codebook the authors developed to analyze the interviews. The authors added to this codebook the overall themes they had noticed while conducting the interviews and reviewing the transcripts.[34] Using the codebook, at least two of the authors coded each transcript for the presence of the identified concepts. The resulting coded transcripts were analyzed using software designed for this purpose in order to establish the relationships among the various themes in and across the interviews. Data analysis of the transcripts showed that the three highest occurring codes were "process," "mentoring," and "criteria." Analysis also indicated high co-occurrence of these codes with "absence," "promotion," "full," "post-tenure," and "pre-tenure." The authors then reviewed each transcript to further understand the occurrences of these codes.

FIGURE 1
Gender of Respondents

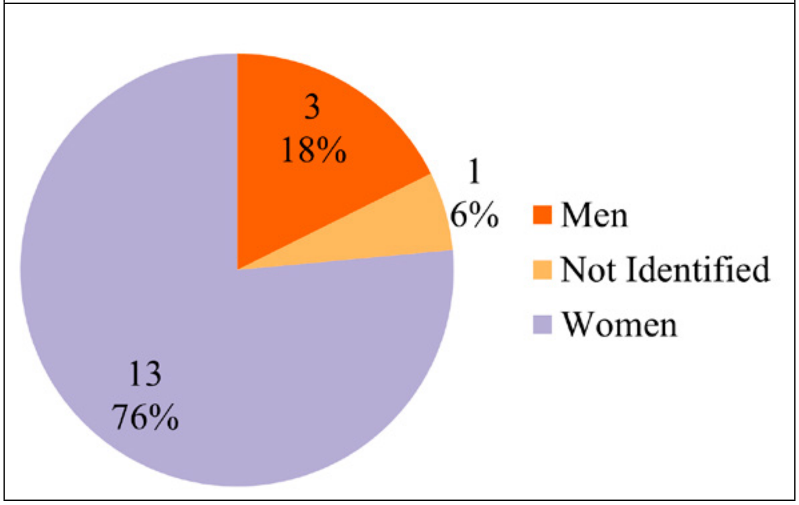
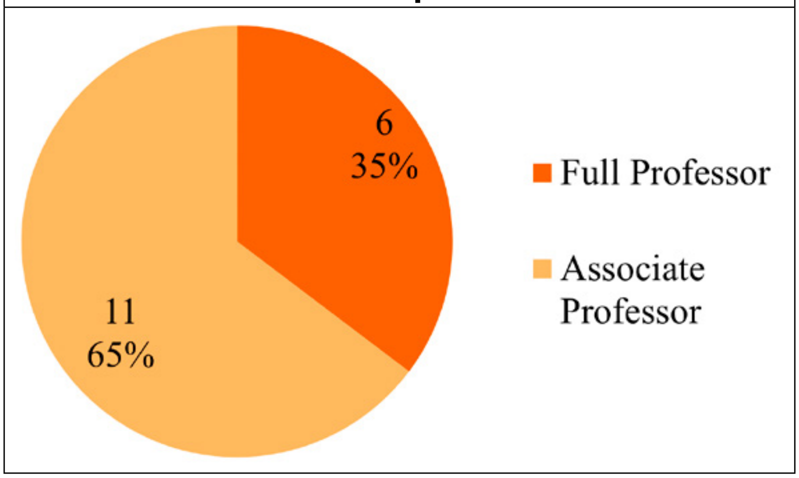


FIGURE 2
Rank of Respondents



Results

This deeper content analysis of the interview transcripts revealed four major themes that appeared across the interviews: Criteria; Mentoring/Support Structures; Process; and Responsibilities. While there is considerable overlap among all these themes, they each merit separate discussion.

Criteria

Regarding the theme examining the criteria employed at candidate's institutions for promotion to full professor, interviewees frequently noted that their institutions had engaged in substantial effort to clarify criteria for librarians to achieve tenure, but that rarely had criteria for promotion to full professor received similar attention or clarification. One woman associate professor described their institution this way: "…it was pretty laid out for assistant to associate and what you needed to get tenure. But then going up from associate to full was less laid out." In some institutions it was even worse, with librarians describing criteria that were either non-existent, circular, vague, or ignored. These concerns can be summarized by comments such as one woman associate professor's description: "I believe there's some vague language about demonstrating increasing responsibility and increasing impact in the field, but there aren't any specifics." Another woman associate professor added that "We don't have a clear sense, especially for specialists, like in my unit, how people are evaluated." One woman associate professor described the references leading to nothing: "It just says, follow the university guidelines, which say we follow the department guidelines." A woman associate professor pointed out that the existing full librarians were simply ignoring the criteria: "This may seem like a simple thing, but I wish they would read the guidelines we're going up under."

Librarians often believed that the paths to promotion to full professor were known only to a few, or worse, open only to a few for reasons of popularity rather than performance. For example, one male full professor described a system that demonstrated unfairness: "A colleague of mine did not receive [tenure] because she refused to be in the department's play and the department's rock band… Really." Another woman associate professor observed, "Here it seems like getting promoted to full is very much a popularity thing and so it's more personal than professional." Or a woman associate professor who said that "The associate to full feels much more arbitrary and political." One woman full professor suggested that some librarians plan their promotions around avoiding the perceived unfairness of the process: "She has never liked me. I mean, every meeting we're in, she takes my ideas and all of a sudden, they're hers, and I just do not like working with her, but I have to, and the last thing I want is her reviewing me. When is she retiring?" Some of these experiences go beyond problematic or even unethical into the realm of illegal, such as the rock band example.

The particular challenges faced by women and people of color regarding the criteria for promotion were also evident in the interviews. One woman full professor pointed out the way race contributed to the stress of review: "So, it's pretty white here, so I don't think my colleagues feel, probably, the anxiety that I felt. I don't think that was an issue for them." Another woman associate professor called out the role of gender in their perception of the criteria: "It's kind of seen as an exclusive club that it feels like they don't want anybody else to enter… This last year, three new librarians went up for full and received it, and I feel comfortable asking them because it was a male dominated group, and now we have a few more women to it." One man full professor pointed to the sense that promotion was more about admittance to a club than about one's work: "[There was a] so-called old guard, or committee of five, that basically had life and death control over new faculty members. And if you didn't see things their way, they would not vote for you on promotion."

Interviewees frequently described the criteria as unwritten but expressed they had heard informally about how things really work, such as this comment from a woman associate professor: "There are not [clear criteria]. It's just rumors and the experience." One woman associate professor specifically addressed the unwritten secret components of their criteria this way: "the collegiality was because, you know, the cultural norms were different in interaction… Collegiality is not—it definitely is not written down. But everybody knows it's there. It's the white elephant in the room, basically."

The authors noted that participants described substantial inconsistencies across institutions about what kinds of productivity are required for promotion. One woman associate professor pointed out this difficulty in the context of identifying appropriate external reviewers for promotion cases, who would apply the appropriate criteria in their evaluations: "I found, in talking to my colleagues, that their systems are pretty different from ours. So, I think it's kind of difficult to translate their criteria or the expectations that they have into our system." Some institutions required a significant record of peer-reviewed publications or a book, some required high levels of professional service, but not necessarily publication, while others required time- and fiscally-intensive professional development such as additional graduate degrees. One woman associate professor described their library's promotion structure this way: "To get to a III, you have to have… 24 post-baccalaureate credits, but the IV requires the second master's… and also leadership. You have to demonstrate leadership in the field in order to be promoted to that level." Some institutions required that librarians pursue additional post-tenure promotion in order to assume leadership positions, and others did not. These differences across institutions often make transferring among institutions challenging for librarians seeking new positions.

Process

This category included observations from the interviewees about the clarity, existence, or effectiveness of the processes in place for promotion to full professor. Some described a fairly clear process, such as in this comment from a woman associate professor: "The personnel committee is required to notify everybody who's eligible of that opportunity, and you have to respond in writing by a certain date whether you are planning to or not." Or another woman full professor said that "You either need to be nominated by a full professor or you can self-nominate, and our policy states you can ask to be reviewed every three years." In many cases, respondents reported opaque processes that individuals interested in promotion could not understand, or processes that were haphazard or ad hoc, rather than consistent or documented. One full professor described an expectation of informally surveying the senior librarians before seeking promotion: "If…you wanted to go from associate to full…you would go around and ask all the people at that higher rank…what they thought about it."

Librarians described networks of social persuasion, by which individuals are identified through some unknown process as being "ready" for promotion, and then encouraged to apply. For example, one man associate professor described the process at their institution this way: "Our process is that the associate dean would identify that you would put forward your dossier. You cannot self-identify and put forth your dossier for promotion to full rank. It has to initiate [from] library administration." Another woman full professor described social persuasion from the full professors: "We encourage them [tenured librarians] to come and talk to us, to set up meetings with us…. So, they have to self-identify, but we again, we encourage folks who are associates to—we remind them that, hey, we could use a few more of you, we would like to see your materials." Social persuasion, while effective at encouraging individuals to apply for promotion, is unfortunately a system known to be fraught with bias, making such networks, even when well-intentioned, problematic. One woman associate professor described the mixed messaging of social persuasion: "Sometimes we're encouraged to go up and then other times, it's just you don't have enough, and it feels like you'll never have enough."

In the cases where the process was known but was formalized social persuasion, the nature of the process remained unclear or suspicious to candidates. One woman associate professor expressed this suspicion: "I sometimes have suspected that the university librarian may have voted against people because she didn't want to have to deal with their pay raises." In some circumstances, a subtext of the wishes of the dean of the library underlaid the comments of participants. One man full professor described their dean's influence in this way: "When our former Dean was here, there was a sense among a lot of the faculty that oh, she had to sort of anoint you in order for you to be able to make it." Respondents sometimes reported that the dean did not support tenure for librarians or did not wish for librarians to seek promotion to full professor. For example, according to one woman associate professor, "…it seems to me that they should want to increase the ranks of higher-ranking librarians, but that doesn't seem to be the case." Another woman associate professor explained that "we have an administration in the library that really doesn't like the faculty status that librarians have here." Other respondents described their deans as encouraging more promotions in order to increase the ranks of senior level librarians. This subtext of the wishes of the deans appeared to then influence the process by which promotions were handled in the institution, as well as the interest of individuals in pursuing promotion. One recently tenured woman associate professor explained that they wanted to pursue promotion but had been discouraged: "There's some pretty strong resistance at my institution to… [seeking promotion] in any kind of timely fashion. I think they suggested a minimum of five years. I meet the standards right now."

Mentoring/Support Structures

This category included comments related to the mentoring programs available, in addition to related support structures that might improve the opportunities available for individuals to pursue promotion. The question of racial diversity, in particular, is an acute challenge of academic librarianship, as described by one woman full professor: "I like my colleagues, but there are some days when I don't see anybody who looks like me unless I go to the bathroom and look in the mirror." Existing research suggests that lack of diversity is a pervasive problem both in the field of librarianship specifically, as well as at senior ranks in academia generally.[35] These kinds of sentiments among BIPOC librarians, and the centering of whiteness that create them, are widespread in the profession.[36]

The authors asked participants about the availability of post-tenure mentoring at their libraries and universities. Even in cases where promotion is desirable, support is not always available. As one woman associate professor explained: "There is some interest on the campus level to move people towards full professor but not in a particularly structured way and it tends to be abdicated to figure it out." But as another woman associate professor put it: "Just because you have promotion in tenure doesn't mean that you don't need to continue being mentored." Our respondents reinforced the understanding that upon receipt of tenure formal mentoring was withdrawn. One woman associate professor described previous efforts to analyze the availability of support for mid-career librarians: "I did a survey of ARL libraries about supports they have for…senior librarians. And there are very few formal supports out there." Participants, in most cases, commented that even if their institution offered a robust, structured mentoring program for new librarians, in almost all cases formal mentoring was withdrawn at the time of tenure. As one man full professor observed: "But once you get to associate, everybody's just kind of on their own. And I think that's really a lot of people then don't really have the confidence or know where they stand, and people just tend to kind of coast along. And I don't think that's a good thing for their careers. It's not a good thing for the libraries." One woman full professor stated that "We have a formal program for pre-tenure faculty, but once you hit associate you're on your own." Others described similar situations at their institutions. A woman associate professor said that "I think most of it is there's this mindset that oh, you know, you've already achieved tenure, then, you know, you don't really need to have someone to work with you or help you." Or another woman associate professor said, "We prepare people to go up for tenure very well. Better than most, and have for many years, but the promotion thing is a completely different story."

While some librarians noted that their mentoring relationships continued after tenure, in those cases the mentoring relationships typically had been established before tenure and persisted afterward, or were simply good fortune in hierarchical relationships. As one woman associate professor mentioned: "I have been fortunate to have a great supervisor." A man associate professor reported a good mentoring relationship that ended due to a retirement: "I no longer have a formal mentor. You know, when I was pre-tenure, I had a formal mentor. They retired. I was told that if I wanted someone to mentor for full it would happen only the year I was asked to go up." Very few participants reported access to formal or structured mentoring either in their library or provided by their campus. One woman associate professor explained that "right now we don't have any [mentoring] formal or really informal even." One woman full professor described an informal peer mentoring network: "The associate professors have an unofficial mentoring group going on." One woman associate professor described the way the absence of mentoring resulted in an absence of career planning and direction: "the people who got associate professor aren't necessarily thinking about the future."

Particularly shocking were the reports from many participants that their workplace culture discouraged or prohibited them from taking advantage of support that is designed to improve one's readiness for promotion or did not integrate time for research and scholarly pursuits into regular workloads. A woman associate professor described an unused policy of dedicated research time: "I have not really had a lot of chance to do research.… Even though the library has a policy of, you are allowed to take ten percent of your time to apply it to research." Another woman associate professor wasn't even sure what their options were: "I'm honestly not sure if we're eligible [for sabbatical]." Many librarians reported that while they are eligible for sabbatical leave, in their culture sabbaticals are simply not taken. A woman associate professor explained, "I have heard them joke about [taking a sabbatical], but I have never heard anybody seriously go for it. To test whether it would be acceptable." Another full professor explained that "maybe in the last four years, I'm not aware of anybody who's done one. Even though we have enough people that certainly some of them [are eligible]." A man full professor described an environment where sabbatical is rare: "We are eligible for sabbaticals. People don't take them as much and it's not like every seven years, like it is with the teaching research faculty." One woman associate professor described guilt as the primary motivator for foregoing sabbatical: "In the library, the culture here is such that [sabbatical is] certainly not a given. We all feel a little guilty about forcing our colleagues to take on our day-to-day during our absence." That same participant went on to explain that this guilty response was actively encouraged by the administration: "The message that we got about… the deadlines for sabbatical, within that message, it said, 'These will be looked at very carefully given our staffing shortages, and you can't expect other people to cover'… It was a very discouraging message." Respondents who reported not taking sabbaticals or dedicated research time generally described environments where using these supports were frowned on because of the burden it placed on others, the focus it took away from librarianship responsibilities, or the assumption that research is something one conducts on personal time. In many cases, access to sabbatical and research time was a faculty-wide benefit, but because the roles of librarians are often structured very differently from instructional faculty, these benefits were considered inappropriate for librarians to employ.

Access to sufficient time for producing research is one of the main barriers to promotion, and sabbatical is a potentially fruitful way to overcome this barrier. Sabbaticals are often used to focus on research and publication, and respondents who specified having taken sabbatical typically had spent it that way. This was evidenced by the participants who commented on the influence of sabbatical on their timing for pursuing promotion. One woman associate professor explained that "after sabbatical, I can come back, start working on my packet, and submit it in the fall." Or another woman associate professor described the difficulty of producing research: "I would say it's mainly because we don't have any release time to do research. So, unless you can do it while you're on sabbatical, it's really hard to make the time to do it." A woman full professor reported that her institution recognized the importance of sabbatical and supported it: "People do take sabbaticals and they really lead to productive work and that leads to promotions. We highly encourage faculty members to take a sabbatical." Another woman full professor reported that "I did the sabbatical, and then I wanted to go up for full." Given this influence, the cultural pressure for librarians to forego sabbatical leave is highly problematic.

Some respondents indicated that in an effort to support untenured librarians, their organizations instituted policies restricting travel or professional development funding for tenured librarians, requiring them to pay out of pocket to present at or attend conferences. One woman associate professor said, for example: "Going from assistant to associate and getting tenure is very formal. It's a very formal mentorship program, and there's a lot of things they get—like at that level they get more travel support, 'cause they're at the lower salary level, but they have to do this. After that…there really isn't any kind of formal program for going forward." Another woman associate professor explained their travel support similarly: "You get less money once you get promoted. And you get tenure, then you get less money reimbursed to attend those conferences."

Responsibilities

This category included comments about individual librarians' workloads and professional expectations. Participants routinely described research and publication, which is typically required for promotion to full professor, as work that is extra, additional, or not considered part of their "real" job. That perspective was inherent in several comments from participants. One woman associate professor said that "Budget cuts or flat budgets, leaving all of us doing more with less does make it hard to carve out the time when we're in the midst of trying to get our job done to meet all those expectations." Many described that their workloads were greatly increased after receiving tenure. As a woman associate professor explained: "My work commitments have changed dramatically [since tenure], so I have not really had a lot of chance to do research." Another woman associate professor described multiple pressures on their workload: "Not just because I received tenure, but family responsibilities, also inheriting [a very large ongoing project], so having increased job duties without additional staffing initially." In some cases, these workload increases were part of a move into a managerial role, which then influenced how they spent their time. One woman associate professor described the need to prioritize professional development as a manager: "You may want to be going to like the ARL Fellows or UCLA Fellows thing, which is a huge time commitment, but that doesn't result in new scholarship."

Respondents reported that once they achieved tenure, they were expected to adopt much higher service loads, in addition to increased responsibilities in librarianship and management. One woman associate professor simply stated, "That service piece right there has definitely ramped up." The authors asked all participants about their distributions of workload among various categories of research, service, librarianship, leadership, etc. Respondent's answers to these questions revealed extremely wide disparities about what kind of work "counts" toward promotional evaluations, which work is expected, and which is considered "extra." Consequently, service was valued very differently in some institutions than in others, and service to the profession or to the institution was also valued differently at different institutions. Service contributions were also valued in inconsistent ways between annual evaluations and promotional evaluations, making it even harder for librarians to determine the best choices for engaging with service. These wide disparities in expectations contribute to a confusing landscape of the value of work across the field, creating hyper-local bubbles that influence the professional choices of mid-career librarians, and possibly limiting their mobility to positions elsewhere.

In some libraries, their organizational practices included actively protecting the time of untenured librarians by assigning higher workloads to tenured librarians. One woman associate professor described her institution's expectations: "It's expected… that you take on a little bit more service and a little bit more leadership, so that then the tenure-track individuals could focus on their publications." Several participants expressed that while the expectations increased, they felt more agency over what research and service they took on in mid-career. One woman associate professor expressed gratitude for being able to abandon an unfulfilling research project: "For me, [tenure] was a pretty awesome moment to recognize that I had more choice in what I did." Another man associate professor described their service participation: "I'd say that I choose my opportunities with more discretion." However, some pointed out that a post-tenure slow down can be detrimental to any future promotions: According to one man full professor, "What I had always heard was as soon as you get continuing status, you can't let off the pedal." Another woman full professor had witnessed the same problem: "People say, 'Oh, I finally got tenure. I finally got promoted to associate professor. Now, I can relax.' Then, they never get back on the treadmill to work toward full professor."

It was extremely common to hear that research and publication were activities that librarians were expected to engage in on their own time rather than at work, where they were expected to devote all of their time to librarianship, management, and service activities. One woman associate professor and manager expressed their concern about the influence of this perspective on the newer librarians: "I have so many early career librarians on my team that

I need to also set a model for that on how to set boundaries, so that they don't burn out." Librarians with non-professional responsibilities outside of work like caregiving, or indeed, with healthy work-life balance, considered it impossible to devote non-work time to research and publication, and therefore felt that further promotion was beyond their capabilities. One woman associate professor described the tension this way: "I will definitely say, yes, as a woman, parenthood, and needing to skedaddle at the end of the day and do other things with my evenings and weekends, I'm not able to throw as much into my job as I was when I was on the tenure-track." That same participant explained that they were using the time they could spend on service to try to improve the demands on caregivers: "Some of my institutional service has been about family-friendly policies; so, again, the timing of my parenthood and how it intersects with the timing of my tenure—those issues became important to me at the post-tenure part of my time here." One woman full professor described, in fact, their lack of work-life balance as key to their ability to succeed: "I don't have kids or a husband or dogs or anybody, so I can work as late as I want. I can stay up as late as I want. I can come in on the weekends if I want to or not, and it just gets done somehow." Since women disproportionately provide primary caregiving responsibilities, the competition of caregiving and work is especially problematic for women, as the recent pandemic has made painfully clear.[37]

For mid-career librarians without interest in senior level leadership, the phase of their career between achieving tenure and preparing for retirement might still be characterized by changes in workload and expectations as their organizations evolve, changes that may or may not support any one individual's efforts toward promotion to a senior rank.

Implications

The themes brought out by these semi-structured interviews suggest a variety of implications for the field, whether librarians are in tenure-track positions or not. The challenges described above are relevant for mid-career librarians in all job classifications. The absence of criteria for promotion creates obstacles for librarians who might be interested in achieving it. Inconsistencies of criteria across institutions seriously inhibit the mobility of librarians to new positions. This study found extreme differences in what kind and quantity of work were valued for mid-career promotion. Librarians who have been focusing their efforts on success in their current position are likely to find themselves ill-qualified or incorrectly focused to move to a new position in another institution with different and possibly unwritten requirements. As the field experiences a widespread transition in senior leadership, this restriction of mobility and inconsistency of criteria will impede the growth of the field as a whole.

Unclear processes employed by different institutions to identify candidates for promotion, and to handle those promotions when they are attempted, create a ground of instability for librarians. These opaque or inconsistent approaches then risk creating an outsized influence of the opinion of the dean or of a small group of full professors at individual institutions. If the dean is unenthusiastic or ambivalent about the tenure system for librarians generally, promotion processes can become even more opaque, and promotion itself more difficult.

Mentoring for mid-career librarians appears to be extremely rare, despite the clarity across many studies of its importance for career success generally, and for academics specifically. While many robust mentoring programs exist for new librarians, in order to support their continued success similar mentoring should be made available to librarians beyond the tenure review.

Of particular note to the authors was the frequency with which respondents reported that while they technically had access to sabbatical leave, their institutional culture discouraged it so effectively that it was considered unusable. To withhold, via social discouragement, this fundamental benefit to tenured librarians robs the field of the many benefits of sabbatical leave: scholarship, re-energizing of individual faculty, the ability of librarians to seek promotion, even opportunities for colleagues. Additionally, it robs librarians of one of the most tangible advantages of a tenure-track librarian position, since staff and non-tenure-track faculty positions rarely include this benefit. The withholding of sabbatical leave appears to be particularly damaging for individuals who would pursue promotion but cannot produce sufficient scholarship without the leave. This generates additional structural unfairness for librarians compared to their teaching faculty counterparts, who are also more likely to work nine-month rather than twelve-month contracts. These structures inhibit librarians' ability, compared to their faculty peers elsewhere on campus, to produce the kind of work that is expected for promotion and career advancement.

Professional responsibilities also strongly influence the ability and interest of individuals in pursuing promotion. Respondents reported that they are expected to conduct research on their own time, making research unattainable for anyone with substantial responsibilities or interests outside the workplace. This is not a healthy expectation, and academic libraries should identify ways of establishing expectations for both workloads and scholarly productivity that are achievable in a reasonable work week. Library services and research expectations should be scaled to what is achievable.

These collective barriers combine to suggest important implications for the field, beyond the obvious outcome that fewer people will get promoted. While being overrepresented in the field generally, women are underrepresented in academic library leadership.[38] Since women are more likely to pursue promotion if they have access to mentoring[39] and are more likely to have caregiving or other out-of-work obligations, the existing lack of support and overwork disproportionately reduce the number of women able to pursue promotion, and therefore either willing or qualified to undertake senior leadership. Statistics and previous research all point to these challenges being more acute for BIPOC librarians, and even more so for librarians with intersectional identities.[40] The experiences expressed here by participants who self-identified as BIPOC add to the multitude of barriers independent of their race or other identity that mid-career librarians face. Respondents in this study shared experiences that suggest a broad pattern of problematic if not outright unethical or illegal choices by members of promotion committees, leaders, or administrators in a variety of contexts. And yet, few respondents described reporting this behavior to their local or campus offices designed to protect individuals from unfair or unethical treatment.

For some librarians, promotion is the only meaningful source of salary increases, making the importance of mentoring toward promotion critically important for their financial health, especially in a field with low salaries. Additionally, the expectations of overwork, withholding of support structures, or withdrawal of professional support such as travel funding upon achieving tenure, serve to exacerbate burnout and disengagement and depress morale among mid-career librarians.

All of these barriers that make promotion less likely also serve to harm the role of librarians on the campuses they serve. The rank of full professor is often a requirement for institutions' most important and influential committees, which compromises the ability of librarians to engage with their governance structures in ways that support the best interests of the library. Full professor rank is also often a minimum qualification for senior leadership positions in libraries and elsewhere in universities. Barriers to promotion generate, as a result, a narrow applicant pool for these kinds of leadership positions, and consequently make it harder to expand the diversity of senior leaders in the ways the profession wants and needs.

Summary & Conclusion

The authors sought to more thoroughly understand the existence and availability of mentoring and other types of professional support for mid-career librarians in tenure-track faculty positions who have already achieved tenure. Participants' comments reflected four major themes: criteria, process, mentoring, and responsibilities. Generally, participants reported absence of clear criteria for promotion, hazy and opaque processes for pursuing promotion, lack of structured mentoring and other professional supports past the tenure review, and both increases and changes to professional responsibilities after tenure.

For many reasons, promotion and career planning remains important for mid-career librarians in any job classification, whether they are tenure-track or not. Formal structured mentoring should continue to be offered to librarians throughout their careers, even for librarians who don't intend to pursue further promotion, in order to support the success of mid-career librarians in reaching their career goals. Libraries should work to resist cultures that tacitly or explicitly discourage the use of career supports. Libraries should additionally ensure that research and publication, if it is required for career advancement, is considered "normal" work responsibilities to be conducted at work, not "extra" responsibilities to be conducted on personal time.

Benefits of better mentoring and workplace culture are widely recognized: more diversity, more successful individuals, more engagement and connection to the workplace, higher rates of promotion, and more productivity. Providing mentoring and professional support beyond tenure supports the best interests of institutions generally, as well as those of individuals, because mentoring improves retention, satisfaction, and faculty success.[41] Institutions have made admirable progress in clarifying promotion criteria and providing mentoring for new career librarians. Similar attention must be paid to higher level promotions as well to clarify criteria and process, provide access to mentoring and support, and to establish reasonable expectations that allow librarians to complete all aspects of their job at work.

Appendix A. Tenure Granting Institutions

Public R1 Universities

Note: These universities self-identified as tenure granting. Some of them grant continuing appointment.

1. Clemson University
2. Colorado State University-Fort Collins
3. CUNY Graduate School and University Center
4. Indiana University-Bloomington
5. Iowa State University
6. Kansas State University
7. Louisiana State University and Agricultural & Mechanical College
8. Michigan State University
9. Ohio State University-Main Campus
10. Oregon State University
11. Pennsylvania State University-Main Campus
12. Purdue University-Main Campus
13. Rutgers University-New Brunswick
14. Stony Brook University
15. SUNY at Albany
16. Texas A & M University-College Station
17. Texas Tech University
18. The University of Tennessee-Knoxville
19. University at Buffalo
20. University of Alabama at Birmingham
21. University of Arizona
22. University of Arkansas
23. University of Cincinnati-Main Campus
24. University of Colorado Boulder
25. University of Florida
26. University of Hawaii at Manoa
27. University of Illinois at Chicago
28. University of Illinois at Urbana-Champaign
29. University of Kansas
30. University of Kentucky
31. University of Louisville
32. University of Mississippi
33. University of Nebraska-Lincoln
34. University of New Mexico-Main Campus
35. University of Oklahoma-Norman Campus
36. University of South Carolina-Columbia
37. University of Utah
38. University of Washington-Seattle Campus* (not classed as faculty)
39. Washington State University
40. Wayne State University

Appendix B. Structured Interview Questions

Theme 1: Introductory questions

1. What is your current position?
2. When did you receive tenure?
3. What is your current rank?
    a. If you are full professor/librarian, when were you promoted?
        i. Amount of time between receiving tenure and going up for full?
    b. If not, are you considering going up?
4. That will lead to these possible questions:
    a. What type of career planning have you done since receiving tenure?
    b. What type of support or guidance is available for planning your career post-tenure?
    c. Are you encouraged by your institution or organization to pursue promotion to full? Possible Follow-up: how does that process work at your institution?
    d. What type of support is provided to associate professors to guide them to promotion and leadership opportunities?

Theme 2: Distributions/Workloads

1. What is the official distribution for librarians at your rank? Follow-up: How does your workload compare to this distribution and/or is that the distribution that people are reviewed on when they go up for promotion?
2. How have your service commitments shifted since receiving tenure?
3. Have you taken on additional administrative/managerial responsibilities since receiving tenure?
4. How has your research shifted since receiving tenure?
5. How long have you been at the rank of associate professor?
6. Does your distribution match that of the teaching faculty?

Theme 3: What you need to succeed/ Professional Support

1. Does your institution/organization offer mentoring for associate professors? If so, what does this look like?
2. Do you know if there is mentoring or professional development support for associate professors at your campus level?
3. Are there specific barriers you perceive as preventing or delaying your promotion to full professor?
4. What type of support is offered tenured faculty in your institution, such as sabbatical leave and travel funding? Dedicated research time, research assistants, etc.?

Theme 4: Clarity of Process

1. Are there policy changes that you see as needed to help remove barriers to promotion to full professor?
2. What type of guidance, if any, have you received regarding promotion to full?
3. Do you think your institution's decisions about promotion to full professor are made fairly? Do you, or do you believe others, perceive that the decisions are influenced by factors other than performance, such as race or gender?

Notes

1. See for example Peg Boyle and Bob Boice, "Systematic Mentoring for New Faculty Teachers and Graduate Teaching Assistants," *Innovative Higher Education* 22, no. 3 (March 1, 1998): 157–79, https://doi.org/10.1023/A:1025183225886; Darlene F. Zellers, Valerie M. Howard, and Maureen A. Barcic, "Faculty Mentoring Programs: Reenvisioning Rather than Reinventing the Wheel," *Review of Educational Research* 78, no. 3 (September 1, 2008): 552–88 and the entire January 2022 issue of the *Journal of Faculty Development*, among many others.

2. William H. Walters, "Faculty Status of Librarians at U.S. Research Universities," *The Journal of Academic Librarianship* 42, no. 2 (March 1, 2016): 161–71, https://doi.org/10.1016/j.acalib.2015.11.002.

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Community College Librarians' Research and Publication Practices

Linda Miles and Robin Brown

Community colleges educate an estimated two-fifths of United States college students. Yet community college librarians do not disseminate enough research to enable their colleagues and their libraries to reach their potential. Little is known about what types of supportive measures might increase productivity. The authors collected quantitative and qualitative survey data, finding that a slight majority of participants conduct research, but less than one third of those who research share their findings. Key challenges include lack of time, lack of funding, and lack of confidence. A new baseline understanding will provide a foundation for initiatives to support increased representation.

Introduction

Research focusing on the practices of community college librarians and the library experiences of community college students is underreported in the professional literature, even though by some estimates 41 percent of undergraduates in the United States attend two-year colleges.[1] As Kim Leeder Reed put it, "Community college libraries are deeply underrepresented in the professional literature and organizations of academic librarianship. As a result, the challenges and successes that take place in the community college world are largely invisible to others."[2] Jennifer Arnold, investigating workforce issues among community college librarians, argues that "community colleges should be recognized as a unique segment of higher education, and community college libraries should be considered on their own, rather than simply as a part of the university or college academic library field."[3] In a recent editorial, Carolyn E. Poole pointed to the need for support for community college librarian researchers, arguing that these individuals "can become indispensable assets to their institutions by capitalizing on unexamined, pertinent topics and issues of local concern."[4] In the Fall of 2019, the Executive Committee of the Community and Junior College Libraries Section of ACRL (CJCLS) approved the establishment of a Scholarly Research Task Force to begin exploring ways to encourage scholarly research and publication by librarians working in two-year colleges and, ultimately, to increase representation of the practices and experiences of community college librarians and their students in the literature of the field. In June of 2020, the Executive Committee approved conversion of this task group into a standing committee, affirming the section's investment in this area of work. As the group began exploring the needs and challenges of community

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college librarians around research and publication, it became clear that very little is known about these practices.

Most investigations of academic librarians' research and publication practices have focused on those working in doctoral-granting research institutions.[5] Researchers who do include a broader sampling typically include 5 percent or fewer participants from community colleges, do not use institution type as a lens for analysis, or do not ask for data about institution type.[6] One notable exception comes from Deborah M. Henry and Tina M. Neville, who looked at research, publication, and service requirements for academic librarians. A full 27 percent of their respondents were from two-year institutions, and they found relevant differences in tenure requirements and types of support for research activities.[7] In addition, Christopher V. Hollister conducted an exploratory study about academic librarians' post-tenure practices, including twenty librarians from associate colleges (9% of their study population) and identifying relevant differences in research requirements for both tenure and post-tenure review.[8] By adding to this literature, the present study will support understanding of current behaviors and perceptions and provide a basis for professional development and other support efforts for those who are required to—or who would like to—conduct research as librarians in two-year, post-secondary institutions.

Literature Review

Literature on the research and publication practices of academic librarians covers a range of themes, including some that surfaced through the current study. Marie R. Kennedy and Kristine R. Brancolini, who are among the most recognized scholars working in this area, measured academic librarians' attitudes toward research, along with their perceptions of their own abilities in 2010, finding, among other things, that "self-efficacy" (research confidence) was a key factor.[9] In 2015 Kennedy and Brancolini conducted a follow-up survey employing a new "research confidence scale," and finding that self-efficacy continued to matter, and that institutional support for research activity was becoming more common.[10] Together with other colleagues, these two prolific scholars have continued to contribute a wealth of research literature related to this field of study.[11]

There is a relatively long history of articles that variously assess what leads to research and publication success, in many cases emphasizing the impact of institutional culture. Back in 1994, William K. Black and Joan M. Leysen suggested that institutions provide a "supportive structure," where librarians routinely connect scholarship to their day-to-day responsibilities, that they receive mentoring and release time for research, and that some of their daily responsibilities be shifted to other staff members.[12] In a highly cited 2008 study, Joseph Fennewald interviewed librarians at Penn State University, finding that a "collegial climate" makes the biggest impact, a culture that includes formal and informal mentoring, peer support, collaboration, and camaraderie.[13] In 2012, Alvin M. Schrader, Ali Shiri, and Vicki Williamson called for development of a "framework" of supports.[14] Kristin Hoffmann, Selinda Adelle Berg, and Denise Koufogiannakis performed a content analysis of the literature in 2014, finding that factors contributing to research success form a complex combination of individual, communal, and institutional characteristics.[15] These researchers further pursued this line of inquiry in 2017, surveying Canadian research librarians and finding that supports from all three categories (individual, communal, and institutional) had significant impact on research productivity. They advocated for development of a research environment that features this range of support for librarian researchers.[16]

There is also a history in the literature of calls for the involvement of professional associations in helping to support librarians' research and publication success. Based on their 2018 research with early career librarians, Erin Ackerman, Jennifer Hunter, and Zara T. Wilkinson argued that such organizations should get into the game because of their reach and collective resources: "Because they serve a wider base of constituents by design, professional organizations can offer research supports that may be vital for librarians who have fewer opportunities or who have difficulty finding informal mentors or collaborators in their own libraries."[17] These latter constraints are among the concerns raised by the community college librarians surveyed in the present study. Indeed, there is an established history of association involvement in this work, primarily in support of librarians working in research institutions. Most notably, in 2011 the Canadian Association of Research Libraries (CARL) developed the Librarians' Research Institute (LRI), which debuted in 2012 and continues to provide research librarians in Canada with intensive professional development to this day.[18] In 2017, Vicki Whitmell reported on the LRI, arguing that there is a role for academic library associations to play in providing relevant professional development because their members may need this support to meet research and publication requirements placed on them by their institutions.[19]

Methodology

Through this exploratory research project, the authors seek to develop an understanding of the current research and publication practices of community college librarians, the types of support they receive for this work, and their perceptions of barriers that make this work more challenging. The research questions include the following:

1. How much research do community college librarians do, and what types of research (disciplines or areas of librarianship covered, solo vs. collaborative, etc.) do they take on?
2. How much research-related publication or presentation do community college librarians do, and in what venues?
3. What motivates community college librarians to do research?
4. What are the perceived barriers to, and supports for, this kind of work, and how do community college librarians think about them?
5. Are there correlations between certain personal or institutional characteristics and these data (having a second master's degree, tenure status for librarians, and so on)?

Although many community and junior colleges do not have established procedures for vetting research designs through institutional review boards (IRBs), the authors' institutions are part of the City University of New York, a large urban university with clear IRB requirements. The design of this study was reviewed and approved by the IRB Committee of the Borough of Manhattan Community College. For this project, the authors designed an online survey that included thirty-six closed and open questions (see appendix A). Of these, one question addressed potential respondents' eligibility for participation;[20] twelve focused on research activity from the previous five years; two addressed dissemination practices; four were about perceived barriers and supports; and seventeen focused on personal and institutional demographics. The survey was tested by seven colleagues of the authors, finalized with minor adjustments to language, and conducted on Springshare's LibWizard platform. Recruitment via multiple regional and national listservs began on June 10, 2020, and closed on September 30, 2020. A total of 244 responses to the survey were received. After resolution of a few inconsistencies, there were 234 qualified submissions.

The authors analyzed quantitative data using descriptive analysis to determine central tendencies, particularly utilizing calculations of frequency and mean. Analysis of data related to demographics, professional experience, and institutional context provides an understanding of sample characteristics. Analysis of grouped data representing numbers of both research projects and acts of dissemination of findings addresses research questions one and two. Cross-tabulation analysis was also performed, looking at the levels of participation in research and dissemination against the areas of LIS in which individuals work, faculty status, and tenure or tenure-track status, to provide a more nuanced understanding about who engages in research and dissemination practices and in what types of institutional contexts. Consideration of data related to research topics and research team structure provides insight about the nature of participants' research experiences, and data regarding the type and nature of publication or presentation outlets helped us understand how community college librarians' research findings are represented in the field. The decision to focus on central tendencies in this exploratory study aligns directly with its purpose: to provide a baseline understanding of current practices that can serve as a foundation for initiatives in support of increased participation and representation. Qualitative data was analyzed using a systematic, iterative, and inductive coding process to identify common themes and dissenting perspectives (see the code book in appendix B). Survey comments from participants are employed in this report to help contextualize and enrich the discussion.

Findings and Discussion

Survey Participant Demographics

Survey participants were asked questions related to personal and institutional demographics (see table 1).

Very few respondents were under the age of 31 (10/4.27%), but a larger number were in their first five years of professional librarianship (41/17.52%). This is understandable, given that a full 45.3 percent came to librarianship as a second (or later) career. The authors had hypothesized that full-time librarians would be most likely to respond to their call for participation, and most respondents were employed full-time (220/94.02%). Participants were allowed to select multiple responses to describe the area(s) of librarianship they had worked in during the past five years, and an overwhelming majority listed public services (196/83.76%), followed at a distance by library management (83/35.47%). Based on anecdotal information gleaned from their own experience on the job market, the authors had assumed that the requirement of a second master's degree, while not universal, was fairly standard for community college librarian positions. However, most of their respondents did not have a second advanced degree (136/58.12%). Fewer than half reported that they had held tenured or tenure track appointments (108/46.15%) compared with those who had not, either because their institutions did not award tenure to librarians or because they did not serve in those roles (126/53.85%). Finally, a majority of respondents had served in positions with faculty status in the past five years (147/62.82%).

Research and Dissemination Activity

Slightly more than half of the survey respondents report having served as a researcher/investigator on at least one project during the past five years (138/58.97%), which means that 96 individuals (41.03%) had not served in this role (see figure 1). Of the 138 researchers, the vast

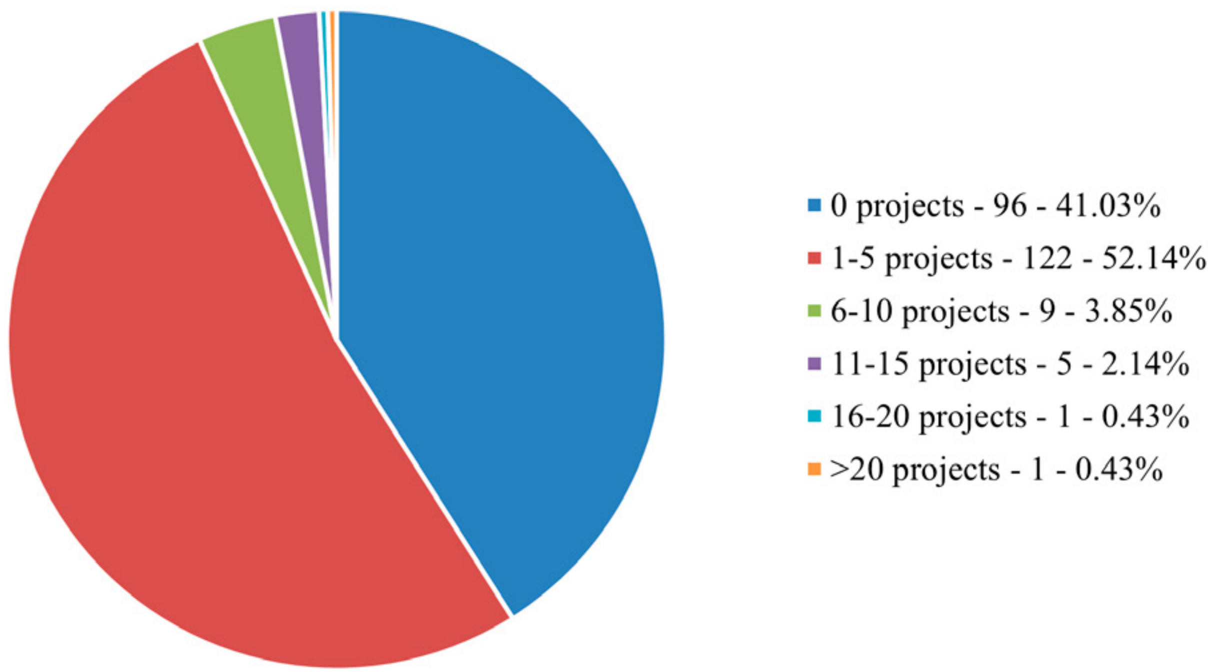
TABLE 1
Survey Participants' Demographic Data (n = 234)

		Respondents	Percentage
Age	20–30	10	4.27%
	31–40	64	27.35%
	41–50	69	29.49%
	51–60	55	23.50%
	>60	34	14.53%
	No response	2	.85%
Years as a professional librarian	<1	1	.43%
	1–5	40	17.09%
	6–10	56	23.93%
	11–20	75	32.05%
	>20	62	26.5%
Librarianship is first career	Yes	128	54.7%
	No	106	45.3%
Full time/part timea	Full time	180	76.92%
	Part time	14	5.98%
	Both	40	17.09%
Areas of librarianship[ab]	Public services	196	83.76%
	Library management	83	35.47%
	Access services	71	30.34%
	Technology	65	27.78%
	Technical services	57	24.35%
	Other	44	18.8%
Second advanced degree	Yes	98	41.88%
	No	136	58.12%
Faculty status[a]	Yes	147	62.82%
	Does not exist in my institution	79	33.76%
	Exists at my institution, but I was not in that role	8	3.42%
Tenured or tenure-track[a]	Yes	108	46.15%
	Does not exist in my institution	104	44.44%
	Exists at my institution, but I was not in that role	22	9.4%
Institutional FTE	<1,000	17	7.26%
	1,001–5,000	78	33.33%
	5,001–10,000	47	20.09%
	10,001–15,000	27	11.54%
	15,001–20,000	14	5.98%
	>20,000	26	11.11%
	Unknown	25	10.68%

Source: authors' calculations
[a]Question specified "in the past five years."
[b]Question specified "select all that apply."

majority had participated in one to five research projects (122/88.41%); only nine reported six to ten projects, the next closest category (6.52%). With the exception of one participant in the outlier category with less than one year on the job, research activity was fairly evenly split for categories based on years in librarianship (see table 2). Those with six to ten years in the profession were most likely to have done research (38 out of 56/67.86%). The librarians least likely to have taken on research projects were those with just one to five years in the profession (20 out of 40/50%), but the difference between these two categories is a relatively slim 17.86 percent.

FIGURE 1
Research Activity



Source: authors' calculations
Question specified "in the past five years."

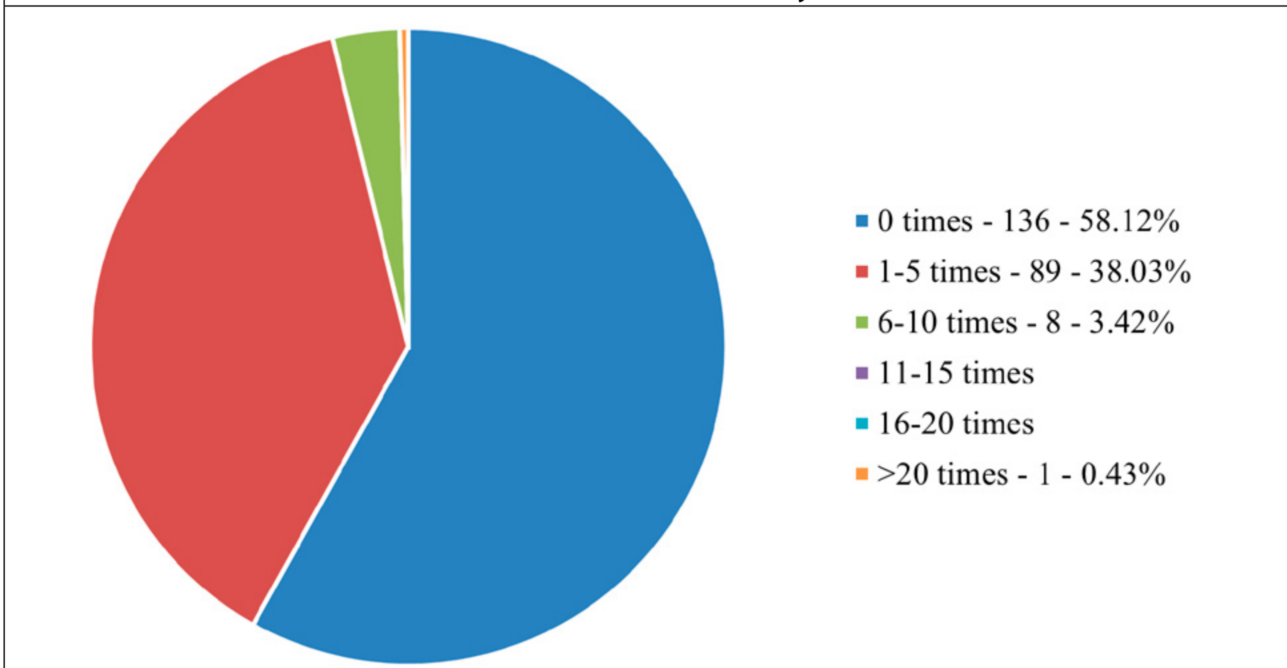
TABLE 2
Years in Librarianship and Research/Dissemination Activity (*n* =234)

Years in Librarianship	Respondents	Percentage of Total Respondents	Respondents Participating in Research Projects	Percentage of Respondents in the Category (Research)	Respondents Participating in Dissemination	Percentage of Respondents in the Category (Dissemination)
<1 year	1	.43%	1	100%	1	100%
1–5 years	40	17.09%	20	50%	15	37.50%
6–10 years	56	23.93%	38	68.86%	32	57.14%
11–20 years	75	32.05%	41	54.67%	26	34.67%
>20 years	62	26.5%	38	61.29%	24	38.71%

Source: authors' calculations

Similar to the findings in the case of research activities, more than 90 percent of librarians who disseminated their research report having done so only one to five times during the period under study (89 of 98/90.82%) (see figure 2). Those with six to ten years of librarian experience are most likely to have published/presented in the past five years (32/57.14%), while those in the categories one to five years, eleven to twenty years, and >twenty years all fall in the mid- to high thirties, percentagewise (see table 2). The authors speculate that the jump in activity among those with six-ten years in the profession may be linked to the typical timeframe for the tenure-track, in which tenure is customarily awarded after seven years of service. Another possible explanation is that emphasis on research and dissemination activity may wax and wane over time, and these individuals may have entered the profession at a time when this sort of activity was highly valued, thereby setting a pattern for continued activity during their careers.

FIGURE 2
Dissemination Activity



Source: authors' calculations
Question specified "in the past five years."
Includes publication and live or virtual presentation.

The findings also indicate that community college librarians are doing more research than they are publishing; while 58.97 percent of the 234 respondents (138 individuals) report serving as a researcher/investigator on at least one project, only 41.88 percent (98 individuals) report having engaged in publication or presentation related to their research.[21] This means that 58.12 percent of total respondents (136 of 234) have not published or presented during that time period, which translates to 98 or just over 71.01 percent of our 138 researchers.

When it comes to publication or presentation venues, conference presentations were most frequently reported (63 of 98/64.29%), followed by peer-reviewed articles or books (43/43.88%), editorially reviewed publications (36/36.73%), blogs or websites (22/22.45%), and trade publications (15/15.3%) (see table 3).

TABLE 3
Publishing or Presentation Venues[a] (*n* = 98)

	Respondents	Percentage		Respondents	Percentage
Conferences, symposia, institutes, etc. (virtual or face-to-face)	63	64.29%	LIS-related only	39	39.8%
			Non-LIS-related only	7	7.14%
			Both LIS and non-LIS	17	17.35%
Peer-reviewed academic/scholarly journal or books	43	43.88%	LIS-related only	31	31.63%
			Non-LIS-related only	6	6.12%
			Both LIS and non-LIS	6	6.12%
Editorially reviewed (but not peer-reviewed) academic/scholarly journals or books	36	36.73%	LIS-related only	28	28.57%
			Non-LIS-related only	6	6.12%
			Both LIS and non-LIS	2	2.04%
Blogs or websites	22	22.45%	LIS-related only	12	12.24%
			Non-LIS-related only	10	10.2%
			Both LIS and non-LIS	0	
Trade publications	15	15.3%	LIS-related only	9	9.13%
			Non-LIS-related only	5	5.1%
			Both LIS and non-LIS	1	1.02%
Other	3	3.06%			

Source: authors' calculations
[a]Question specified "in the past five years" and "select all that apply."

The finding of a preference for conference presentations accords with findings from Ackerman, Hunter, and Wilkinson, who had determined that conference papers and posters were the most common form of research dissemination among academic librarians overall.[22] Gary W. White discussed the importance of research and dissemination practices on reference librarians' professional growth, describing the specific advantages of conference presentations, since these present opportunities to hear about the most recent research and also provide a venue for immediate feedback for the researcher.[23] Publication practices across the arc of community college librarians' careers could be a fruitful area for future research.

When asked about research topics, survey participants were able to select any number of responses that seemed relevant to their work. It is no surprise that, for the 138 respondents who conducted research in the preceding five years, 119 said they have researched in the LIS discipline (86.23%), while all other disciplines together were only selected by 59 individuals (42.75%). In considering specific areas of LIS, public service was reported to be the focus of research by the largest number of participants (48 of 119/40.34%), with library management a distant second (21/17.65%). The focus on public service topics may be because, in many community colleges, librarians from all areas of library work provide reference and instruction services. In addition, student learning—that is to say, instruction, a component of public services in libraries—is a popular focus for research in higher education overall, not just in libraries. This dominance of public services as a research topic is very interesting considering that the demographic data indicate that librarians who work in technology are most likely to have engaged in research (43 of 65/66.15%), followed by those in management (51 of 83/61.45%) or technical services (35 of 57/61.40%). Public services come in fourth out of five (114 of 196/58.16%) (see table 4).

TABLE 4
Librarians Who Conduct Research, by LIS Area

	Respondents working in that LIS area[a] (n = 234)	Percentage	Respondents working in that LIS area who have done research[b]	Percentage
Technology	65	27.78%	43	66.15%
Library Management	83	35.47%	51	61.45%
Technical Services	57	24.36%	35	61.40%
Public Services	196	83.76%	114	58.16%
Access Services	71	30.34%	40	56.34%

Source: authors' calculations
[a]Question specified "select all that apply"
[b]Question specified "in the past five years"

Collaboration emerged as an important theme in this study. More than half of the 138 researchers had done solo research during the previous five years (87/63.04%), but even more had worked collaboratively on one or more projects (103/74.64%). Just over one quarter of them had *only* worked on solo research projects (35/25.36%). This may be attributable to the collaborative nature of much of the work that librarians do. Most reported collaborations involved librarians working with individuals from their own institution (78 of 103/75.73%), followed by those who reported collaboration with individuals from other institutions of higher education (40 of 103/38.83%), and just over 10 percent with individuals from organizations beyond higher education (11 of 103/10.68%). The survey also asked participants whether their collaborative partners came from "within the library," "non-library academic departments," or "other."[24] Some of the most interesting data to emerge from this area of inquiry came from the open-ended descriptions related to "other" types of units within the organization. Counseling, human resources, financial aid, and facilities were all mentioned by respondents who collaborated with other higher ed partners, while two respondents reported they had done collaborative research with architects from non-academic institutions. Through comments, the author's learned that some community college librarians find it easier to collaborate with classroom faculty than with their own library colleagues, for a variety of reasons. Others mentioned that they are only allowed to carry out this work during compensated working hours when it involves work with non-library colleagues as part of a campus-wide committee.

Motivation to Research and Publish (or Not)

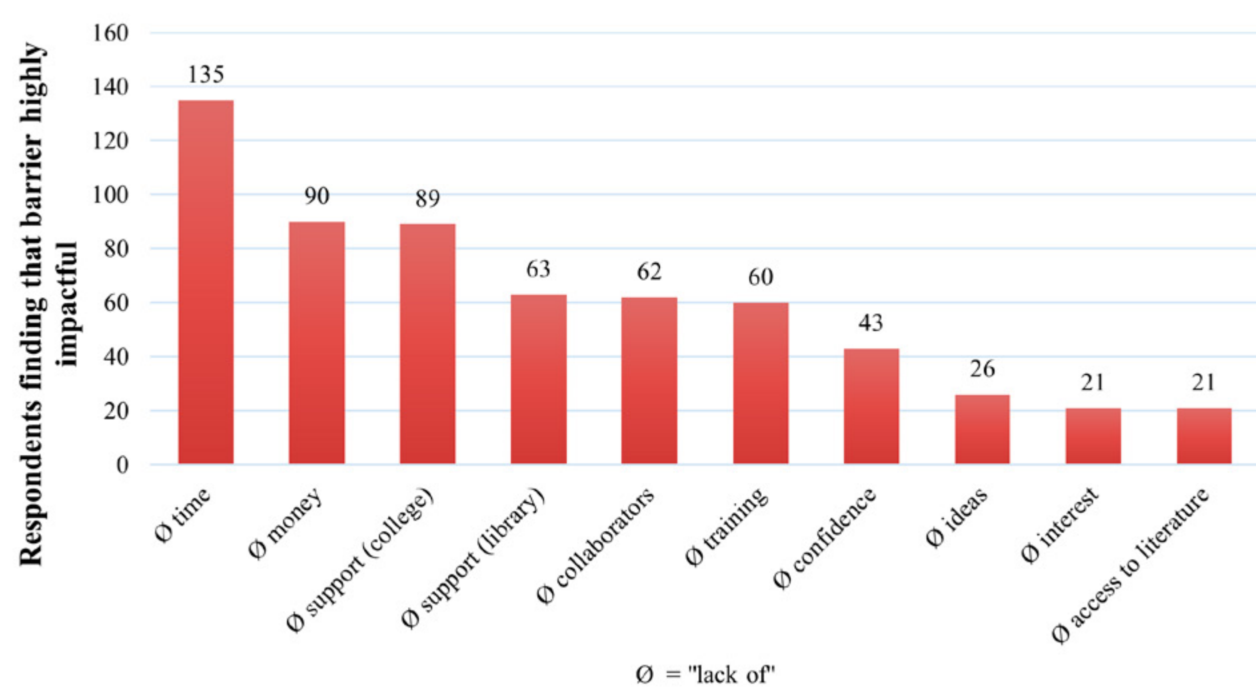
Some respondents discussed the reasons why they do *not* engage in research or publication. One common response was the lack of external motivation in cases where this kind of activity is not required of them as a part of their job, nor as a factor in tenure or promotion decisions. One individual described a distinct lessening of motivation for scholarship activity after transitioning from a four-year institution with a strict mandate to research and publish. Another worried about taking away valuable presentation opportunities from others for whom this area of work is required. Another librarian reported that they did not believe that anyone from their institution would take their research findings seriously. Finally, one participant described "being told community college librarians aren't supposed to publish."

Barriers and Supports

When asked what barriers they had experienced related to research or research-related publication, lack of time was by far the most common response from participants (224/95.73%). The second and third most-often selected barriers were insecurity about their own research skills (207/88.46%) and an unmet need for funding (203/86.75%). Participants were also asked how impactful they felt these obstacles have been, on a scale of one (minimal impact) to five (completely insurmountable). Looking at the higher end of that scale—librarians who rated a given barrier four or five—well over half of individuals surveyed are really struggling with the issue of time (135/57.69%), followed at a distance by lack of money (90/38.46%) and a general lack of support from the institution (89/38.03%) (see Figure 3).

When asked about types of institutional supports that may have been available for those wishing to research or publish, participants reported that the supports most often available are professional development opportunities (183/78.21%) and distribution of information about professional development opportunities (170/72.65%). Potential institutional supports that might address the two most impactful barriers (lack of time and lack of money) fall way below. Time set aside specifically for research activities was available for only 28.63 percent of respondents (67); only research design support was less often available (64/27.35%).

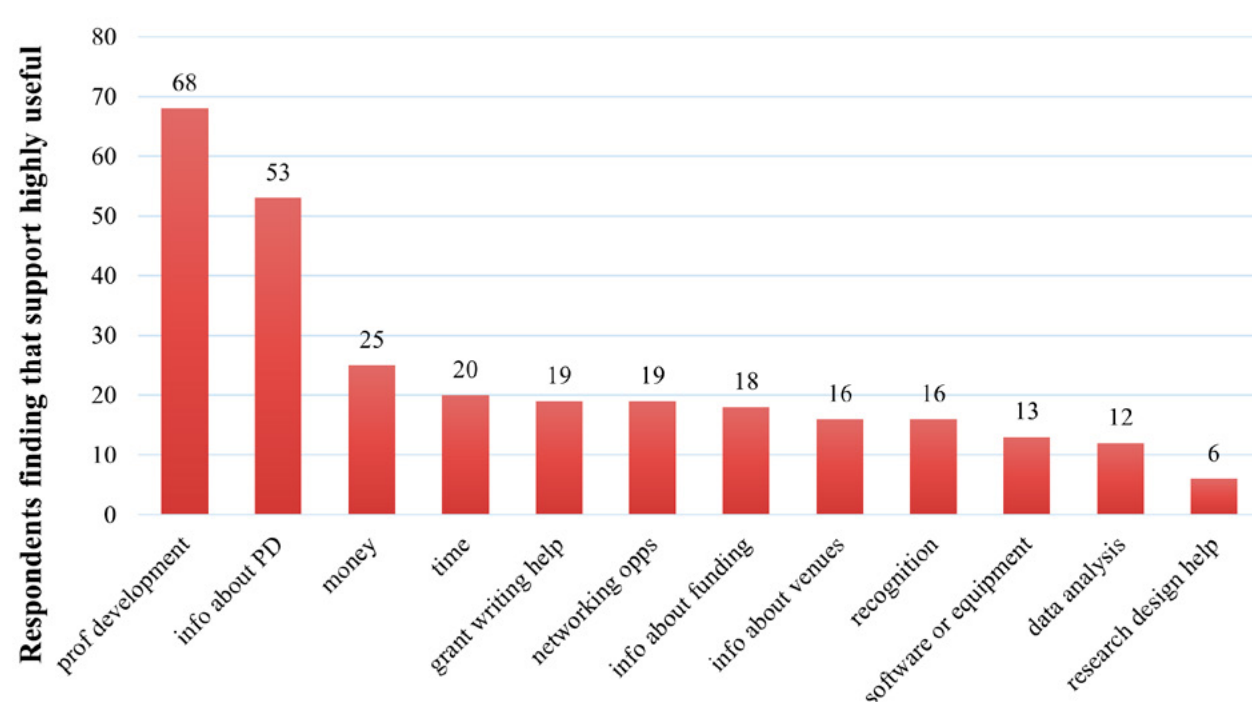
FIGURE 3
The Impact of Potential Barriers to Conducting Research or Engaging in Publication Tied to Research (*n* = 234)



Source: authors' calculations
Question posed a scale of one (minimal impact) to five (completely insurmountable), and this measure includes ratings of four or five.

Funding-related categories include distribution of information related to funding sources, at sixth place for availability out of twelve potential supports (101/43.16%), and funding itself, in eighth place (92/39.32%). The authors also asked respondents to tell them how useful these supports were for their research and publication activities, on a scale of one (not useful at all) to five (extremely useful), and specifically examined the responses that fell at the higher end of that scale, from librarians who rated a given support a score of four or five for usefulness (see figure 4).

FIGURE 4
The Usefulness of Institutional Supports for Conducting Research or Engaging in Publication Tied to Research



Source: authors' calculations
Question posed a scale of one (not useful at all) to five (extremely useful), and this measure includes ratings of four or five.

Mirroring the findings regarding the most impactful barriers, when the forms of institutional support that are considered most useful by those who have access to them are considered, the leading answer, again, is time. As mentioned earlier, lack of time was both the most reported and the most impactful barrier for librarians who might want to research or publish. In addition, of the ninety-one open-ended survey comments related to barriers, forty-six concern lack of time (50.55%). When asked about institutional supports, only a relatively small number of survey respondents reported that compensated time for research or publication was made available to them (67/28.63%). Just a little over half of those who were offered research time have taken advantage of it (38 of 67/56.72%). And yet, this type of support is most appreciated by those who have taken the opportunity to use it (20 of 38/52.63%). A number of participants talked about the need to do research and writing for publication "on their own time." While faculty in non-library departments often have significant control over how they spend their non-classroom work hours, librarians are typically scheduled to work full-time in the library, for the most part focusing on tasks related to library operations. Understandably, respondents worry that work-life balance will suffer if they use evenings and weekends to research and write. This situation causes "a lot of frustration." Discussion of lack of time is often paired with mention of inadequate staffing in libraries, whether a funding issue or a matter of institutional policy. Multiple respondents mentioned the strict prioritization of library operations as a barrier.

This lack of time to devote to research and publication is also by far the most apparent barrier mentioned in the literature, regardless of type of institution.[25] For example, Smigielski, Laning, and Daniels reported that, while over 86 percent of the research library directors they surveyed believe that dedicated time for research and publication activities has a positive impact on librarian researchers' success, only just over 70 percent of libraries offering tenure and under 67 percent of those without tenure offer this kind of support.[26] Fox surveyed Canadian research librarians, reporting that these full-time professionals spent approximately forty-seven hours per week on all job responsibilities, dedicating less than five of those to scholarly activities. While these librarians would like to be able to spend about 15 percent of their time on scholarly pursuits, they are able to dedicate just 7–8 percent.[27] Many academic librarians have complex jobs, with both overlapping and competing responsibilities. Still, there is an anecdotal understanding that lack of time and competing responsibilities may impact community college librarians to a greater extent, as evidenced in a number of comments from survey participants describing the rationale that community colleges are, by definition, focused more on teaching than research. This would be an interesting question for future research.

According to survey results, funding, the third most common and second most impactful barrier, ranks fourth for usefulness as a form of support (25 of 78/32.05%) (see figure 4). In addition to funding for research-focused release time and adequate staffing, more direct costs may include access to specialized software or equipment, which came in fifth on our list of useful supports (13 of 50/26%). Lack of funding may also impact librarians' ability to participate in professional organizations, or to attend conferences and symposia. When librarians are encouraged to become active beyond their own institution, and afforded the time and funding to do so, they can keep abreast of trends and best practices and connect with potential research collaborators. As mentioned earlier, some associations also provide professional development opportunities related to research, either free with membership or through more formal fee-based programs such as the LRI mentioned earlier and the Assessment in Action program of ACRL.[28] However, participation requires an investment of time and funding that may be difficult for librarians to cover on their own.

A good portion of survey participants indicated they were severely challenged by their own insecurity about research skills (43/18.38%). This finding accords with those of Crampsie, Neville, and Henry; Kennedy and Brancolini; and Burdick et al., who each described lack of research confidence as an issue in the populations they studied.[29] Although Ackerman, Hunter, and Wilkinson report that 65 percent of their survey respondents had at least one research methodology course under their belt, they heard from many of their respondents that they had not received this type of training, whether in their MLIS programs or via other initiatives.[30] Survey participants in the present study talked about lacking confidence or feeling "out of my element even considering being a contributor." A lack of access to the research literature registered as the least impactful barrier (21/8.97%), tied with a lack of personal interest in doing research. Community colleges are not research institutions, as has been mentioned previously, and they may not be set up to provide access to the research literature in any given discipline, not just in librarianship. The low level of impact for this barrier is most likely due to the ability of individuals to circumvent this situation by use of interlibrary loan, but this was still seen as a challenge, adding a layer of effort to an already difficult task.

Institutions and Organizational Cultures

Close to two-thirds of the 234 community college librarians who responded to the survey have faculty status (147/62.82%), but less than half are tenured or on the tenure track (108/46.15%). Being in a position with faculty status did not have a large impact on whether survey respondents had done research in the past five years, but being tenured or on the tenure track did make a noticeable difference. Just over two percentage points separate those with faculty status who had completed research during the past five years from those without faculty status, while just over 14 percentage points separate those tenured or on the tenure track who had conducted research versus those not on the tenure track (see table 5). When it comes to research publication/presentation, these differences are slightly less important. Just over four percentage points separate faculty members who have published or presented from non-faculty author/presenters, and there is more than a 11.5 percentage point gap separating those tenure-track or tenured individuals who published or presented from those not tenured or on the tenure-track.

TABLE 5
Differences in Research and Publication/Presentation Rates Based on Faculty Status or Being Tenured or on the Tenure Track

		Respondents	Percentages	Respondents Who Have Done Any Research[a]	Percentages	Respondents Who Have Done Any Publication Or Presentation[a]	Percentages
Faculty status[b]	**yes**	147	62.82%	88	59.86%	65	42.22%
	no	87	37.18%	50	57.47%	33	37.93%
Tenure/ tenure track[b]	**yes**	108	46.15%	72	66.67%	52	48.15%
	no	126	53.85%	66	52.38%	46	36.51%

Source: authors' calculations
[a]Questions specified "in the past five years"
[b]Numbers for respondents designating "no" include individuals whose institutions provide faculty status or tenure to librarians, but these individuals did not serve in those roles

Several survey participants mentioned in comments that they are not considered faculty and therefore are not expected to pursue research or publication. As alluded to earlier, in some community colleges the traditional emphasis on teaching effectively devalues scholarship activities. Relevant comments from participants included that "institutional supports for research and publication are simply not in the DNA of community colleges," or, in a library where the respondent is the first, historically, to show an interest in research, "it feels like as a new librarian I'm trying to figure this out completely on my own." A few respondents reported that tenure or promotion requirements for librarians in their institutions focus solely on library operations and services to students. In fact, in several institutions that do have a tenure track, no one—librarian or teaching faculty—is required or encouraged to conduct research. Reported negative institutional responses range from silence, apathy, or a lack of encouragement/expectation for research on one side, to antipathy or direct restrictions on participation in such activities on the other. Of course, all of this adds to a problem the current study aims to address: a lack of representation of community college library concerns in the scholarly literature. One way to think about research is that when we study our problems, practices, and the interactions our constituents have with us and with our libraries, we develop professionally, make evidence-based decisions about practice, and help members of our college community improve their teaching and learning. In other words, it helps librarians do their jobs more effectively. This suggests a certain shortsightedness in some of these institutional policies. Not only do these organizations not value research as a way to contribute to the field, they also do not value it as a means of development for their professional staff, nor as a means to improve services, thereby improving teaching and learning.

Education and Preparedness to Conduct Research

As mentioned earlier, fewer than half of our 234 survey respondents hold any advanced degree beyond an ALA accredited master's degree in LIS. For those 98 individuals, there is an apparent correlation between having a second master's degree and a 12 percent increased likelihood of having both conducted research (65 of 98/66.33%) and engaged in publication or presentation tied to research (48 of 98/48.99%). Reflecting on their own preparedness to do this kind of work, the authors of the present study recognize that the research and publication activities required or encouraged for their second or third advanced degrees has helped provide them with some of the skills and confidence that makes the leap into research and publication in LIS a more natural stretch. In addition, one survey respondent reported pursuing a PhD specifically in order to increase their research skills.

Conclusion

This project seeks to increase understanding of community college librarians' current research and publication behaviors and of their perceptions of research and publication in their libraries. The authors explore questions such as how much and what types of research and publication community college librarians do currently, what barriers and supports they encounter, and what motivates them to do this kind of work. The ultimate goal of this study is to support an increase in research activity and the representation of the experiences of community college librarians and their student patrons in the LIS literature.

Close to 60 percent of the community college librarians the authors surveyed have been active researchers during the past five years, most often investigating LIS-related topics, primarily in public services. Collaborating on research projects and focusing on areas related to the regular responsibilities of the job can be valuable strategies. Many participants attribute their success to the collaborative nature of their projects, and new initiatives aimed at making connections and building teams could prove valuable. Librarians who participate in committee or task-force work on campus may find ready collaborators in their colleagues from different areas of campus, and any shared project could become a focus for research. Networking and cohort-based professional development could help bring together researchers with complementary experience and skills and foster potential mentoring relationships. Participation in regional and national professional organizations should be recognized as valuable, both for networking opportunities and professional development.

Less than 30 percent of those who report research activity have done any research-related publication or presentation during the past five years. If some community college librarians are conducting research but not necessarily publishing or presenting their results, perhaps support initiatives aimed at demystifying the publication process and emphasizing the value of shared research findings could be a first step toward increasing representation. Respondents with six to ten years of experience are most likely to have researched or shared their findings. Support programming that targets community college librarians in their first five years of practice could prove particularly useful for those who are on a typical seven-year tenure clock and might also help instill in early-career librarians a lasting appreciation for this area of work. This may also contribute to the development of a corps of veteran, post-tenure researchers, who would be in an excellent position to mentor those who follow. For respondents in this study, conference presentations are the most popular type of venue for sharing their research, and it might be useful to begin to popularize the concept of conference presentation as just a first step in dissemination of research findings, encouraging eventual follow-up publication of a more complete analysis in other venues.

Considering perceived barriers and supports, time to devote to research and publication and funding for a range of resources seem to be most impactful for study participants, and external motivation in terms of requirements and formal expectations for scholarship are also very important. Shifting industry-wide workload issues or institutional policy seems daunting in the near term, but perhaps over time better representation in the literature of best practices for community college libraries can lead to higher valuation of librarians' research and publication work. In the meantime, however, respondents' insecurities about their research skills yields a more promising area for direct intervention. For example, innovative library leaders and organizations such as CJCLS could support advances in research by providing opportunities for librarians to gain experience and increase skill levels through professional development or mentoring. Several respondents mentioned the need to learn more about research design, qualitative and quantitative analysis, or how to use data processing software.

Increasing representation of the experiences of community college librarians and their students will expand knowledge related to issues that arise in that context, contribute to librarians' professional development, and ultimately support improved services for community college students. In the near term, the Scholarly Research Committee of CJCLS will be able to base their program of professional development and other types of support on this new understanding, and library and institutional leaders who are interested in increasing professional development for librarians or in contributing to a greater representation of community college librarians' concerns in the literature may also find this new information valuable.

Acknowledgements

The authors would like to thank the members of the CJCLS Scholarly Research Committee for the impetus for this research project and for continued support. They are grateful, as well, to all of the study participants who leant their time and attention to this endeavor and generously shared their experiences and perceptions.

Appendix A.

Survey Instrument

Eligibility to Participate

Are you an **academic librarian** who has been employed within the past five years as a librarian at one or more **community or junior colleges**? (By "community or junior college," we mean any two-year, post-secondary educational institution that offers an associate's degree and/or certifications.)

Yes/No

Research Activity

In the past five years, for how many **research projects** have you served **as a researcher/ investigator**? (By "research project," we mean any project that involves gathering data and analyzing it either to improve practices or better understand the world. This may or may not involve publication of findings.)

- ◻ 0 projects
- ◻ 1–5 projects
- ◻ 6–10 projects
- ◻ 11–15 projects
- ◻ 16–0 projects
- ◻ 21 projects or more

In the past five years, **in what disciplines** have you done research? (select all that apply)

- ◻ LIS (Library and Information Science)
- ◻ Social Sciences
- ◻ Natural Sciences
- ◻ Humanities
- ◻ Mathematics
- ◻ Business
- ◻ Other (please describe)

Which library-related activities would you describe as closely related to your LIS research topic(s)? (select all that apply)

- ◻ Public Services
- ◻ Access Services
- ◻ Technical Services
- ◻ Technology
- ◻ Library Management
- ◻ Other (please describe)

For how many research projects in the past five years have you been designated as **Principal Investigator** or **Co-Principal Investigator**? (By "Principal Investigator" we mean the researcher/investigator who takes primary responsibility for the project.)

- ◻ 0 projects
- ◻ 1–5 projects

- □ 6–10 projects
- □ 11–15 projects
- □ 16–20 projects
- □ 21 projects or more

How many **solo research** projects have you conducted in the past five years? (By "solo research," we mean research where you have been the sole investigator, although your project may have involved research assistants or the help of other individuals).

- □ 0 projects
- □ 1–5 projects
- □ 6–10 projects
- □ 11–15 projects
- □ 16–20 projects
- □ 21 projects or more

In the past five years, how many **collaborative research** projects have you been a part of? (By "collaborative research," we mean those projects where you served as a researcher/investigator in collaboration with one or more additional researchers/investigators.)

- □ 0 projects
- □ 1–5 projects
- □ 6–10 projects
- □ 11–15 projects
- □ 16–20 projects
- □ 21 projects or more

In the past 5 years, have you collaborated on research projects with other researchers/investigators **from your own institution**? (By "your own institution," we mean the community or junior college you were working for at the time.)

□ Yes □ No

For those collaborations with researchers/investigators *from your own institution*, how would you describe **their position within the institution**? (select all that apply)

- □ From within the Library department/staff
- □ From non-library academic department(s)
- □ From other entities within the institution (please describe)

In the past five years, have you collaborated on research projects with researchers/investigators who were employed **at other higher education institutions**?

□ Yes □ No

For those collaborations with researchers/investigators *from other higher education institutions*, how would you describe **their position within the institution**? (select all that apply)

- □ From within the Library department/staff
- □ From non-library academic department(s)
- □ From other entities within the institution (please describe)

In the past five years, have you collaborated on research projects with researchers/investigators from other, **non-higher-education institutions**? (By "non-higher-education institutions" we mean any institution or organization that is not a post-secondary educational institution.)

□ Yes □ No

For those collaborations with researchers/investigators *from non-higher-education institutions*, how would you describe **their position within the institution**? (select all that apply)

- □ From within the Library department/staff (if there is a library)
- □ From other entities within the institution (please describe)

Publication Tied to Research

How many times in the past five years have you engaged in **publication activity tied to research**? (By "publication activity tied to research," we mean sharing research results or narratives about research processes in any kind of publication or live/virtual presentation.)

- □ 0 projects
- □ 1–5 projects
- □ 6–10 projects
- □ 11–15 projects
- □ 16–20 projects
- □ 21 projects or more

What **types of venues** have you used for publication tied to research activity? (select all that apply)

- □ LIS-related, peer-reviewed academic/scholarly journals or books
- □ LIS-related, editorially reviewed (but not peer-reviewed) academic/scholarly journals or books
- □ LIS-related trade publication
- □ LIS-related blogs or websites
- □ LIS-related conferences, symposia, institutes, etc. (virtual or face-to-face)
- □ Non-LIS-related peer-reviewed academic/scholarly journals or books
- □ Non-LIS-related, editorially reviewed (but not peer-reviewed) academic/scholarly journals or books
- □ Non-LIS-related trade publication
- □ Non-LIS-related blogs or websites
- □ Non-LIS-related conferences, symposia, institutes, etc. (virtual or face-to-face)
- □ Other (please describe)

Barriers and Supports

In the past five years, have you experienced any of these **potential barriers** to conducting research or engaging in publication tied to research (indicate whether you've experienced these or not, and indicate for each **how impactful** that obstacle has been for your ability to conduct research and/or engage in publication tied to research)

	0 I have never experienced this	1	2	3	4	5 Completely insurmountable
Lack of time						
Lack of money						
Lack of my own personal interest in doing research						
Lack of research ideas						
My own insecurity about my research skills						
Lack of training opportunities						
Lack of opportunities to collaborate						
Little or no access to research literature						
Lack of support from within the library						
Lack of support from beyond the library within the institution						

Are there any comments you'd like to add related to **potential barriers** to research or publication tied to research?
[open]

In the past five years, which of these institutional supports for conducting research or engaging in publication tied to research have been available to you? (indicate whether these have been available to you or not, and indicate for each how useful that support has been for your ability to conduct research and/or engage in publication tied to research)

	n/a This has not been available to me, or I am not aware of it	0 This has been available, but I have not taken advantage of it	1	2	3	4	5 Extremely useful
Research leave or reassigned time specifically for research activities							
Research design support							
Data analysis support							
Professional development opportunities							

Distribution of information related to professional development opportunities							
Funding							
Distribution of information related to funding sources							
Support for the grant application process							
Distribution of information related to opportunities for publication tied to research							
Formal internal networking opportunities							
Formal recognition for research activities/ accomplishments							
Access to specialized software or equipment							

Are there any comments you'd like to add related to **institutional supports** for research or publication tied to research?
[open]

Demographics

What is your age?

- □ Less than 20 years old
- □ Between 20–30 years
- □ Between 31–40 years
- □ Between 41–50 years
- □ Between 51–60 years
- □ 61 years old or older

For a total of how many years have you served in a **professional librarian position**? (include part- or full-time; subtract any gaps in non-sequential employment)

- □ Less than 1 year
- □ 1–5 years
- □ 6–10 years
- □ 11–20 years
- □ Over 20 years

During the past five years have you served in any of the following
Capacities?

- □ As a full-time librarian
- □ As a part-time librarian
- □ In both full-and part-time librarian positions

In the past five years, in what **areas of librarianship** have you worked? (select all that apply)

- □ Public Services
- □ Access Services
- □ Technical Services
- □ Technology
- □ Library Management
- □ Other (please describe)

Do you hold a Master's degree from a program accredited by the American Library Association?

□ Yes □ No

Do you hold any advanced degrees **other than** a Master's degree from a program accredited by the American Library Association?

□ Yes □ No

Besides a Master's degree program accredited by the American Library Association, what **additional advanced degree(s)** do you hold and from **what discipline(s)**?
[open]

During the past five years, have you served in a librarian position with **faculty status**?

- □ Yes
- □ No – my institution(s) provide faculty status for librarians, but I did not serve in that role
- □ No – my institution(s) do not provide faculty status for librarians

During the past five years, have you served in a librarian position **with tenure or on the tenure track**?

- □ Yes
- □ No – my institution(s) employ tenure-track librarians, but I did not serve in that role
- □ No – my institution(s) does not employ tenure-track librarians

Was librarianship your **first career**?

□ Yes □ No

What are/were your **previous career(s)**? (please describe)
[open]

How is your current two-year, post-secondary institution **funded**?

- □ Publicly funded
- □ Privately funded
- □ Some other funding model (please describe)

What is the **FTE** (Full-Time Equivalent) for your current two-year, post-secondary institution?

- □ 1,000 FTE or less
- □ 1,001–5,000 FTE

- □ 5,001–10,000 FTE
- □ 10,001–15,000 FTE
- □ 15,001–20,000 FTE
- □ 20,001 or more
- □ Unsure

Is your current two-year, post-secondary organization part of a **larger district or institution**? (By "larger district or institution," we mean a community college district, a multi-campus university, or any other umbrella institution).

- □ Yes/No

Please name the **larger district or institution** that organizationally includes your current two-year, post-secondary institution.
[open]

Which of the following best describes the **context** of your current two-year, post-secondary institution?

- □ Urban
- □ Suburban
- □ Rural
- □ Other (please describe)

Additional Comments

Is there **anything else you'd like us to know** about your research and publication practices?
[open]

Appendix B.

Code Book

Barriers and Comments

Category	Code	Notes
Institutional—Structural	Noirb	
	Nopower	There is support from individuals who have no power to help
	Not just libraries	Barriers impact academic departments as well as the library
	Not required	Not required for my job; not required for retention, promotion, or tenure; includes no faculty status
	Others-rank	Others do research in the institution, but no one in my position
	Lack of collaborators	
Institutional—Resource-related	Lack of funding	Referring to monetary resources; includes no travel support; does not include lack of money for staff, unless monetary resources are mentioned
	Lack of time	No time to do research; includes understaffing, workload issues, lack of paid time for this activity
Personal	Emotional	Emotionally charged response
	Immotivated	Personal motivation high, but barriers are tough/insurmountable
	Lack of motivation	Includes lack of interest, and the onus is on the individual
	My topic	Barriers to researching my topics of interest; includes that institutional interest is only in topics focused on institutional advancement
	No expertise	Lack of skill or knowledge; includes lack of confidence, lack of support, lack of training opportunities
Related to the profession	Lack of rep	Lack of community college representation in the literature; includes lack of appropriate venues for publication
	Poor lit access	Difficulty in accessing paywalled materials
Relational	Attitudes	Negative attitudes: apathy, disrespect, problematic organizational culture, includes no provision for academic freedom
	Bad relationships	Personality conflicts, dysfunctional relationships
	Defer to others	Desire to not take resources away from others who are required to do this activity

Supports: Comments

Category	Code	Notes
Institutional—Resource-related	Funding	Any mention of monetary support for research, publication, or presentation
	Lack inst resources	The institution does not have the resources to support
	Lack of funding	Referring to monetary resources; includes no travel support; does not include lack of money for staff, unless monetary resources are mentioned
	Lack of time	No time to do research; includes understaffing, workload issues, lack of paid time for this activity
	Tech infrastructure	For example, use of the institutional repository
	Time	Paid time for this activity; includes sabbaticals, etc.
Institutional—Structural	Ir support	Support from the department handling institutional research
	Lack of collaborators	
	Lack of ir support	No support from the department handling institutional research
	No ir	
	Not just libraries	Barriers impact academic departments as well as the library
	Not required	Not required for my job; not required for retention, promotion, or tenure; includes no faculty status
	Others-funding	Support only for big grant winners
	Others-rank	Others do research in the institution, but no one in my position
Personal	Lack of motivation	Includes lack of interest, and the onus is on the individual
	My topic	Barriers to researching my topics of interest; includes that institutional interest is only in topics focused on institutional advancement
	No expertise	Lack of skill or knowledge; includes lack of confidence, lack of support, lack of training opportunities
Relational	Attitudes	Negative attitudes: apathy, disrespect, problematic culture, no provision for academic freedom
	Kudos	
	Lack supervisor	No support from a supervisor
	Supervisor	Support from a supervisor

Additional Comments

Category	Code	Notes
Institutional—Resource-related	Lack of time	No time to do research; includes understaffing, workload issues, lack of paid time for this activity
Institutional—Structural	Change coming	Predicts additional support at the institution
	Would like	Would like to engage in this activity, but…

Personal	Lack of motivation	Includes lack of interest, and the onus is on the individual
	My topic	Barriers to researching my topics of interest; includes that institutional interest is only in topics focused on institutional advancement
	No expertise	Lack of skill or knowledge; includes lack of confidence, lack of support, lack of training opportunities
	Outside pd	Includes pursuing a degree to increase expertise
	Pers sat	Personal satisfaction is an important motivator
	Profession	Ability to improve the profession is an important motivator
Relational	Attitudes	Negative attitudes: apathy, disrespect, problematic culture, no provision for academic freedom
	Lack supervisor	No support from a supervisor

Notes

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19. Whitmell, "Building," 236.

20. For the purposes of this study, community colleges are defined as two-year, post-secondary educational institutions that offer associate's degrees or certifications.

21. One weakness in the survey design became apparent in the initial review of data because seventeen respondents said they had done no research at all in the previous five years but had participated in "publication related to research" during that time. The authors assume that these individuals either published research during that time period (which had been carried out in prior years), or participated as coauthors of research reports for projects where they did not serve as researchers/investigators. The authors elected to retain the publication-related data for these respondents.

22. Ackerman, Hunter, and Wilkinson, "The Availability," 556. Their research population was primarily made up of librarians working in doctoral, masters, or baccalaureate institutions, but may have included just a few community college librarians within the 3 percent "other" category.

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27. Fox, "Finding Time," 451. At the same time, Fox found that few of these participants reported taking advantage of the leave or sabbatical benefits that were made available to them.

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Judging Journals: How Impact Factor and Other Metrics Differ across Disciplines

Quinn Galbraith, Alexandra Carlile Butterfield, and Chase Cardon

Given academia's frequent use of publication metrics and the inconsistencies in metrics across disciplines, this study examines how various disciplines are treated differently by metric systems. We seek to offer academic librarians, university rank and tenure committees, and other interested individuals guidelines for distinguishing general differences between journal bibliometrics in various disciplines. This study addresses the following questions: How well represented are different disciplines in the indexing of each metrics system (Eigenfactor, Scopus, Web of Science, Google Scholar)? How does each metrics system treat disciplines differently, and how do these differences compare across metrics systems? For university libraries and academic librarians, this study may increase understanding of the comparative value of various metrics, which hopefully will facilitate more informed decisions regarding the purchase of journal subscriptions and the evaluation of journals and metrics systems. This study indicates that different metrics systems prioritize different disciplines, and metrics are not always easily compared across disciplines. Consequently, this study indicates that simple reliance on metrics in publishing or purchasing decisions is often flawed.

Introduction

Bibliometrics, statistics used to measure the significance of academic sources, have been in use since well before the existence of online publications. One of the most popular bibliometrics is the Journal Impact Factor (JIF). Since JIF's creation in 1975, the academic world has become irrevocably saturated with bibliometric data. One recent study found that 87 percent of universities supported using Impact Factor in promotion and tenure evaluations with no reservations, 13 percent supported it with some reservations, and *no* universities opposed using the Impact Factor to evaluate scholarship quality.[1] Impact Factor and other similar metrics are used by universities and other groups to make decisions about individual performance regarding funding, tenure, and research quality.[2] Similarly, research librarians are increasingly responsible for providing bibliometric information to their academic communities.[3] Journals, articles, and scholars can all seemingly be defined by a few simple numbers. However, the use of bibliometrics in the academic world creates complications because a simple number cannot sum up the entirety of a scholar's impact, and interdisciplinary differences create strong distinctions in disciplines'

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metrics values.[4] Given these limitations, scholars are increasingly suspicious of using bibliometrics, and some have suggested that the academic community give up the journal metric system entirely.[5] However, most scholars, including the authors of this study, agree that journal metrics should not be abandoned altogether but should be used with caution and in reference to each other.[6] Two established facts therefore emerge from the literature: measuring research by metrics is somewhat flawed, but metric systems retain value and will continue to be used.

Since metrics will still be used, and the "simple-minded comparison" of two metrics "will give meaningless results unless the indices are properly corrected for the fact that different science fields have different citation habitudes," our study examines the disciplinary differences between journal metrics in the databases of Scopus, Eigenfactor, Web of Science, and Google Scholar.[7] Previous research has suggested that these databases have been growing consistently and with enough stability to allow for a cross-disciplinary study of them such as this one.[8] Although not all of these metric systems claim to offer metrics for all disciplines, they are frequently used as if they do, thus indicating a need for research like this. Impact Factor, for example, has asserted that it should not be used for Humanities journals, yet, in our experience, Humanities professors and students still attempt to use Impact Factor to assess their work.[9] While previous scholars have offered their own systems for attempting to normalize disciplinary differences in bibliometrics, these systems are often complex and are, in the end, essentially unused.[10] Therefore, we seek to offer academic libraries, rank and tenure committees, and other interested persons some simple trends for distinguishing the general differences between journal metrics in various disciplines. Our research also suggests which disciplines are best represented by which metrics systems.

For librarians, metrics usage is critical. Subject librarians may use metrics when deciding what journals to purchase, or they may use them in connection with conducting their own research or offering research help to others. Librarians who work closely with faculty have to be able to inform faculty on how to evaluate publications and journals in terms of impact and usage; this is particularly true for newer faculty seeking tenure, who have to be able to make a case for the significance of their scholarship. In administration, librarians may be asked to make rank and tenure decisions based on metric-based information. A library that uses metrics efficiently has a better, more expansive role in its academic community.[11] In our experience, many faculty are unaware of the most relevant metrics systems in their field, and even academic librarians are often unsure of how to interpret metric data. This perceived gap was noted in 2016 by Malone and Burke, who found that academic librarians often needed to know about metrics systems but did not.[12] If more academic librarians educate themselves in this area, they will be more valuable to their academic and professional communities. Thus, the results of this study should help librarians counsel both new and seasoned faculty in choosing, using, and publishing in the academic journals most relevant to their own field. We seek to offer a quick, concise guide to bibliometrics for those current subject librarians.[13]

This study addresses the following two questions: How well represented is each discipline in the indexing of each metrics system (Eigenfactor, Scopus, Web of Science, and Google Scholar)? How does each metrics system treat disciplines differently, and how do these differences compare across metrics systems? In order to cover a wide range of disciplines, the following areas were addressed: finance, management, chemical engineering, mechanical engineering, psychology, economics, communication, philosophy, English, law, teacher education, education leadership, biology, exercise science, chemistry, and statistics.

Overview of Metrics

It is advantageous to offer a simple definition of each of the metrics referenced in this study. First, Web of Science calculates Impact Factor for a journal to measure the frequency with which an average article in the journal has been cited in a year; this is calculated by dividing the number of times articles were cited by the number of citable articles and is based on a two-year period.[14] Five-year Impact Factor is the impact when articles' influence is considered over a five-year period. It is calculated by dividing the number of citations a journal receives from a year by the total number of articles published from the last five-year period.[15] Google Scholar's h-index factor is the maximum value of *h* such that the journal has published *h* number of papers that have each been cited at least *h* times.[16] For example, if a journal has published fifty papers that have been cited fifty times, the h-index value of the journal would be 50, regardless of how many other less-cited papers have been published therein. Source-Normalized Impact per Paper (SNIP) is the ratio of a source's average citation count and the number of citations that the journal might expect to receive based on its field.[17] SCImago Journal Rank (SJR) is the average number of citations received during the year per document published in that journal in the previous three years and is weighted based on journal prestige.[18] The organization Scopus produces two different metrics for understanding journal prestige. Scopus CiteScore reflects the average yearly number of citations of recent articles published in a journal; it is calculated by taking the number of citations from one year of articles published in the last four years, then dividing that value by the number of articles published in those four years.[19] Scopus's other metric, the Scopus CiteScore Percentile, indicates how a journal ranks relative to other journals in its field. Eigenfactor also produces two metrics. Eigenfactor Score is the number of citations received from a journal's publications released in the last five years compared to total number of articles. Based on that value, Eigenfactor Article Influence Score is the average influence of any given article from that journal over the first five years of publication.[20] Overall, although strong similarities exist between the metrics, each bibliometric accounts for article and journal prestige slightly differently, thereby allowing for comparative studies such as this one.

The first popular metric system established in the academic world was Web of Science's Journal Impact Factor (JIF), which paved the way for future metrics systems. While being the first major and most common of the journal metrics, Impact Factor is easily skewed and therefore problematic.[21] Impact Factor provides quick information about a journal, but it only considers citations within two years' time, does nothing to distinguish specific article quality, and sometimes will unintentionally rate review articles better than original research.[22] Furthermore, Impact Factors are underprovided for many subject areas, including those in the arts, humanities, natural sciences, and social sciences.[23]

Two later metrics systems, Scopus and Eigenfactor, are comparable to the Impact Factor.[24] Eigenfactor, which was created to limit the impact of self-citation on metric score, ranks journals by looking at both the citations and their source, so and Eigenfactor score indicates a journal's importance in the scientific community with reference to both quality and size.[25] Similarly, Scopus attempts to account for both overall influence and citation.[26] Scopus has been noted for covering a greater range and number of subject matters and journals than Web of Science.[27] Based on Scopus, the SJR (Scimago Journal Ranking) score is created using both citation count and overall influence.[28] The SNIP (Source-normalized Impact per Paper) score, which is also Scopus-based, measures a journal's contextual citation impact, accounting for characteristics of the journal's subject field.[29] By accounting for field tendencies, SNIP is therefore meant to allow for easier comparisons across fields, although it does not account for self-citation or review articles.[30] Scopus and Eigenfactor therefore challenge Impact Factor in a way that has allowed for greater comparison of metrics, particularly across disciplines.

The most recent metric to emerge is provided by Google Scholar. Google Scholar's database is known for having the greatest number of citations indexed, although this can be complicated to interpret since Google Scholar has a higher tendency to include sources that are less academic.[31] Google Scholar also fails to account for self-citation and duplicates.[32] Google Scholar is, however, significantly better than Scopus and Web of Science at finding journals in foreign languages and in the fields of the humanities, social sciences, business, engineering, and economics.[33] It is also known for being geographically neutral, compared to Web of Science's American bias and Scopus' British bias.[34] Despite being newer to the metrics world and having some limitations, Google Scholar has therefore begun to gain popularity.

A final growing area of metrics is the field of altmetrics, ways of measuring scholarship's popularity that are not based on typical academic avenues. This can take the form of news attention, number of views, sharing on social media, etc. Recent research has begun to be increasingly interested in the field of altmetrics. However, a study by Costas, Zahedi, and Woutor indicates that altmetrics are still not widely used in academic circles, and Thelwall's research indicates that altmetrics can be just as problematic as traditional bibliometrics.[35] Given these complications, our study focuses solely on comparisons between bibliometric systems. A 2014 study by Alhoori and Furuta introduced the "Journal Social Impact" score, a way of measuring an article's popularity among sources like Facebook, Reddit, and Pinterest; the authors found a high correlation between their score and traditional bibliometric scores, suggesting some relationship between the two.[36] On the other hand, this relationship has been somewhat complicated by Garcia-Villar's more recent study, which presents a more nuanced connection between biblio- and altmetrics.[37] In some instances, altmetrics can even be used to predict future bibliometric success of journal articles.[38] This suggests that future research may need to take altmetrics into account when comparing bibliometrics—particularly since Thelwall found that altmetrics also varied strongly by discipline—but analysis of altmetrics was beyond the determined scope of this study.[39]

Literature Review

Significant research has been done to understand the relationship between the different metrics ranking systems. A strong correlation exists between Impact Factor and both Scopus and Eigenfactor, which has led some scholars to conclude that either Scopus or Eigenfactor could be used comparably.[40] One study suggests that SJR and Impact Factor have a high correlation, but the correlation between Eigenfactor and Impact Factor is not nearly as high.[41] SJR tends to concentrate highest scientific influence in fewer journals compared to the Impact Factor.[42] A study related to journal purchasing suggests that Scopus may provide more accurate metric information for the health sciences, while Web of Science may be more valuable for other disciplines.[43] Another new potential emerging metric system is the Journal Citation Indicator, released in 2021 in an attempt to normalize variations between academic fields.[44] However, this new metric has not been considered in this study, which rather seeks to understand the relationships between more long-standing and widely used metrics. Ultimately, different metric systems have different disciplinary preferences and different theoretical backgrounds, so they are calculated in different ways, meaning that using a combination of metrics systems is best.[45] Consequently, we decided that this study would compare different metrics systems across various disciplines to understand how the metrics systems and disciplines may be interpreted alongside each other. While some other studies have attempted to understand individual disciplines' relationships to metrics or have attempted to compare one metric to another,[46] our study is unique in its comparison of multiple metrics systems simultaneously and its desire to understand how metrics compare to each other across many different disciplines.

Some comparison of journal metrics by discipline has previously been undertaken, both in the field of higher education generally and in specific fields. Although none have been as comprehensive as this study, which includes comparisons between disciplines across academic fields, valuable insights have been gained from this previous work. For example, in the field of communication, Repiso-Caballero and Delgado-López-Cózar found that Google Scholar accounted better for journals in non-English languages than Scopus and Web of Science; Google Scholar also doubled the number of journals available compared to Scopus and tripled compared to Web of Science.[47] In the fields of communication and chemical engineering, Impact Factor, h-index, and Eigenfactor scores from different metric databases are all highly correlated with each other.[48] On the other hand, in the nuclear medicine field, despite finding a strong similarity between Google Scholar, Scimago, and Web of Science, Zarifmahmoudi et al. found Google Scholar and Web of Science to be missing journals, particularly non-English journals.[49] In the fields of anatomy and morphology, Web of Science, Eigenfactor, and SJR all ranked journals differently.[50] The fields of occupational therapy, anatomy, and morphology reported similar changes in ranking by database.[51] A variety of other subject-specific studies such as these have been conducted.[52] One of the most valuable studies has been *Meaningful Metrics*, which discusses disciplines individually in terms of their use of metrics but does not compare metrics more specifically.[53] Another valuable comparative study is Wouters et al.'s study, which provides a literature review of studies comparing Web of Science, Scopus, and Google Scholar.[54] These previous studies are helpful in understanding the multitude of complexities that exist in comparing journal metrics, but their incomprehensive nature necessitates a study such as this one, which combines different subject areas to create a more holistic, comparative picture.

Many studies compare disciplines that are closely related to determine differences in metric rating systems. Lillquist and Green, for example, analyzed various science fields and found that physics, biology, and chemistry had the highest h-index values and significantly out-published mathematics faculty in both quantity and h-index ranking.[55] Similarly, Batista et al. found that physics publications ranked highest based in regard to metrics, followed by chemistry, then biology, then mathematics.[56] Kamdem et al. found pharmacology as the field with the most scientific productivity, followed by biochemistry, then physiology and biophysics.[57] These studies indicate that different fields, including closely related fields, are ranked differently in their metric evaluations. Comparing fields therefore requires an understanding of the general trends in the different rankings. Based on this research, we expect to see strong differences between how each discipline is treated by each metrics system, because of both the differences in discipline publishing tendencies and the differences in the metrics systems themselves. Understanding these differences will be invaluable in understanding how metrics systems can be of better use to the academic community, and it will indicate how individual librarians and academic libraries can best use metrics.

Methodology

At the beginning of this study, we compiled a list of universities with ARL libraries, as this was determined to be a satisfactory indicator of stellar research quality.[*] From this list, we created a sublist of universities of approximately the same size, student makeup, and research output as the authors' university. This was done in the hopes of considering three universities with comparable research quality, output, and goals. From this shorter list, three universities (Brigham Young University, the University of Texas at Austin, and Virginia Tech) were selected, one being the researchers' own university and the other two being selected randomly from the list of comparable ARL library universities. Based on the first university, Brigham Young University, two departments were randomly selected from each college, colleges being employed to allow for a wide range of academic areas of research. We attempted to use the same departments from each university, although this was not always possible.[†] Using a random stratified sampling model, 10 full or associate professors were randomly selected from each previously determined department. Faculty members were only chosen if their curriculum vitae (CV or vita) were available either on their university website or via Google Scholar.[‡] This gave us approximately 160 faculty members per school, yielding an approximate total of 480 faculty.

Influenced by the study of engineering metrics by Lillquist and Green, which analyzed only tenured professors due to the potential differences in rank, we chose to look at only full and associate professors, since associate professors have expertise and publishing experience comparable to that of their full professor counterparts.[58] Furthermore, including associate professors in our sample size allowed for a larger sample and let us include departments that had fewer full-rank professors. While some assistant professors are well published, we decided against using assistant faculty members, since many of them have not had sufficient time in their position to publish extensively. We aimed for choosing professorial positions with a significant number of publications so that more journals would be available for our list; our ultimate goal was a large, random selection of academic journals.

Once we compiled a list of teaching faculty with online vitas, student research assistants created a spreadsheet listing each article that was published by a faculty member in a peer-reviewed journal. This required the students to look up each individual journal online to make sure it was peer-reviewed. All of this was done in an effort to get a list of journals in which faculty of various

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[*] Arguably, a number of other qualifications could have been used to determine research quality of university. The Carnegie Classification of Institutions of Higher Education, for example, may have also been a good choice. However, given our interest in how metrics can apply to academic librarians, we chose to use an indicator based on stellar academic libraries.

[†] In some cases, departments could not be matched exactly. BYU's Exercise Science department was paired with University of Texas' Kinesiology and Health Education Department and Virginia Tech's Human Nutrition, Food and Exercise Sciences Department. The biology departments of BYU and Virginia Tech were paired with the University of Texas' Integrative Biology department. In the field of Education, the departments used for BYU were Teacher Education and Educational Leadership and Foundations, the departments for the University of Texas were Curriculum and Education and Educational Leadership and Policy, and no department distinctions were made for Virginia Tech (all faculty were chosen from their entire School of Education). Furthermore, Virginia Tech did not have a law school, so results for Law are calculated solely from the BYU and University of Texas data.

[‡] The number of faculty members without online CVs varied widely, based on department and university. Seemingly, some departments prioritized or required listing an online CV; this meant that in some cases, students could use the first ten randomly selected professors from the department. On average, students estimated that 15–20 percent of the first ten professors selected in a department would not have a CV available online or on Google Scholar.

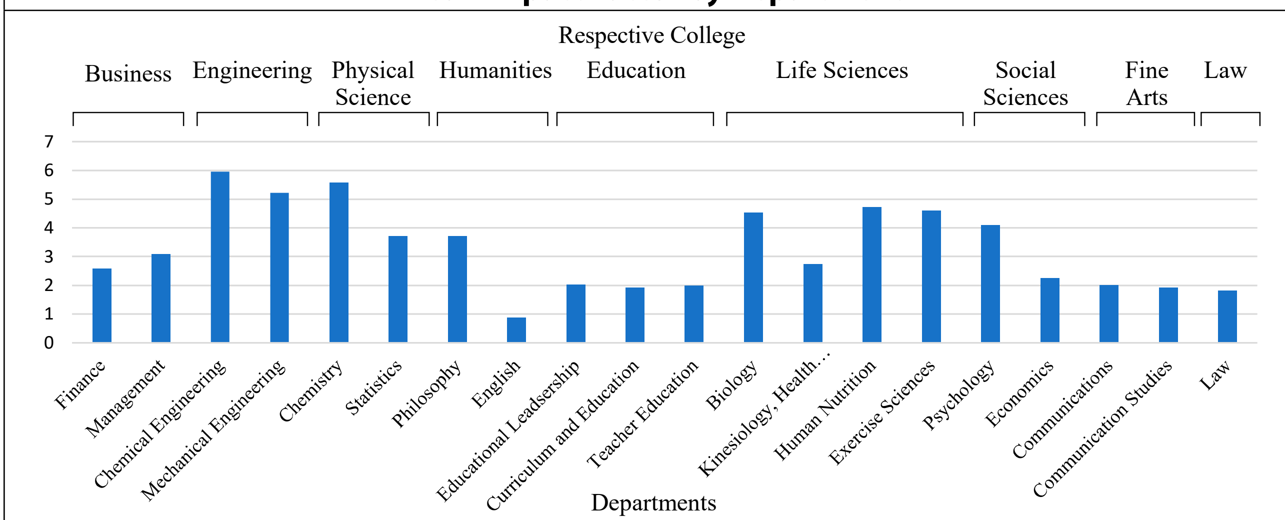
disciplines published their work. For each journal in the list, student research assistants found the metrics from Eigenfactor (including Eigenfactor score and Eigenfactor Article Influence Score), Scopus (Scopus Cite Score, Scopus CiteScore Percentile, SJR, and SNIP), Web of Science (Impact Factor and 5-year Impact Factor), and Google Scholar (h5-index score). When no metric existed for the journal, the field was marked as blank. In the end, our study was able to examine 8,418 unique journals. Data for this study was collected from January to August of 2020.

In cases where the curriculum vitae of the faculty member was not accessible online but a verified Google Scholar profile was available, the list of publications was taken from the Google Scholar profile. This allowed us to include a larger pool of faculty and, ultimately, a greater number of journals. If the faculty's publication information was not available online in any form, a different faculty member from the department was randomly selected. This created some selection bias in favoring faculty members with their list of publications online, but this bias was deemed necessary for the overall sake of the research.

Our study was limited to universities inside the United States. Although this may be considered a limitation and further study should be performed to compare other countries' metrics, we considered our geographical boundaries a strength. By choosing a singular country to study, we controlled for cultural and country-based influences that could arise by studying universities of multiple countries, especially given that publishing requirements can vary so extensively by country. We performed statistical analyses to ensure that different universities did not affect the bibliometric result and found no significant effect.

Our statistical analysis was conducted based on the colleges we picked, since each college essentially represented a different area of scholarship. There was obviously some range in values by department, as is evident in figure 1 below. This chart is provided to demonstrate the variance that existed across departments. Impact Factor was chosen as a metric of comparison, but any metric could have fulfilled this function. Scholars from each of the specific departments may find this chart of interest to see how their department compares to their college as a whole, as well as to the other departments outside of their college. This range demonstrates that each subject area should be conducting its own area-specific research regarding bibliometrics, since a broad study like this one cannot cover all the idiosyncrasies of each field. The discipline of statistics may be a

FIGURE 1
Mean Impact Factor by Department



particularly problematic area because statistics faculty tend to publish in a wide variety of fields. However, we believe that the range represented in the departments allows for a better representation of each college, so we performed our statistical analyses on colleges instead of departments.

Results & Discussion

Part 1: How well-represented is each discipline in the indexing of each metrics system?

The results of this table indicate how well each discipline is indexed by metric system. Scholars from each discipline may benefit from this table, as it indicates which metric system has the best coverage for each disciplinary area. For example, scholars in the humanities will benefit from using Google Scholar (51%) or Scopus (48%) when looking for metrics, especially when compared to the more limited humanities coverage that Eigenfactor and Impact Factor provide. This table is also helpful in drawing general trends regarding the journals covered by metrics systems. Based solely on the overall percentage, Eigenfactor has the smallest percentage of journals indexed, followed by Impact Factor. Interestingly, the metrics system with the highest percentage of journals classified is Google Scholar, the newest metric of the group. In fact, Google Scholar has the highest percentage of journals classified in the areas of physical science, humanities, social science (tied with Scopus), education, engineering, and law, so scholars from all those areas may benefit most from referencing Google Scholar. Compared to other metrics systems, Google Scholar's high coverage of law journals (60%) is particularly impressive. In comparison, the fields of business, life sciences, and fine arts may consider consulting SJR or SNIP instead (although for both disciplines the difference between these systems and Google Scholar is only 1-2% and is therefore perhaps negligible).

Overall, these results indicate the emerging dominance of Google Scholar in the world of academic metrics. Google Scholar and Scopus lead the metrics systems in every area, at least in regard to the percentage of journals classified. This brings up the question of whether scholars are overrelying on metrics systems that are becoming increasingly irrelevant. If Eigenfactor and Web of Science cannot keep up with the percentage of journals indexed, are they worth consulting? This is particularly relevant given accessibility to the systems. One 2019 report

TABLE 1
Percentage of Journals Represented in Each Database, Categorized by Discipline Type

	Eigenfactor	Eigenfactor Article Influence	Scopus Cite Score	Scopus CiteScore Percentile	SJR	SNIP	Impact Factor	5-year Impact Factor	G Scholar h5-index	Average
Physical Sciences	71%	71%	78%	78%	79%	79%	74%	72%	80%	76%
Humanities	13%	16%	48%	48%	49%	48%	17%	17%	51%	34%
Social Sciences	68%	70%	78%	78%	79%	79%	72%	71%	79%	75%
Education	24%	27%	47%	47%	48%	48%	30%	28%	55%	39%
Engineering	71%	71%	78%	78%	79%	78%	77%	75%	81%	76%
Business	56%	57%	70%	70%	71%	71%	62%	59%	70%	65%
Life Sciences	76%	76%	84%	84%	85%	84%	82%	79%	84%	82%
Fine Arts	33%	35%	60%	60%	60%	60%	38%	37%	58%	49%
Law	34%	34%	40%	40%	40%	40%	38%	34%	65%	41%
Overall	58%	60%	72%	72%	73%	72%	64%	61%	74%	

states that the annual subscription price of Web of Science was over $212,000, compared to only $140,000 for Scopus.[59] In comparison, Google Scholar's statistics are free. Google Scholar's thorough coverage across all disciplines is a major strength, and its universal availability makes it highly useful for scholars of all levels of education. At the same time, however, Google Scholar sometimes picks up on sources that are non-academic, and it is somewhat error-ridden, so the reliability of its journal classifications may need to be evaluated. Thus, Google Scholar's overall worth may need to be reevaluated in future years, and other metrics systems may need to make some changes in order to better compete in the field of academic metrics.

This table also has implications for how well journals are being indexed overall. Across all metrics systems, the best indexed field was the life sciences at 82 percent, followed closely by the physical sciences and engineering at 76 percent and the social sciences at 75 percent. Business was also fairly well indexed, with more than half the journals indexed in every metric system. All the other disciplines—fine arts, law, education, and humanities—averaged at less than half indexed. These numbers are somewhat startling, given academia's generally high reliance on numbers and metrics in determining quality. The statistics indicate a strong preference for indexing science-based fields compared to other areas of study. Arguably, non-science-based fields and the soft sciences tend to rely less on bibliometrics to determine quality.[60] However, this discrepancy notes a large problem of using metrics in academia: not all the journals are classified. With the highest rate of classification at 82 percent, the full range of academic journals in a discipline is not being wholly represented, so the system is inherently biased. It also strongly favors science-based disciplines, leaving other fields highly limited in their ability to judge the quality of their publications based on metrics. Thus, this underrepresentation of some disciplines should be fully considered when using the metrics systems.

Part 2: How does each metrics system treat disciplines differently, and how do these differences compare across metrics systems?

As evident in this table, discipline has a strong effect on bibliometric values.[61] Engineering, business, and the sciences (social, physical, and life) all consistently had the highest metric

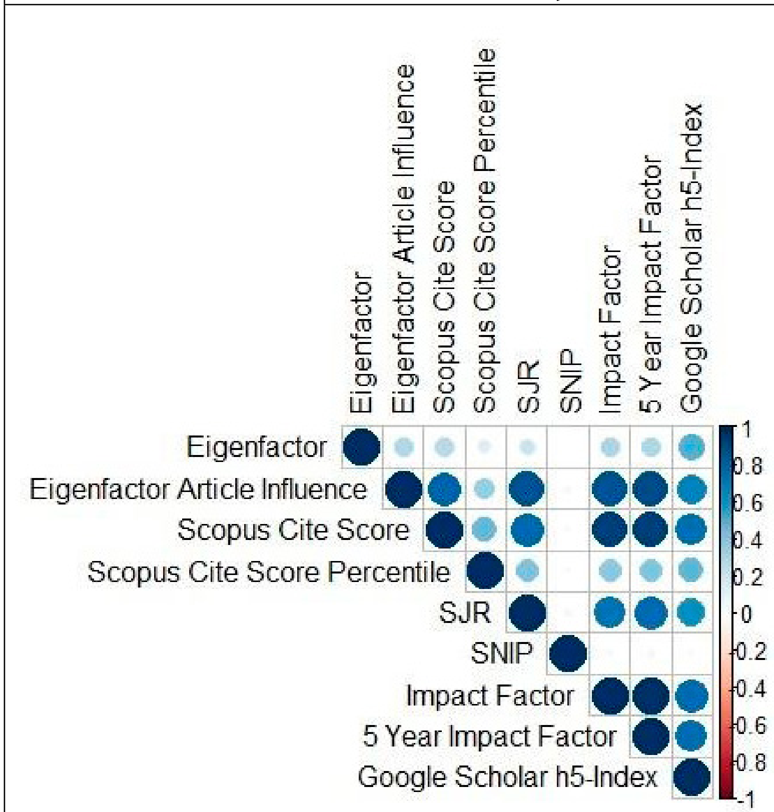
TABLE 2
Metric Averages for All the Journals from Each Discipline. Significance Was $p < .001$ for All Metrics except SNIP, Which Was Insignificant with a P Value of .803

	Eigenfactor	Eigenfactor Article Influence	Scopus Cite Score	Scopus CiteScore Percentile	SJR	SNIP	Impact Factor	5-year Impact Factor	G Scholar h5-index
Physical Sciences	0.082	1.91	7.47	76.96	1.9	3.2	4.81	5.15	58.11
Humanities	0.062	1.6	2.03	70.07	0.75	1.16	3.01	3.54	16.36
Social Sciences	0.035	1.8	5.34	78.03	2.01	1.75	3.53	4.17	44.3
Education	0.013	0.81	2.81	72.76	1.06	1.51	1.98	2.59	24.88
Engineering	0.09	1.45	8.57	80.02	1.86	1.57	5.36	5.59	62.13
Business	0.019	2.08	5.28	79.85	2.82	2.17	3.17	4.36	42.15
Life Sciences	0.053	1.71	6.67	76.62	1.85	1.48	4.37	4.77	50.58
Fine Arts	0.006	0.74	2.92	76.79	0.92	1.32	1.98	2.54	25.33
Law	0.008	1.18	2.14	69.36	1.18	1.12	1.82	2.09	22.1
All Departments	0.058	1.66	6.15	77.06	1.8	1.88	4.19	4.67	47.3

values. Engineering almost always was the field with the highest metric value. Fine arts, law, and education were all consistently quite low, while the comparative humanities value varied strongly depending on the metric. While humanities had the second highest Eigenfactor value, it also had the lowest Scopus Cite Score. Thus, it is impossible to make direct comparisons between disciplines using metrics, as a hard science field will naturally have a significantly higher metric value than a humanities, education, or law. Even comparing metrics across one discipline will be problematic.

It is important to note the strong differences between each metric system. Despite having some similar goals, each metric system is ultimately unique. Figure 2 below demonstrates the level of comparability between the different metric systems. Darker colors and larger dots correspond with a higher level of correlation, and no negative correlations were found. The highest correlation existed between Eigenfactor Article Influence Score and SJR, as well as between Eigenfactor Article Influence Score and the Impact Factors. The Impact Factors were also highly correlated with Scopus Cite Score. This is consistent with previous research, which found high correlation between Impact Factor, Eigenfactor, and Scopus, suggesting that these metrics might be used comparably.[62] Interestingly, SNIP had almost no correlation with the other metrics. While correlation does not necessarily equate with reliability, the consistency between Impact Factor, Eigenfactor, and Scopus is somewhat encouraging in regard to the future of the metrics systems. At the same time, the lack of consistency between some metrics is alarming, since it shows that measuring quality using metrics can be highly problematic. Although the use of metrics and numbers may seem entirely objective, clearly this is not an entirely consistent system.

FIGURE 2
Correlation between Metric Systems



One of the biggest trends in our data, which is consistent with what might be expected, is that fields that are more closely tied to the sciences nearly always have higher metric measurements than less scientific fields, regardless of the type of metric. Education, Fine Arts, Law, and Humanities all consistently had lower metrics, and they were less represented overall in metric systems. It is important that university rank and tenure committees note this important disciplinary difference. Publishing is obviously an important part of rank advancement, and having good metrics can make a significant difference for a faculty member, so it is critical to understand what is considered a good metric for each discipline. Similarly, librarians purchasing access to journals across fields should note that the metrics values will vary based on discipline. Higher metric scores may be more consistent for the sciences, business, and engineering, so a humanities, law, education, and fine arts journal should not be dismissed simply because their metric values seem lower in comparison; similarly, just because a journal is not included in a metric system does not necessarily mean that it is of lower quality than an indexed journal. Furthermore, with such vast discrepancies in the metrics, any comparisons must be undertaken with much caution.

Limitations

A primary limitation of our study is that our data was only conducted for scholars publishing in the United States. Consequently, the majority of the journals included were written in English. Given that some databases have limited coverage of non-English journals and some disciplines rely more heavily on foreign language publications, it is likely that our study's results are inaccurate in regard to non-English journals. Further studies should include international universities in their data in order to offset any national or linguistic bias that may occur. An additional limitation of our study is that we only looked at faculty members who had their list of publications available online. This may preclude examination of less tech-savvy faculty, who may publish more often in certain journals. While our study was intended to examine differences by discipline and therefore should not be overly affected by this limitation, there remains the possibility that limiting our sample to only faculty with their publications listed online caused a difference in our results.

We recognize that a major limitation of our study is its generality. After all, each discipline that we have compared contains a variety of subfields and specialties, each of which may have its own differences in how they are treated by journal metrics, and we only compared a few of many disciplines.[63] Furthermore, many areas of research overlap with each other or may not be easily defined within one discipline.[64] These difficulties warrant further research beyond the scope of this study, in that our primary goal was to offer a general overview comparison of the differences in journal metrics by discipline. We recommend that every discipline undertake a study of its subdisciplinary differences in journal metrics, as has been done in engineering and other fields.[65]

Conclusion

Our study identifies some interesting trends in publishing metrics across disciplines—trends that will be useful to academic librarians in advising their faculty on publications and in working on publications of their own. We found that the fields of business, engineering, and the sciences tend to have higher publishing metrics and a greater representation in bibliometric systems than fine arts, humanities, and education. Different metric systems' treatments of the various disciplines produced distinct results. The biggest takeaway from our study is the huge discrepancy between disciplines, which prevents comparing their bibliometrics. The metrics system is not consistent, and it is ultimately an imperfect way to measure research quality. More research and scholarship will be necessary to understand the flaws in this system more fully, but our study provides some initial backdrop of how interdisciplinary differences impact journal metrics. Our results demonstrate that librarians as well as scholars and administrators must be careful in their treatment of metrics. No metric system can be considered an ideal measurement of quality, and all metric systems should be used with caution and careful attention to how different disciplines are treated differently.

Appendix

FIGURE 3
Eigenfactor Average by Discipline (p < .0001)

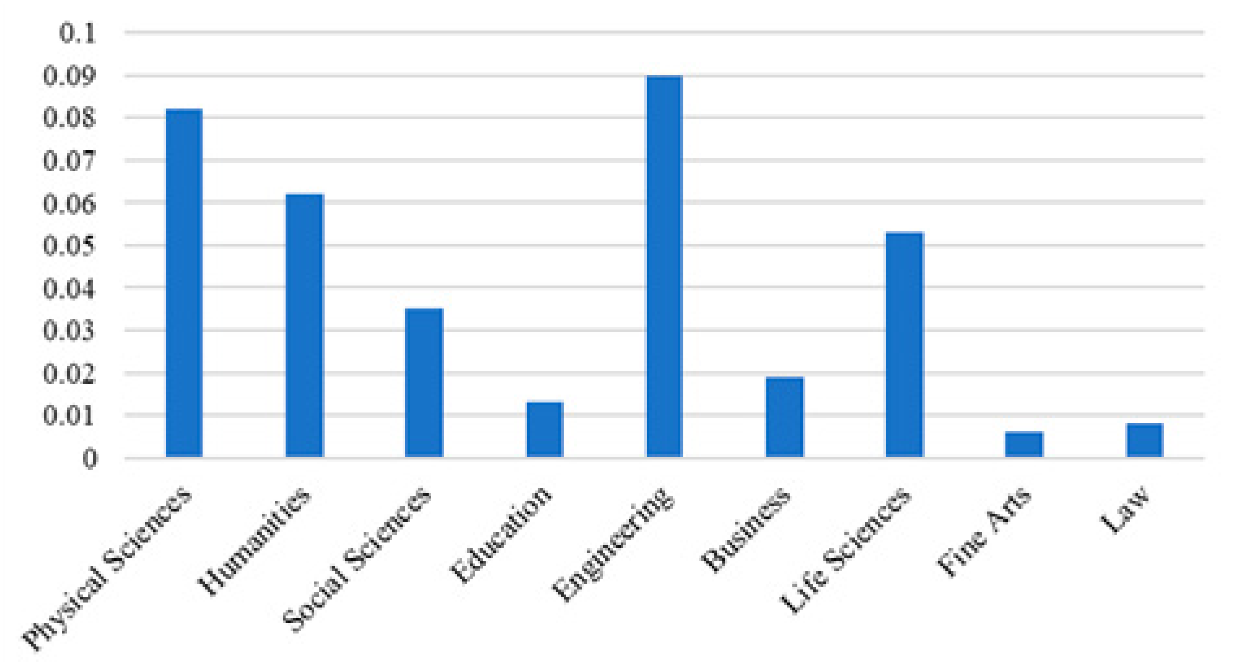


FIGURE 4
Eigenfactor Article Influence Score Average by Discipline (p < .0001)

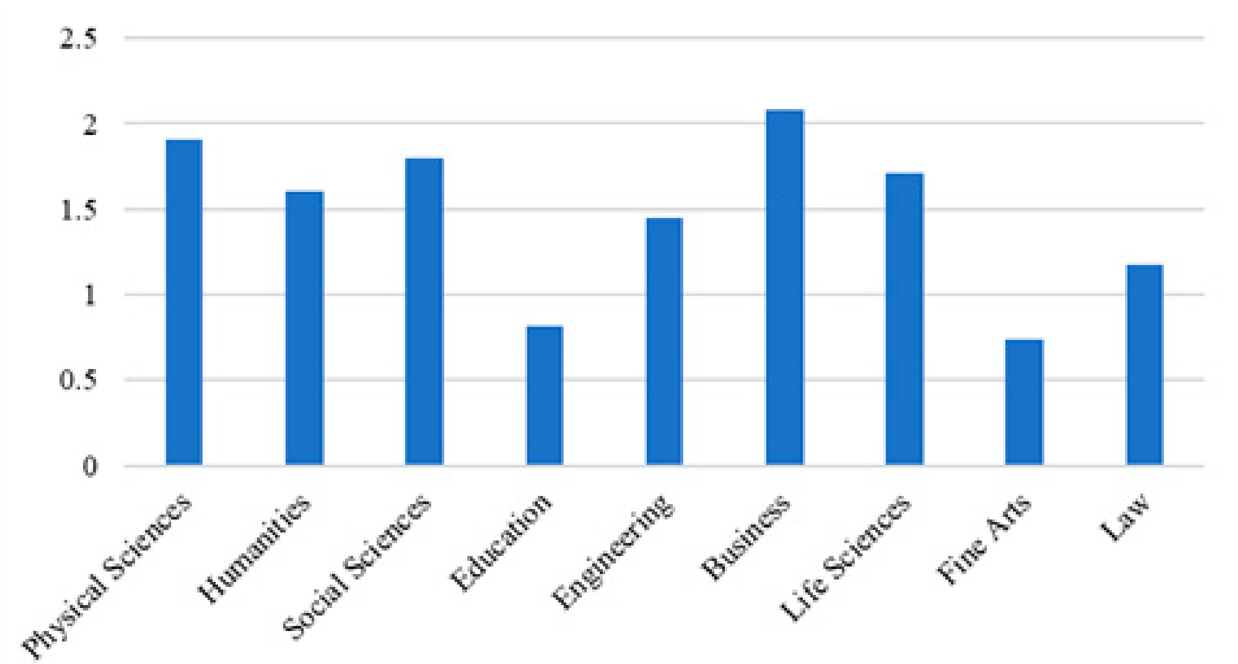


FIGURE 5
Scopus Cite Score Average by Discipline (p < .0001)

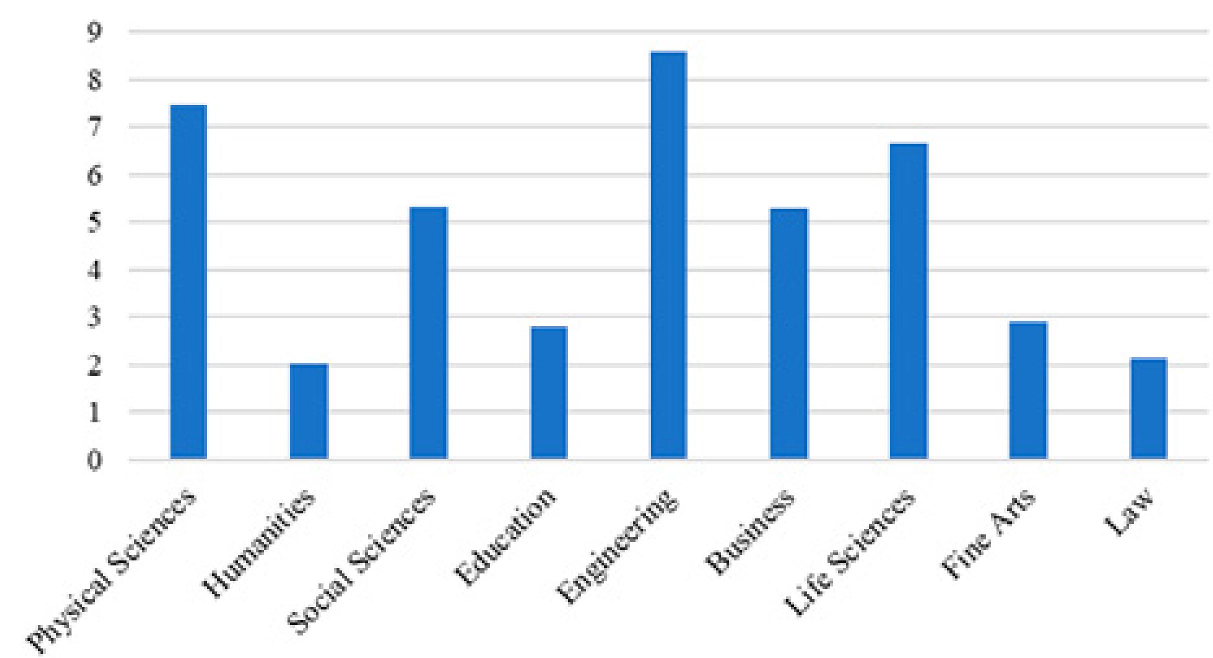


FIGURE 6
Scopus Cite Score Percentile Average by Discipline (p < .0001)

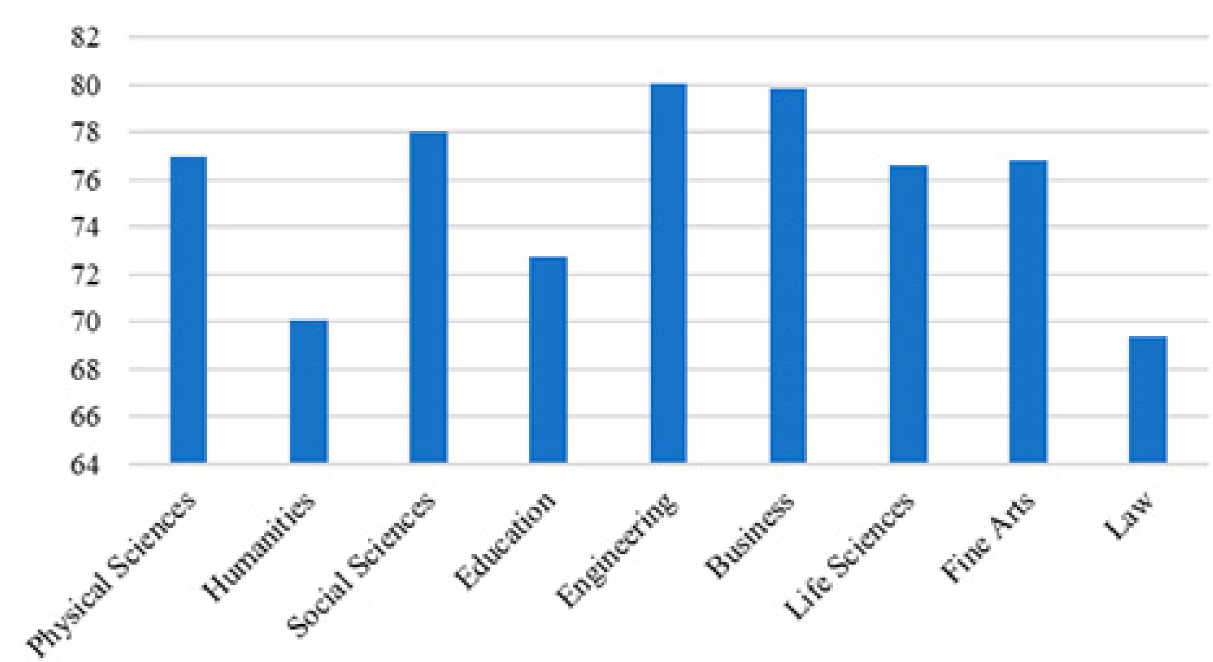


FIGURE 7
SJR Average by Discipline (p < .0001)

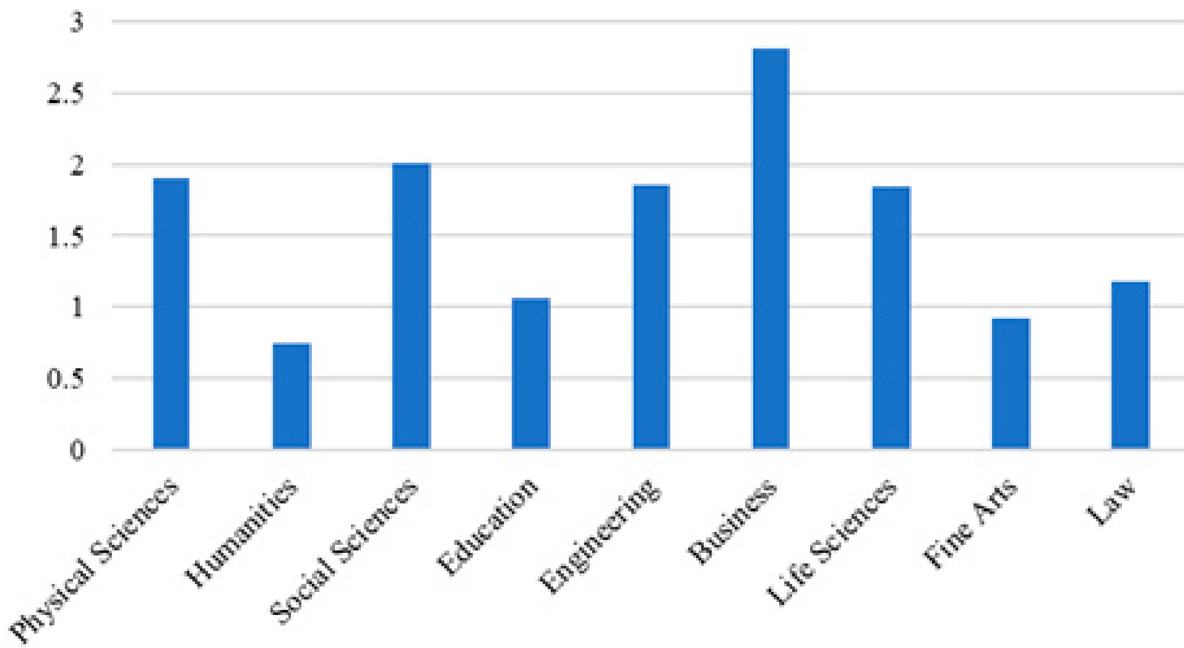


FIGURE 8
SNIP Average by Discipline (not statistically significant)

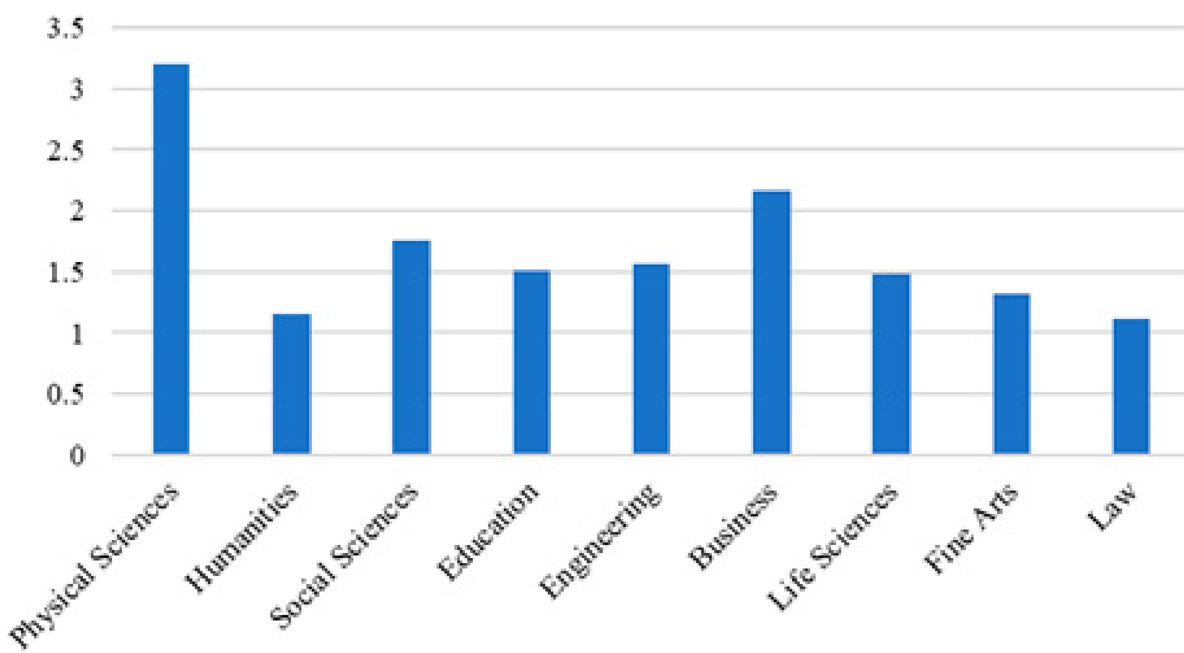


FIGURE 9
Impact Factor Score Average by Discipline (p < .0001)

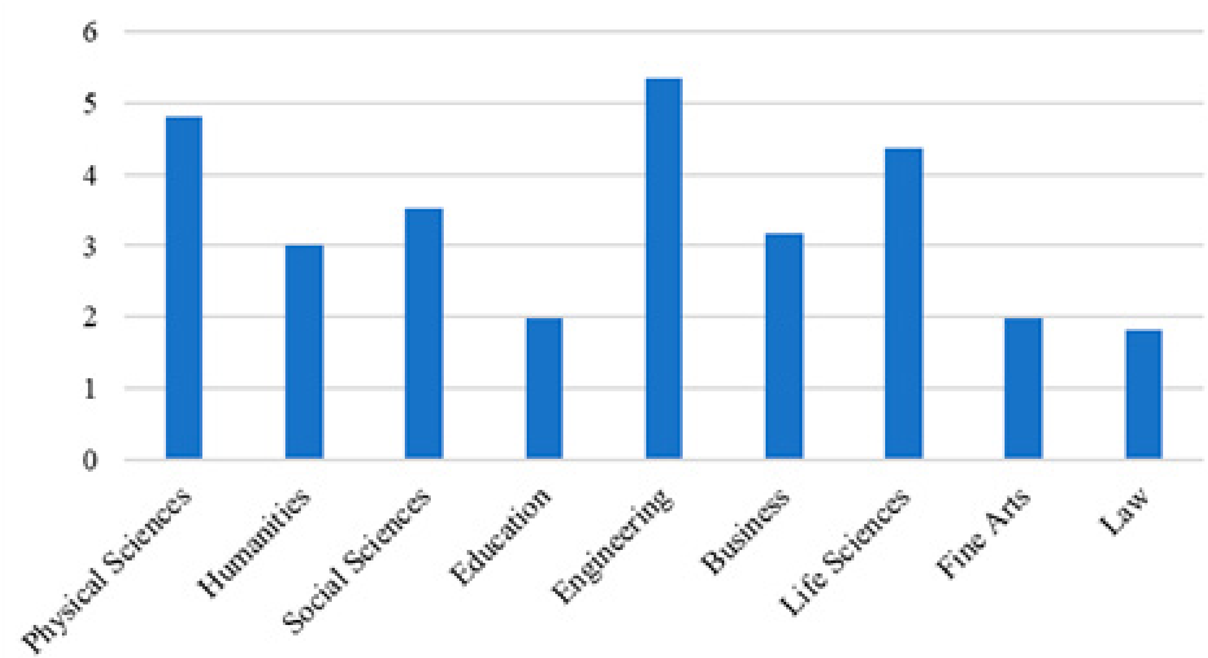


FIGURE 10
5-year Impact Factor Score Average by Discipline (p < .0001)

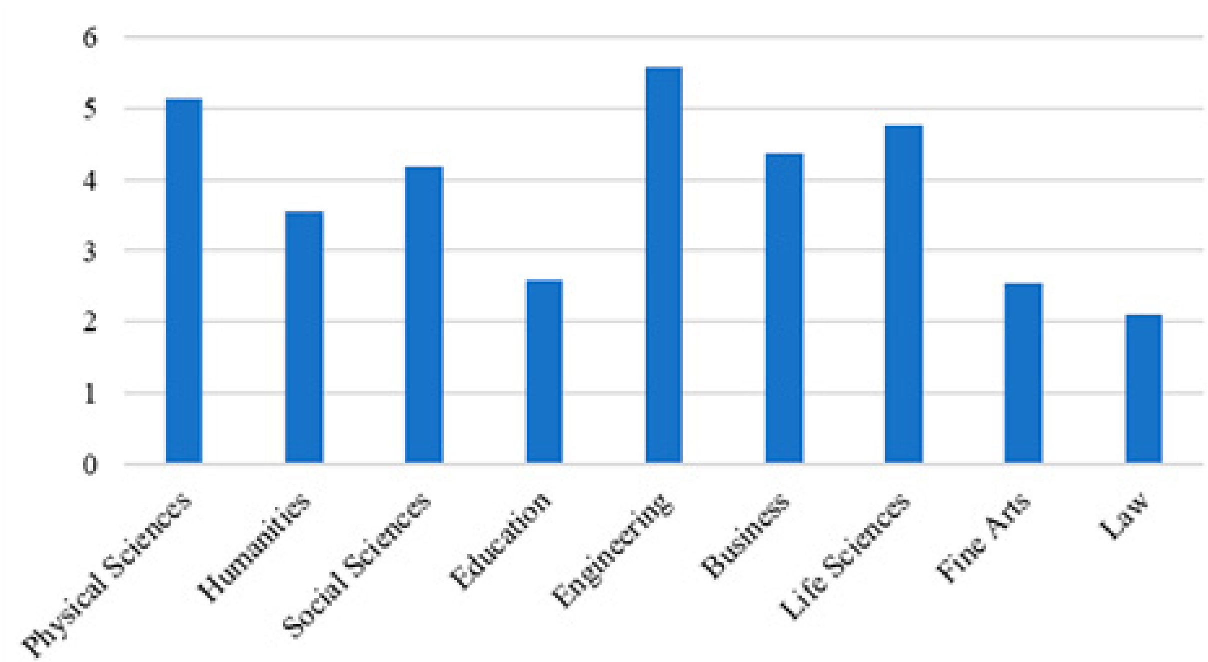
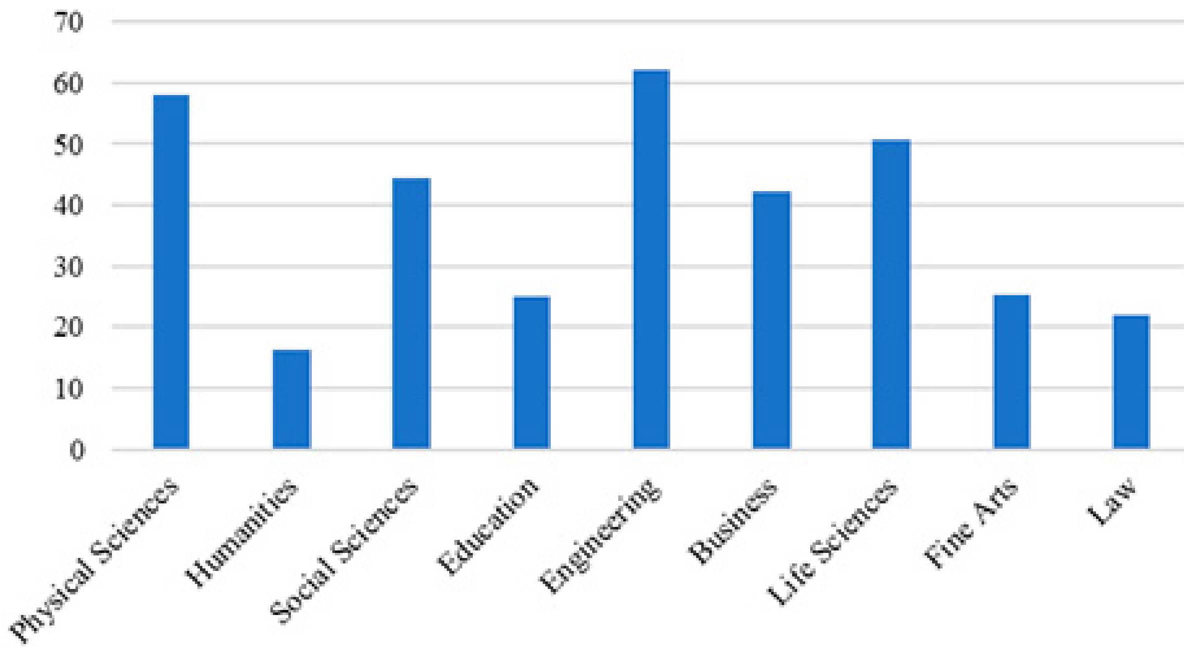


FIGURE 11
Google Scholar h5-index Score Average by Discipline (p < .0001)



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Reframing the Library Residency Narrative

LaTesha Velez and Michelle Rosquillo

We must reframe deficit-based residency narratives and provide welcoming, inclusive, and productive working environments to make library residencies an enriching experience for our new colleagues. This research reports survey responses asking how residency supervisors and coordinators communicate with stakeholders to ensure residents work in a welcoming and inclusive environment. We also asked how staff concerns are mitigated and how conversations are framed to avoid miscommunications and microaggressions. Responses echoed issues raised in existing literature, such as suggesting residents' titles be changed to ones that more accurately describe their job duties and make it clear that residents are not students.

Introduction

This paper is designed to aid residency programs by sharing the experiences of current residency supervisors and coordinators. It builds on research previously reported by Velez et al.[1] Specifically, we report survey responses indicating if and how residency programs are reframing difficult conversations surrounding ways to make the resident feel welcome and to temper any concerns felt by library staff. We also asked respondents to offer insight into the innovations residents have brought to host institutions. Conversations surrounding residencies need to be reframed to focus on what residents and host institutions can teach each other. Residents bring valuable new talent and innovation to host institutions, while host institutions can offer mentorship and professional development guidance. Much of the professional literature, as well as informal resident reflection, tends to evoke a chorus of sentiment on the myriad benefits and equally myriad challenges of post-graduate programs. It remains to be seen whether these often-voiced critiques are finding a receptive audience, and whether program coordinators and institution administrators are responding to the primary issues of concern.

Library residents have expressed frustration over their misunderstood role in the library profession. Residencies, designed to provide valuable work experience to early-career librarians, have existed since around 1940,[2] but former residents continue to point out unaddressed flaws in the infrastructure of these programs. One notable example is when library faculty and staff mistake residents for students and treat them as such, forcing residents to ask their hosting institutions to clarify their role to library staff. The firsthand account of Hu and Patrick[3] reveals such struggles with institutional politicization and lack of organizational buy-in: they report being repeatedly referred

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to as "interns" and regarded as less qualified than non-resident entry-level staff, a discrepancy commonly discussed by former residents.[4] Residents also suffer from the lack of a clear program structure and being pigeonholed into projects that do not align with their professional interests.[5] Hu and Patrick mention that the lack of a clear framework in which to pursue their professional interests and a reliance on their program supervisor to facilitate communication with colleges led to "step[ping] into …colleagues' territories."[6] They also note that colleagues more frequently invited their participation on projects related to underrepresented populations, saying, "Inevitably, we felt that our existence was more about politics rather than an honest attempt to recruit and retain minorities…[W]e felt that we were often asked to take on tasks not because of our interests or strengths, but merely due to our physical appearances."[7] They conclude by advising administrators not to pigeonhole diversity residents this way, a sentiment echoed by Sheldon and Alston[8], and to create programs with a well-defined structure that offsets the tensions of adding a newly graduated, term-limited staff member into an established organizational culture.

In her reflection on the increasing tendency toward term-limited contracts in librarianship, Alaniz[9] summarizes much of the discourse that is currently taking place regarding the future of residencies. She points out that the inflated view hosting institutions have of their programs' success contributes to the continued failure to improve residencies and diversity in LIS. In a personal blog post, Hathcock[10] underscores the term-limited nature of early-career appointments, including diversity residencies. She suggests that part of the blame for low retention rates among underrepresented library personnel is because institutions intentionally structure early career appointments as temporary.[11] Hathcock's claim that institutions "aren't serious" about diversity initiatives and are "just not ready"[12] to dismantle power structures is echoed by Alston's[13] assertion that institutions "retaliate" against residents who speak out about negative experiences. Residents entering a program with a lack of stakeholder buy-in can experience hostile work environments, causing them to leave librarianship altogether.[14]

Despite the hurdles, it is possible to reimagine residencies in a way that supports the recruitment and retention of a talented, diverse library workforce. Although Brewer[15] acknowledges the persistent demographic skew towards whiteness in librarianship, evidenced by current data from ALA member demographics, she advocates for early-career appointments as a model of institutional policy and practice. Brewer asserts that "[w]ell-established residencies represent dynamic organizations that value diversity and professional development for all positions. They visibly communicate the nature and priorities of the library's organizational culture to prospective employees and to the research library community at large."[16] This is a constant refrain in the literature surrounding diversity, equity, and inclusion (DEI) initiatives in residency programs, particularly the success stories.[17]

Another potential benefit of residencies is the possibility of mentorship for new graduates and early career librarians.[18] Boyd et al.[19] and Pickens and Coren[20] published concurrent findings that a significant benefit to residencies is the proximity of residents to established career professionals who can offer mentorship, guidance, and feedback. Alston's contemporary doctoral research emphasizes that adequate communication with and preparation and assessment of the resident weigh heavily into the mentoring duties of hosting institutions,[21] which Pickens and Coren[22] also emphasize. Other former residents also stress the positive impact of formal support and mentorship structures.[23] It is the authors' hope that sharing information from current residency programs will aid existing and future programs as they endeavor to make the structural changes necessary to ensure that residents are successful and valued.

Literature Review

Recruitment and Retention of Diverse Librarians

Most of the residency program coordinators who responded to this survey were members of the ACRL Diversity Alliance, which aims to increase the ethnic and racial diversity of librarianship by using residency programs as a recruitment tool for minority librarians.[24] Researchers have explored the history of hegemonic practices within libraries that often render DEI initiatives, including diversity residency programs, ineffective.[25] While mentorship and networking are marketed as some of the most significant rewards of a residency program, some residents report that receiving such localized attention is enough to cause friction among more established library staff. Some residents mention institutional practice and culture that devalues the strengths and pursuits of diversity residents, including "being on the bottom of the institutional hierarchy"[26] and "[fighting] an uphill battle trying to create real change."[27]

Alston's dissertation[28] found that residencies suffered from a lack of organizational buy-in, inadequately structured or adaptable programs, and persistent misunderstanding of the role and responsibility of a resident, particularly a diversity resident. Alston further suggests[29] that attending to these areas will directly affect retention rates for librarians of color by enhancing their professional experience.

Surveys conducted by Boyd, Blue, and Im[30] lend support to Alston's ideas by addressing the issue of retention of diverse librarians. They acknowledge key problems such as lack of organizational buy-in, systemic racism, and barriers to advancement as having a continual effect on institutional efforts to recruit and retain librarians of color. Boyd et al. note that even institutions that secure staff buy-in and accountability are not adequately preparing diversity residents for subsequent work environments where such a culture may not be present. Alston reiterates this point, stating that retention "hinges on providing the new librarians serving in diversity residencies with experiences that are satisfying and rewarding to the resident, as well as preparatory for the resident's next professional appointment."[31]

Probably the most concerning trend that may impact the well-being and retention of diverse librarians was the "othering" and microaggressions residents face. One respondent stressed deemphasizing a resident's "otherness," while another thought that the title "resident" itself was problematic. Boyd et al.[32] expressed how the otherness of a diversity residency first necessitates formal support systems for a staff member placed in this role, then exacerbates inculcated organizational resistance by singling out the resident for special training and opportunities. Alston's work cites such "rumblings"[33] as a significant cause for dissatisfaction with residency experiences and suggests that they may result from courting buy-in only from faculty or permanent staff members without extending efforts to include paraprofessional staff as well.[34] Such "rumblings" can contribute to impostor syndrome among residents,[35] and are frequently reported through anonymous submissions on the Tumblr blog *Microaggressions in LIS*.

Organizational Buy-In and Assessment

Sheldon and Alston[36] recommend that hosting institutions conduct cultural climate assessments to combat staff ignorance and confusion, encourage communication with residents, and support mentorship of residents. They also suggest ongoing diversity training. Fontenot[37] further stipulates that climate assessment should be used to secure staff buy-in long before establishing a residency. Not only are residents able to sense resistance and a lack of sincerity in diversity efforts,[38] but microaggressions can have a cumulative negative impact. Alston[39] and Barrientos[40] lament that institutions that do not educate staff or conduct climate assessments result in a trend wherein residents are responsible for keeping institutions answerable for providing the training, development, and support they need.

Fontenot[41] suggests that assessment is necessary to maintain the integrity of residency programs and maximize organizational buy-in, points that Barrientos[42] also makes in reflections on his residency. Perez adds that giving the resident verbal feedback, annual appraisals, and performance analysis "demonstrates an ongoing investment in the development of the resident."[43] Alston[44] reports that the lack of assessment is one of the six emergent themes for dissatisfaction among residency program participants. Donaldson lists assessment as one of four major components to a successful residency.[45]

Cohort Structure and Work Rotation

The rotation model, where residents spend a set amount of time working in various departments in the library, is a common way that residency programs are structured.[46] Fontenot[47] describes a two-year appointment of one to two residents rotating through several departments as the traditional residency model. Dewey et al.[48] mention having the freedom to craft their work rotations during the inaugural diversity residency at Penn State. Taylor[49] also mentions rotational styles, noting that residents at the University of South Florida select a "home" department from which they rotate through others. However, some researchers fear that the rotational style is not the best for creating a successful residency. Barrientos[50] finds department rotation less efficient and productive for the short-term nature of a residency. Dougherty and Lougee[51] point out the ability of medical residencies to link theory and practice, suggesting library residencies can learn by example. Alburo et al.[52] echo this sentiment, saying the medical residency framework is a necessary intersection of graduate and professional work that enhances the education provided by degree programs. Perez revisits this idea by comparing workforce and demographic issues between LIS and nursing residencies, and ultimately concludes that the former may benefit from incorporating the practices and principles of the latter.[53]

It is clear that researchers are discussing residency best practices ranging from how programs should be structured to how to create a welcoming climate for residents. However, what is less clear is the impact these works have on existing residency programs, which is the focus of our research.

Methodology

The researchers used an online survey administered via Qualtrics to evaluate how residency directors and coordinators communicate with stakeholders to ensure a welcoming, inclusive, fruitful residency program experience for everyone involved. We also wanted to discover how program coordinators and supervisors framed conversations with stakeholders to avoid some of the miscommunications and microagressions mentioned above.

The survey collected data from twenty-one residency program coordinators and administrators representing nineteen unique universities. Programs in the planning stages that had no residents at the time of responding to the questionnaire skipped questions that did not apply, such as "How many residents have completed your residency program in total" and "If applicable, list any new projects, activities, or programs that have been created by the current and former residents that benefited the library and/or campus community." Consequently, there were fourteen open-ended questions for those still in the planning stage and twenty for respondents with existing programs. Inductive and deductive coding methods were employed to categorize the open-ended responses. Two research team members independently extracted themes from these data, noting where similarity and overlap occurred before comparing results to compile a single value set. A third researcher used this schema to code each response, at which point the initial two researchers verified the final coding set generated.

The online questionnaire was circulated to institutions with residency programs via listservs and direct email. Although these calls did not specifically target diversity residency programs, one of the sources used to identify respondents was the list of residencies that participated in the ACRL Diversity Alliance. Researchers also targeted listservs including the ACRL Residency Interest Group (RIG), Wayne State University's Jesse listserv, and individuals with experience in residency programs. This resulted in a large number of diversity residencies programs being surveyed. Sixteen out of the nineteen universities represented were part of the ACRL's Diversity Alliance. We also had a large number of respondents mention diversifying librarianship as part of their mission or goals. Because no definitive number can be determined for active library residencies in the United States, whether general or specifically diversity related, the researchers could not calculate the survey response rate against aggregate numbers.

This paper focuses on the responses to three open-ended questions related to communication with stakeholders:

- How did the three or more ideas listed in both 5a (List 3 or more ideas for creating a welcoming and inclusive space for new residents) and 5b (List 3 or more ideas for mitigating any staff concerns with the residency program [and/or resident?]) frame conversations about what a residency program can do for the library, institution, and profession as a whole?
- If applicable, list any new projects, activities, or programs that have been created by the current and former residents that benefited the library and/or campus community.
- Do you have any other comments or questions about Reframing the Narrative for Residency Program?

Of the twenty-one survey respondents, eleven provided responses for creating a welcoming space and mitigating concerns; five told researchers how these ideas informed conversations with stakeholders and described new projects, activities, or programs that have been created by current and former residents; and three provided other comments.

Findings

The literature surrounding problems with residency programs indicates that some programs suffer from hostile working environments and misunderstandings about the role of both the residency program and the resident. Believing that some of the microaggressions residents face came from miscommunications, our survey included questions to elicit ideas for reframing conversations with stakeholders. We asked respondents to offer suggestions for creating a welcoming and inclusive space for residents and how they mitigated staff concerns about the residency. Following those questions, we asked how ideas for creating a welcoming space and mitigating staff concerns shaped conversations with residency program stakeholders. We also invited respondents to detail projects the resident worked on and to offer any other comments they desired.

How did the three or more ideas listed in both 5a (List 3 or more ideas for creating a welcoming and inclusive space for new residents) and 5b (List 3 or more ideas for mitigating any staff concerns with the residency program [and/or resident?]) frame conversations about what a residency program can do for the library, institution, and profession as a whole?

Although there were eleven responses for creating a welcoming space and mitigating concerns, less than half of those respondents, five, told researchers how these ideas informed conversations with stakeholders. We will briefly review responses to creating a welcoming space and mitigating concerns to contextualize the suggestions for reframing conversations. Although responses for creating a welcome space varied,[54] four of the eleven respondents suggested introducing residents to other professionals and ensuring that residents are doing "meaningful, professional-level work."[55] One respondent said, "Involve residents in real work that they can take ownership of, and that other staff members can recognize as a meaningful contribution." Other ideas mentioned by at least three of the respondents included asking the resident for feedback, having an onboarding process, mentorship, introducing residents to other professionals outside of librarianship, and changing the resident's job title to one that did not include the word "resident." Acknowledging some of the issues residents have faced, one responded answered, "We used to have 'Diversity Residency Librarian' as a title and now are using the title of what they are doing. For example, 'Special Collections Cataloging Librarian.' This was primarily to counter treatment like 'an intern,' as well as to give them [the residents] confidence in their position as a professional."

The most frequently cited means for mitigating staff concerns was by getting feedback from staff and responding to staff questions and concerns.[56] One respondent suggested having "an open space or forum or invite staff that have concerns" followed by "closed meetings to address concerns." There were fewer suggestions for how to turn such tips into conversations with stakeholders.

When asked how ideas for creating a welcoming space and mitigating staff concerns helped reframe conversations about the residency program, suggestions from each of the five respondents varied. One respondent suggested deemphasizing the "otherness" of the resident. Two respondents asserted that the residency program aids in the library's goal of training leaders; one elaborated that the residency program is part of "creating and informing a learning organization culture," while the other stressed that these conversations were ongoing but that they included emphasizing the new skills and innovations residents bring to the library. The fourth respondent said that conversations focused on defining what a successful residency looks like and reminded library personnel that residents are graduates and full-time professionals. The fifth respondent admitted that those conversations were happening in some groups, but not library-wide, acknowledging that discussions are "a work in progress."

If applicable, list any new projects, activities, or programs that have been created by the current and former residents that benefited the library and/or campus community.

As a follow-up to questions about reframing conversations, and in an attempt by the researchers to focus on the assets library residencies bring, we asked respondents to share any new projects, activities, or programs that have been created by current and former residents. Although only five separate respondents answered, these respondents mentioned multiple projects or activities. Residents from one institution completed a group project about "computational reproducibility," suggested changes in the structure of the residency program and implemented a mindfulness program. Another respondent told us about innovations in instruction suggested by their resident. Innovations include using a flipped classroom model and creating a curriculum tool to map future projects. That same respondent told us residents created a sustainable process for depositing student organization records to the university archives and cataloged several collections, making them more accessible to the public. This respondent called all of those innovations "a drop in the bucket" of what their residents have brought to the library. Another respondent who provided a long list of wide-ranging resident contributions mentioned a similar program, saying that a resident archived materials from student organizations strengthening on-campus collaborations. That respondent also said residents helped the library raise the quality of their exhibits to the point that they became a major library program involving student and faculty-curators, which directly connected to the library's core mission of supporting teaching and research. Another resident researched first-year student orientation practices and suggested a game-based approach that the library continued to use for years. One resident had a background in educational psychology that helped the library "significantly improve the curriculum for our peer reference assistants program." That respondent elaborated that the library increased its emphasis on building a strong peer reference cohort identity, which enhanced that program's campus profile.

Do you have any other comments or questions about Reframing the Narrative for Residency Programs?

The final survey questions allowed respondents to add other comments or questions about reframing the narrative for residency programs. One respondent thanked the researchers for conducting this survey and explained that they think residencies exist to increase the inclusion of underrepresented groups in academic librarianship, insightfully noting that "we should also be having a conversation about hiring practices and why residency programs are needed in the first place." Another echoed an earlier response surrounding "othering" residents. The respondent stressed the struggle to devise an appropriate job title, explaining that they use the term resident when they recruit applicants; once hired, the resident's title is changed to one that is appropriate to their functional work area. This respondent claimed their institution still grapples with how to refer to a cohort, elaborating that calling them residents "furthers the insinuation that they are not qualified to be full-fledged librarians." They went on to explain that "We are trying to change that rhetoric but are struggling with the language." Finally, one respondent suggested that future residency program supervisors and coordinators remain flexible about the idea of a rotational residency structure because not every resident will necessarily benefit from rotating departments. They pointed out that some residents would rather stay in a home department and work with other departments on special projects.

Discussion

The responses to questions asking for tips to create a welcoming environment and mitigating staff concerns suggest that residency supervisors and coordinators are thinking about some of the issues described in the literature. Unfortunately, those responses did not translate into concrete ways to reframe difficult residency conversations. The response rate was low for questions related to reframing the residency narrative to one that highlights the assets a resident brings to institutions and the profession. As such, we cannot claim that the results are generalizable. The low response rate itself could indicate that supervisors and coordinators may not understand the importance of facilitating such discussions, or that they are still grappling with how to navigate these conversations. However, the authors still chose to share the results, hoping to prompt others to examine conversations surrounding their own current or prospective programs. We wanted to share information from current residency-hosting institutions.

In reviewing the last thirty years of literature, several themes emerge, indicating areas that require attention and revision. Several respondents echoed these themes. One respondent cited the importance of flexibility in work structures. In particular, they noted that a rotational design might not be the best fit for each resident. The topic of how residencies should be structured—that is, whether to implement rotational, project-based, or another model—is understudied. However, a work structure that more explicitly offers experiences to enhance what was formally learned in school, similar to medical residencies, may help residents get the most out of their program.[57]

Three out of the five programs that offered responses about reframing conversations to make their program more welcoming and to mitigate staff concerns explicitly include the recruitment of underrepresented people as part of the mission of its residency program. Still, there is little research on the retention rates of underrepresented populations post-residency. Unfortunately, we can see from current professional demographic information that librarianship, particularly its disproportionate whiteness, has not changed. This may indicate a multitude of things, including a resident's inability to find permanent work after the residency program has ended, too few diversity residencies to make a material impact on the profession, a problem with specific residencies or the profession as a whole that makes a program or librarianship a hostile environment for minorities, or any combination of reasons.

It is worth noting that many of the thematic elements found in the literature regarding diversity residencies were repeated by respondents whose programs function as a diversity initiative for the hosting institution. We know from residents that microaggressions regarding professional qualifications and legitimacy occur. Examples include the implication that "diversity hires" are a matter of quota rather than qualifications,[58] as well instances of residents not being given meaningful work projects[59] or having their training and expertise questioned by colleagues,[60] among other actions and assumptions that "other" the resident's status. It is therefore telling that respondents spoke about emphasizing the innovations a resident brings and explaining that residents have graduated and are professionals. Our respondents also mentioned ensuring that residents are given worthwhile, professional-level work. These responses and conversations feel like attempts to explain the value and worth of a resident by reminding colleagues that residents are fully qualified librarians and pointing out how a resident's skills can benefit the library. Regardless of the uphill battle against microaggressions they faced, it is evident that residents make meaningful contributions to their host institutions—so many that some respondents clearly stated that there were too many contributions to list.

Conclusion

Participants in library residencies have begun to call for structural change in the implementation of post-MLIS employment programs for early-career librarians. Diversity residents like Hu and Patrick[61] frequently acknowledge the challenges of adjusting to a charged institutional culture. The profession is at a point in residency programs where some fear even the title "resident" holds negative connotations. Alaniz asserts that the public face of residency hosting institutions is "disingenuous at best," with too many "placing the onus on early career-professionals to 'innovate' and bring fresh perspectives to archival and library work [that] effectively absolves career-staff from responsibility for changing organizational culture and attitudes."[62] This harmonizes with Hathcock's[63] demand to end exploitative labor structures and Alston's[64] predictions of retaliatory measures.

This article is not meant to add to the narrative of the new professionals' responsibility to innovate, but rather to share ways that institutions have made residents feel welcome enough to explore their own professional goals and passions. It is also our intention to provide a critical discussion of unaddressed problems residents still face in the hope it will have a transformative impact on future residency programs.

One respondent from a university with a newly established residency program commented:

> Thank you for conducting this research…. I'm glad that this research is being done to address the concerns about residency programs and the fact that information and the conversation about residency programs needs to be changed. Though I believe the goal of most residency programs is achievable and admirable, I also believe that the inconsistency of how each program is run and what it means to the institution and to the resident needs to change.

Much more research needs to be done and many more residency programs need to engage in honest conversations with each other about eliminating the toxicity in some residency programs. We must reframe deficit-based residency narratives and provide truly welcoming, inclusive, and productive working environments for our new colleagues.

Appendix

Pre-survey question to direct to the appropriate survey:
QA. Please select the current stage of your library residency program:
Planning your first residency program but resident has not started yet (skip to section 1)
First month through first 3 years of the program (skip to section 2)
Greater than 3 years of the program (skip to section 2)

Section 1: Library Directors and Coordinators in the beginning stages of creating a Residency Program

Demographic Data
D1. Name of the institution
D2. How large is your institution?
D2a. How many FTE staff and faculty members are employed by your campus library system?
D3. How many residents do you plan to have in your program?
D4. How many years do you plan for each residency program cohort to last?
Q1. What are the mission and goals of your residency program? Please detail both the mission and the goals of your residency program separately.
Q1a. What is the mission of your residency program?
Q1b. What are the goals of your residency program?
Q2a. Please describe the activities that you are using with your library staff to build buy-in during the creation of the residency program (e.g., forum to solicit program feedback).
Q2b. If applicable, please describe the activities that you plan to use with your library staff to maintain buy-in for the residency program (e.g., quarterly reports on the residency's progress).
Q3 List 3 or more approaches that your library plans to use to measure sustained support for your residency program.
Q4. Describe the strategies and techniques that you are creating to assist the resident in being successful in their role. (e.g., one-on-one meetings with specific library staff in the initial phase of the residency program)
Q5a. List 3 or more ideas for creating a welcoming and inclusive space for new residents.
Q5b. List 3 or more ideas for mitigating any staff concerns with the residency program [and/or resident?].
Q5c. How did the 3 or more ideas listed in both 5a and 5b frame conversations about what a residency program can do for the library, institution, and profession as a whole?
Q6. Do you have any other comments or questions related to Reframing the Narrative for Residency Program?

Section 2: Library Directors and Coordinators who currently have a Residency Program
Demographic Data

D1. Name of the institution
D2. How large is your institution?
D2a. How many FTE staff and faculty members are employed by your campus library system?
D3. How long has your library had a residency program?
D4. How many residents have completed your residency program in total?
D5. In What year did your most recent cohort begin?
D6. How many residents do you have in each cohort?

D7. How many years does each resident work for your library?
D8. Does the incoming cohort overlap with the prior cohort?
D8a. If yes, by how long?
Q1. What are the mission and goals of your residency program? Please detail both the mission and the goals of your residency program separately.
Q1a. What is the mission of your residency program?
Q1b. What are the goals of your residency program?
Q2a. Please describe the activities that you used with your library staff to build buy-in during the creation of the residency program (e.g., forum to solicit program feedback).
Q2b. If applicable, please describe the activities that you use with your library staff to maintain buy-in for the residency program (e.g., quarterly reports on the residency's progress).
Q3 List 3 or more approaches that your library plans to use to measure sustained support for your residency program.
Q4 Describe the strategies and techniques that you are using to assist the resident in being successful in their role (e.g., one-on-one meetings with specific library staff in the initial phase of the residency program).
Q4a. Describe how the previous cohort assists the incoming resident(s) in being successful in their role.
Q5a. List 3 or more tips or ideas for creating a welcoming and inclusive space for new residents.
Q5b. List 3 or more tips or ideas for mitigating any staff concerns with the residency program [and/or resident?].
Q5c. How did the 3 or more ideas listed in both 5a and 5b frame conversations about what a residency program can do for the library, institution, and profession as a whole?
Q6. If applicable, list any new projects, activities, or programs that have been created by the current and former residents that benefited the library and/or campus community.
Q7. Do you have any other comments or questions related to Reframing the Narrative for Residency Program?

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Discovery and Recovery: Uncovering Nazi Looted Books in the UCLA Library and Repatriation Efforts

Diane Mizrachi and Michal Bušek

This is the story of six books looted by Nazis from the Jewish Religious Community Library in Prague (JRCLP) that were discovered recently in the University of California Los Angeles (UCLA) Library. No scholarly literature describing similar experiences of North American academic libraries was found, nor were any professional guidelines for repatriating library materials. We describe our repatriation process, explore the historical contexts of the Nazi confiscation of millions of books and describe the Allies' post-war restitution efforts. As the digitization of academic library holdings worldwide progresses, the probability of uncovering more material of questionable provenance increases. This case study can open a dialog on the issue.

Introduction

German poet Heinrich Heine's famous observation that "Where books are burned, in the end people will be burned too" is a chillingly accurate prophecy of the Nazis' methodical destruction of libraries and cultural institutions, murder, and genocide from the 1930s through the end of World War II. Their systematic looting of libraries all through Europe, described as "libricide," the regime-sponsored destruction of books and libraries,[1] resulted in the destruction and dispersion of an estimated 100 million books,[2] and their celebratory bonfires of "un-German" books are well documented. While the overwhelming emphasis was on the destruction of Jewish books, the Nazis also targeted other literature they believed antithetical to their ideology. Early on in the regime, however, they implemented a parallel strategy of building a core collection of Jewish works for their own scholars to study. They planned to build institutes where party scholars would interpret these texts and, using Nazi ideological perspectives, provide "scientific proof" of their racial superiority and justify their campaigns to demonize Judaism and annihilate the Jewish race. Amassing Jewish books for institute libraries was the first step in this plan. Even though these institutes and museums for "extinct people" were never built, Nazi agents stormed across Europe plundering millions of books and artifacts. They sent crates of loot to various centers for sorting and selection: preservation or destruction.

Among the thousands of libraries looted by Nazis was the Jewish Religious Community Library in Prague (JRCLP), a collection of nearly 30,000 volumes and manuscripts. Some of the collection was recovered after the war when JRCLP was folded into the revised Jewish Museum

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in Prague (JMP). Today, curators at JMP are attempting to locate and rebuild the original community collection based on their 1939 catalog. Using HathiTrust, a database with digitized full-text images from several academic libraries, they identified books with the community's original ownership stamp and accession numbers in the UCLA Library.

How did these precious items begin in Prague, move through Nazi confiscation in the 1940s, and end up in Los Angeles in the 2020s? How many more books of questionable provenance are in academic libraries worldwide? What steps should academic and other institutional libraries take to uncover and repatriate looted property? How are the curators in Prague discovering and rebuilding their stolen collection?

This paper tells the story of one particular case of discovery, and the UCLA Library's small contributions towards rectifying one of the most horrific crimes in human history. It also serves as a case study within the general issue of restitution of materials stolen through war and imperialism, and contemporary libraries' moral obligations towards ascertaining the provenance of materials in all their collections.

Review of the Literature

Reports of academic libraries discovering Nazi looted material in their collections and returning them to their original owners were not found in any English language scholarly publication. French libraries have publicized their continuing efforts to recover and return stolen material for years,[3] as have libraries in Germany and other European countries.[4] Restitution of plundered artwork, cultural artifacts, and other relics because of war, imperialism, and colonialism has been a major topic among museum curators, archivists, governmental and non-governmental bodies, and legal specialists for decades. Their processes have been ponderous and laden with bureaucratic and legal complications, but breakthroughs do occur.[5] There are many books and articles that document the Nazis' looting process and the recovery efforts immediately following the war, a selection of which are discussed below for historical context. In Europe today there are collaborative efforts among public, academic, and institutional libraries to return plundered books. However, the topic of discovery, restitution (return to owner or compensation), and/or repatriation (return to country of origin) of Nazi looted items in North American academic collections does not appear in the scholarly literature and needs to be addressed.

Historical Context: From Ideology to Action, 1933–1945

Immediately upon Hitler's consolidation of power in March 1933, his Nazi Party enacted a series of laws to actualize their ideological principles of the Master Race, one component of which was the purging of "non-German" cultural pollution from their society. "Non-German" books included all works about Judaism or by Jewish authors as well as the occult, Freemasonry, communism, Bolshevism and works promoting racial equality. Erasmus, F. Scott Fitzgerald, Ernest Hemingway, Thomas Jefferson, Helen Keller, C.S. Lewis, J.R.R. Tolkien, Mark Twain, and H.G. Wells are just a few among the scores of non-Jewish authors whom the Nazis banned.[6] Party members, particularly Nazi youths and student groups, enthusiastically confiscated books and archives from private collections, bookstores, and public and academic libraries. Orchestrated bonfires of books, "spectacular autos-da-fe,"[7] occurred throughout Germany in May 1933. At the book burning in Berlin, Propaganda Minister Joseph Goebbels declared to the crowd "…the era of exaggerated Jewish intellectualism is now at an end…you will do well at this late hour to entrust to the flames the intellectual garbage of the past."[8] Today, a memorial with Heine's prophetic quote marks the site of the bonfire.

The Nazis wished to project an image of a highly cultured civilization, but the world condemned the book burnings as thuggish and boorish.[9] An idea emerged to save "a small number of rare and precious volumes for commercial and scholarly purposes."[10] "[A] few 'intellectuals' among the Nazi leaders realized that the captured Jewish book treasures might serve a useful purpose for founding specialized research libraries on the 'Jewish Question.'"[11] They thus began confiscations for dual purposes: classic and important works shipped to Germany or held for commercial benefit, and the vast majority designated to paper mills and destruction.

Seizures and eradication of Jewish books and institutions filled another purpose besides "purifying" German society. Throughout their history, Jews had identified as the "People of the Book," which traditionally referred to the Torah (Bible) and its commentaries but was later adopted as a metaphor for the Jewish people's general love of learning and scholarship. By destroying their books, the Nazis simultaneously sought to destroy the core of Jewish identity, their cultural memory, and their unique story as a people.[12]

Destroying Jewish Books/Collecting Jewish Books

Nazi theoretician Alfred Rosenberg was assigned by Hitler to wage "ideological and spiritual war against Jews and Judaism," and to document "an overview of Jewish influence on the world for the last two hundred years."[13] To fulfill this charge, he envisioned the *Institute for Research on the Jewish Question* in Frankfurt am Main, just one component of a *Hohe Schule* (Advanced Training Institute) to study the "ideological enemies of Nazism," particularly the Jews.[14] He formed the Einsatzstab Reichsleiter Rosenberg (ERR), whose agents followed the Wehrmacht throughout occupied Europe plundering libraries in their wake. "At its height in 1943, the [Institute] library comprised at least 550,000 volumes."[15]

Other Nazi organizations ravaged Jewish libraries as well, particularly the Reich Security Main Office (RSHA) in Berlin, which amassed millions of books for their own Institute for the Study of the Jewish Question, later renamed *Antijüdische Aktion*. Hannah Arendt noted that because of the Nazis' '"strange craze' to establish museums commemorating their enemies, several services competed bitterly for the honor of establishing anti-Jewish museums and libraries."[16] They could not sort and catalog their hordes of books fast enough, which meant that millions were never unpacked from their crates.[17]

The Nazi cultural war was particularly brutal in Eastern Europe where the Slavic people were to serve as slaves. Hitler's advisor Martin Borman declared that "The Slavs are to work for us. In so far as we don't need them, they may die."[18] Nazis targeted and annihilated the local intelligentsia and other potential leaders. In Poland, some 40 percent of their university professors were killed, almost all public libraries were destroyed, and the entire publishing industry halted.[19,20] Policies in Western Europe were less brutal because of perceived racial and cultural similarities. Jewish and other 'un-German' works were confiscated and plundered, but the Nazis did not seek total cultural eradication as they did in the East.

As the war progressed and allied bombings intensified, the Nazis relocated the books further away from the fronts. "[M]any of the [RSHA] books were transported to castles in [northern Bohemia]; some 60,000 Hebrew and Yiddish books were sent to Theresienstadt."[21] Here, they forced a group of Jewish ghetto inmates called "Talmudcommando," led by librarian Otto Muneles, to catalog the collection for selection purposes. Jewish librarians in other ghettos were also forced to catalog looted material for the Nazis. Many risked their lives to smuggle out as many precious works as they could, hoping they could be saved for a more humane post-war world. Very few librarians survived the ghettos and death camps.[22]

As the Allies advanced, they commissioned agents to seek out and recover stolen cultural artifacts. The U.S. army established the Offenbach Archival Depository (OAD) for the collection and restitution of Jewish books, archives, and relics recovered in allied controlled territories. Characterized as the "American antithesis to the ERR" and "the biggest book restitution operation in library history,"[23] the operation was ironically located in the confiscated building of I.G. Farben, the chemicals conglomerate that had manufactured the gas used for mass murder in the death camps. The task was enormous—over three million books were shipped to the OAD. Some contained bookplates and other ownership details, but most did not or they had been removed, making it impossible to locate all the previous owners or their heirs. This raised a myriad of ethical questions: what should be done with collections whose owners, whether individuals or institutions, were annihilated or could not be determined? There was no precedent for such an undertaking. OAD's official policy was to return items to their country of origin, but dissenting opinions were voiced from all directions. Why should valuable collections of Jewish scholarship and civilization be returned to the cities and towns where Jews were methodically murdered, where no Jews remained, and where many of the people now living in these same towns were active participants in the persecutions? What should become of books, for example, belonging to a yeshiva (rabbinical school) in a town where all the Jews and their institutions were destroyed? Many of the Jews who did survive the war opted to immigrate, especially to Israel or the U.S., rather than face the post-war anti-Semitism in Eastern Europe, or the ghosts and horrid memories in their native lands. Leaders in Israel strongly believed that, as the new center of Jewish life where thousands of survivors found refuge, the orphaned books and relics belonged to the Jewish people in their natural homeland. Sending them to libraries in Israel seemed the most logical solution. But other factions were also interested in acquiring material for their libraries and commercial interests. Some individuals acted independently by sending thousands of documents and books to archives and libraries outside of Europe in a quasi-legal manner.[24] Other institutions sent their own agents to acquire material for their collections. Common thievery also occurred. After much negotiation, millions of books were distributed among academic libraries, Jewish organizations, governmental institutions, museums, archives, and book dealers in the United States, Israel, and elsewhere.[25,26]

Unfortunately, different attitudes towards repatriation still exist between the Western Allies and the Soviet Union/Russia. Whereas the allies saw it as their moral obligation to return recovered property to the greatest extent possible, hundreds of railroad cars filled with books, art, furniture, and other property recovered by the Soviet army were seen as trophies they earned through their crucial role in defeating the Nazis. Negotiations with the Soviets, and now the Russians, for repatriation have been slow and arduous, although a bit more open since the fall of the Iron Curtain.[27]

Cooperation and collaboration on repatriation continue today. At the *Holocaust Era Assets Conference* held in the Czech Republic in June 2009, forty-seven countries signed the non-binding Terezin Declaration agreeing on the obligation to rectify economic damages incurred by Holocaust victims and their heirs.[28] Attendees at follow-up conferences report on progress and challenges encountered.[29] Investigators have established databases such as *Looted Cultural Assets*[30] and *The Rare Books of the Shimon Brisman Collection in Jewish Studies*[31] that contain records of property, book collections, and illustrations of ownership stamps to assist researchers in their work. The public hears about instances of repatriated artwork in the general press regularly, but the process of establishing provenance of individual books and returning them to their proper owners or heirs does not garner many headlines.

Historical Overview of the JRCLP Collection

The Jewish Religious Community Library in Prague (JRCLP) was established in 1857 to accommodate donations of private collections from Jews as they became less interested in maintaining personal Judaica collections. It was opened to the public in 1874, becoming one of the first Jewish community libraries in Europe and among the richest. Its 1939 catalog, still in existence, records nearly 30,000 books, manuscripts and periodicals. Like Jewish libraries everywhere under the Nazis, the collection was confiscated and dispersed.

Much of the collection was recovered after the war, but approximately ten thousand books listed in the pre-war catalog were still missing. As part of the post-war clean up, the reestablished Jewish Museum received thousands of homeless books from Theresienstadt, local castles, and other book depots, many of which were duplicates. They distributed some duplicates to various entities, including 1,050 books to the second-hand bookshop *Bamberger and Wahrmann* in Jerusalem in exchange for Judaica and Hebraica material otherwise impossible to acquire.[32]

However, trying to rebuild the Community Library immediately after the war and throughout the forty years of communist rule proved futile. The surviving Jewish community did reestablish the Museum into which they incorporated the Community Library remnants, but staff had to fight for space and qualified workers. It cannot be determined if any of the missing volumes were recovered during this time, certainly not a significant amount. Because the original JRCLP collection was the historical basis of the Jewish Museum, as well as its most valuable collection, it was important to locate and recover as many of its volumes as possible.[33]

JMP Work Today

The Jewish Museum in Prague intensified its research for lost items about six years ago when the digitization of collections and other tools made searching more manageable. JRCLP had always used labels and ownership stamps to mark their books, usually on the title page and elsewhere in the text. Museum researchers therefore seek these stamps, signatures, and accession numbers to identify their lost books from the pre-war period. Results from title or ownership searches in various databases often include digital scans on which the JRCLP stamps and accession numbers may appear. When researchers find a lost item, they contact the current owner and request repatriation. Curators also search online library catalogs because some libraries list provenance in their bibliographic records. If a possible lost book appears in a catalog, they request a scan of the item and check it for stamps and signatures.

Auction catalogs are another tool. They usually feature title pages of items on which identifying stamps and signatures may appear. When curators identify an item from the JRCLP, they ask the auction house to halt the auction and a restitution claim ensues. In their negotiations with owners, they explain that the Jewish Community Library is now part of the Jewish Museum in Prague and serves researchers, students, and the public. Negotiations can be complex and lengthy, and sometimes they take years. Every country has a different legal system, which adds to the complexity.

Finding the oldest and most important prints from the sixteenth and the seventeenth centuries is the top priority. Unfortunately, these books are often held in private collections and basically untraceable. So far, only about ten older prints have been recovered, and dozens more are still missing. JMP therefore focuses on finding newer books from the nineteenth and twentieth centuries in their quest to restore the original collection as completely as possible.[34]

UCLA - JMP Project

In June 2021, Ivan Kohout, a curator at JMP, contacted the UCLA Librarian for Jewish Studies explaining that by using HathiTrust he discovered three items in our collection with the JRCLP's pre-WWII ownership stamp and accession numbers, and gently inquired about repatriation. As a leading academic library, UCLA was an early member and contributor to HathiTrust, a collaborative of academic and research libraries preserving over seventeen million digitized volumes since its founding in 2008 (35). UCLA holds the physical copies, but the digitized volumes are part of the library's contribution to HathiTrust. The three books, works of Judaica in Hebrew, are

- *Sefer Yesod More ve-Sod Torah* (Fundamentals of Awe and the Secret of the Torah), published in Prague, 1833.
- *Sefer ha-Shorashim ha-Mekhuneh Sefat Emet* (The Book of Roots; a Hebrew-German Lexicon), Prague, 1803.
- *Sefer Teshuvat ha-Geonim* (Responses of the Great Sages), Ungvar, Ukraine, 1865.

Subsequently Kohout discovered two more JRCLP volumes in the UCLA Library, both in French: *Index Raisonne des Livres de Correspondance de feu Samuel David Luzzatto*, Padua 1878; and *Histoire des Médecins Juifs: Anciens et Modernes,* Brussels, 1844. This author found a sixth item among a backlog of unprocessed UCLA books: *Teshuvot Ketav Sofer - Yoreh De'ah*, (Responses on the work Yoreh De'ah), from Bratislava (Pressburg), 1878/9.

This was not the first request for the UCLA Library to return a book stolen by Nazis. In 2019, Virginia Steel, the Norman and Armena Powell University Librarian, received an inquiry from the Cultural Center of the Jewish Community in Munich asking for the return of a treatise on the topic of circumcision, published in Ansbach, Germany, 1844. It had been part of Munich's Jewish Community Library, which was looted by the Gestapo in 1938. Steel stated that it was unclear how the UCLA Library acquired it, but that it was sometime prior to 1986 when we cataloged it.

The repatriation request was unprecedented. There were no procedures, protocols, or workflows in place, and administrators were not aware of any professional literature that could provide guidance. They therefore identified steps in consultation with the leaders of the various units that had responsibility for any aspect of the book's life at UCLA: acquisitions and metadata services, preservation, and the Southern Regional Library Facility (SRLF - the storage facility on campus that provides space for materials from across the UC Library system).[36]

After receiving the request from Prague in 2021, we physically checked and verified all items in question. The JRCLP stamps and the accession numbers on the title pages matched the corresponding entries in their pre-WWII catalog. Figure 1 shows an identifying stamp from the JRCLP collection. Figure 2 shows the title page of *Sefer Yesod More* with the stamp and accession number (2020) clearly visible at the bottom. Figure 3 shows the title page of

Index Raisonne with two different JRCLP stamps and the JRCLP accession number. Appendixes A and B list all the names used by Prague's Jewish Community Library and various ownership stamps.

After the print verifications, we compared every page of the HathiTrust copies to their physical originals to ensure completeness and legibility. Thus, all scholars will have access to the truest digital versions possible. We decided to rescan one volume in order to improve its legibility. *Teshuvot Ketav Sofer* was scanned and entered in HathiTrust and our catalog system before its return to JMP. The UCLA Library catalog was amended to note why we withdrew the physical copies and to provide links to the digital versions. Using WorldCat, a comprehensive catalog of libraries worldwide, we found that at least one other institution held a copy of each book as well; therefore, our volumes were not unique. Our Conservation and Preservation Department checked and treated each volume as needed for insects, mold, and any damage that we could repair. The Prague curators requested us not to remove signs of UCLA ownership (e.g., a new binding, ownership stamps, etc.). Inadvertent damage can occur during erasure processes, and the UCLA insignias add another "chapter" to each book's history. The books were packaged, insured, and shipped to Prague following the protocols for shipping rare books.

FIGURE 1
A Pre-WWII Ownership Stamp of the Jewish Community Library in Prague

FIGURE 2
Title page of *Sefer Yesod More* with ownership stamp and accession number (2020) at the bottom


ספר
יסוד מורא
וסוד תורה
להחכם הכולל הפילוסוף אלהי
אברהם בן מאיר ן' אבן עזרא ספרדי
מדבר מחלוקי המצות, ומענין לימוד החכמות והידיעות וספרי נ"ך
לעמוד על דברי תורה שבעל פה, לעלות אל הכמות האמת
להבין אלה המצות אשר יעשה האדם וחי בהם.

וקראתי לו
לוית הן
על ראש אדוני אבי ומורי התורני
גאטטליב כ"ט שטערן.
ומראה קדש זכר לפסוקי תנ"ך ודברי חז"ל
קראתי בשם
שיח יצחק
זכרון עולם לשם אבי אמי ה"ה איש תם וישר
כ"ה איצק בן מו"ה יעקב זצ"ל.

זלמן בן גאטטליב מכנה טוב שטערן
בקהל ישרון רעכניץ.

Prag 1833.
Druck bei M. I. Landau, lange Gasse, Nro. 922.

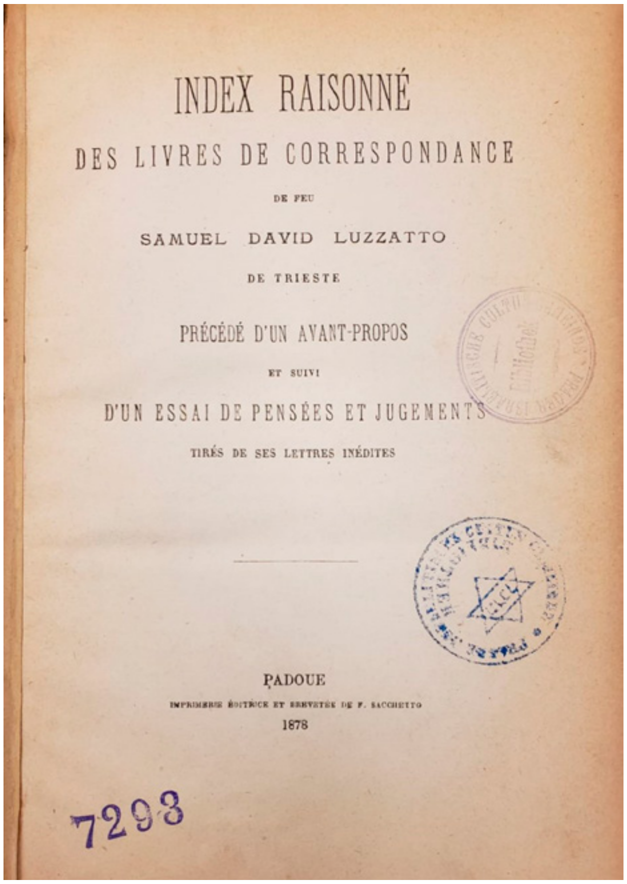
2020

How Did They Get from Prague to UCLA?

At this time, we cannot determine precisely how the looted books ended up in the UCLA Library, but we can make some well-founded assumptions.

As discussed above, after the war, millions of confiscated books were discovered throughout Europe. The massive challenge of finding individual owners or their descendants, and the uncertainty of what to do with the property of the hundreds of communities and institutions that were annihilated, created moral and

FIGURE 3
Title Page of *Index Raisonne* with Two Different JRCLP Stamps and the Accession Number

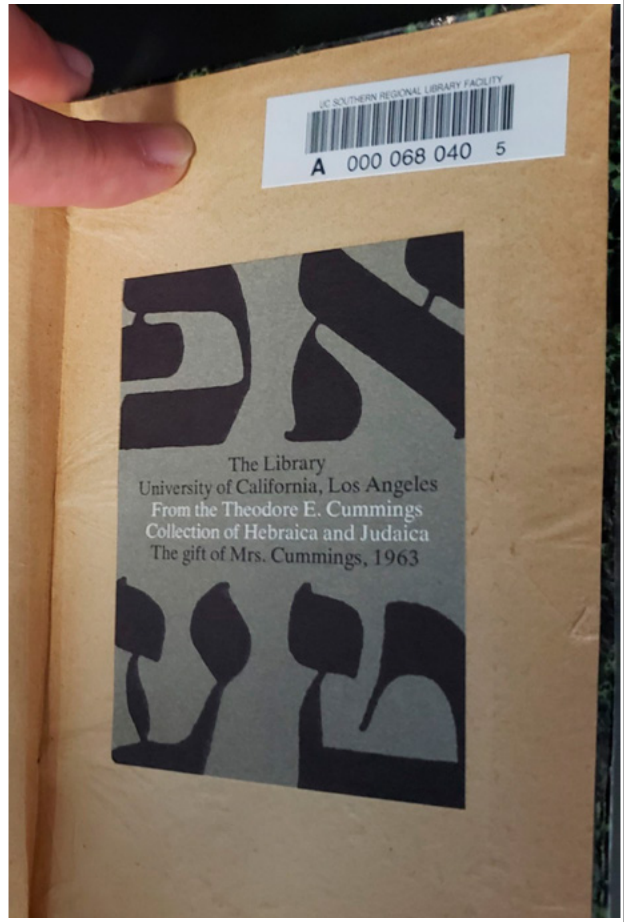


INDEX RAISONNÉ
DES LIVRES DE CORRESPONDANCE
DE FEU
SAMUEL DAVID LUZZATTO
DE TRIESTE
PRÉCÉDÉ D'UN AVANT-PROPOS
ET SUIVI
D'UN ESSAI DE PENSÉES ET JUGEMENTS
TIRÉS DE SES LETTRES INÉDITES

PADOUE
IMPRIMERIE ÉDITRICE ET SERVITÈS DE F. SACCHETTO
1878

7293

FIGURE 4
The Cummings Collection Bookplate in *Sefer ha-Geonim*



emotion-laden dilemmas. "Jewish scholars and intellectual leaders were anxious to build up Jewish library reserves in Israel or to "save" abandoned Jewish books…and redistribute them to Jewish institutions'' outside of Europe.[37] Book dealers also purchased items for their inventories. Some books may have been purchased by collectors or dealers from Nazis during the war, or taken as 'souvenirs' by Allied soldiers and others and then sold to dealers or donated to collections. We believe that UCLA acquired the JRCLP items during a major purchasing campaign in the 1960s.

UCLA was established in 1919 and therefore is a relatively young research university. As interest in Jewish Studies grew and more courses were offered during the 1950s, the Library needed to expand its resources to support scholarship and coursework.[38] It was in a fortunate financial position to purchase significant amounts of material in the 1960s. A major boost to the collection was the acquisition of the entire inventory of 33,520 volumes from the *Bamberger and Wahrmann* bookstore in Jerusalem in 1963. This was the same bookstore that acquired over 1,000 duplicate books from JMP in an exchange after the war.[39] The purchase was initiated by Professor Arnold Band, and was enabled by a generous gift from the Cummings Family of Beverly Hills.[40,41] Items from that purchase are now distinguished as the *Cummings Collection* with an identifying bookplate. One of the JRCLP books contains the bookplate, as shown in figure 4, indicating that it was acquired by *Bamberger and Wahrmann* at some point after the war and included in this transaction. At that time, UCLA assigned sequential accession numbers to each book as it was processed. All six JRCLP items discovered so far have similar UCLA accession numbers: 2079240, 2089113, 2098041, 2099796, 2100243, and 2114257. This indicates they were acquired around the same time when library holdings were only around two million volumes, suggesting they were all obtained and processed in the early to mid-1960s.* It thus appears that the JRCLP volumes were purchased from various booksellers and dealers after the war. Further investigation is needed to ascertain more precise information.

Repatriation Actions

The UCLA Library believes that the repatriation of Nazi looted books from academic library collections is a vital ethical issue. We therefore decided to publicize this case as widely as possible and expand on the topic in a series of events. With the current rise of anti-Semitism and Holocaust denial worldwide, and because of continued book censorship in the United States and elsewhere, it is imperative to remind our public of the crimes that were committed. Teaching about the ongoing process of restitution efforts in libraries and museums and demonstrating a commitment to this process is crucial. As of this writing, the UCLA Library has engaged in several events and is planning more:

- We held a "hand-over" reception with members of the Library, campus community, and representatives of the Czech and Israeli Consulates in Los Angeles. The University Librarian symbolically handed the books over to the Czech Consul General with brief remarks to commemorate the occasion.[42]
- We publicized this event through social media and other Library and campus communication channels.
- Librarians and staff mounted a detailed online exhibit telling the story of the books and our repatriation efforts.[43]
- The Library and the Alan D. Leve Center for Jewish Studies held an online four-part symposium series discussing this case and the broader questions of Colonial histories and cultural sovereignty.[44]
- Librarians are preparing academic and general articles and conference presentations that discuss this particular case and related topics.
- The Library is developing plans for a long-term project to review our early Judaica holdings for ownership stamps and other signs of questionable provenance, whether from Prague or other institutions, and to plan repatriations as relevant.
- We are also planning a campaign to raise staff awareness throughout the Library of signs of questionable provenance and their significance.

On a Judaica librarians' listserv, only one colleague reported that their institution had repatriated volumes to their pre-WWII owners. Another stated that it was an important topic, and she would encourage her staff to be aware of the possibility. It thus becomes apparent that staff throughout the library system should be vigilant for signs of questionable provenance. Subject specialists, catalogers, members of digitization teams, special collections staff, acquisitions, interlibrary loan staff, preservation specialists, student workers reshelving books and others may all come across such material at some time. Staff may see an ownership stamp

* As of 2022, the UCLA Library holds over 12 million print and electronic volumes, of which more than 350,000 are Hebraica and Judaica

in a volume but not realize its potential meaning, or they may overlook it entirely. One idea to raise staff awareness is to create and distribute a graphic or poster on which we would illustrate various ownership stamps from looted collections, and remind staff to contact the relevant subject specialist for further clarification if found.

Conclusion

In the last three years, two European institutions have uncovered volumes from their pre-WWII collections in the UCLA Library using the HathiTrust database. Library administrators did not know of any official guides or protocols to process repatriation and therefore developed the following steps:

1. Physical verification. Check the ownership stamps, accession numbers, and any other identifying marks to match those presented by the claimant.
2. Compare physical texts to digitized versions for completeness and legibility. Rescan if necessary.
3. Scan items that have not yet been scanned before repatriation to ensure that scholars have access to digital versions.
4. Search for each item in worldwide catalogs for other owners to determine scarcity.
5. Remove the physical volume from the collection. Update the catalog to note the removal and the reason why. Include a link to the electronic version. Notify partners in any cooperative or collaborative catalog system.
6. Check the items' conditions for damages and treat or repair as needed. Ask the original owners whether to remove newer book ownership insignias or not–encourage leaving them in place to prevent inadvertent damage during the erasure process.
7. Insure and ship books to the original owner using guidelines for shipping rare material.

This author believes it is highly likely that we will find more looted books and other material of questionable provenance in our collection, whether from Prague, Germany, or elsewhere. As the digitization of academic library holdings worldwide progresses and a broader public gains access to these collections, the chances for discovering more looted material increases. This goes beyond Nazi loot but includes, for example, photographs or diaries of Indigenous, colonized, or enslaved people. Librarians must raise the awareness among our colleagues of the possibility of finding material in library stacks from any area in the world where war and violence have ravaged libraries, archives, and communities. Individuals who collected pieces on the site may have acted in good faith, believing that they were saving precious and irreplaceable works for posterity. But when and to whom should they be returned? By making them accessible to the world through digitization, are academic libraries fulfilling their ethical and legal duties? What *are* our legal and ethical duties in this realm?

Governmental and non-governmental organizations have been working with museums, archives, and legal experts for years to create protocols and laws for the restitution of artwork and cultural relics. Libraries can look to them for ideas and guidelines, but they must be prepared when questions of provenance occur among their own holdings. The *International Forum on Judaica Provenance* is a recent initiative of the National Library of Israel and the Association of Jewish Libraries (AJL). The forum consists of thirteen curators and scholars from the arts, law, history, and Judaica in seven countries whose goal is to develop a White Paper of recommendations. At the AJL conference in June 2023, members realized that a handful of institutions are currently working on issues related to Nazi-looted books in their collections. A task force was formed to promote the sharing of various activities and to support one another. Some of the goals include creating an ownership stamp database, and a curriculum for provenance research training. This White Paper could serve as a model for other communities as well.[45]

The return of items from the UCLA Library to their original home in Prague and assisting the curators rebuild their pre-WWII community library is just one small step towards rectifying a past injustice. As small as our contribution may be within the greater picture, the process has been immensely satisfying on a personal and professional level. By publicizing our efforts as broadly as possible we hope we can remind other academic librarians and scholars of the need to continue to redress cultural and ethnic crimes, whether historical or contemporary.

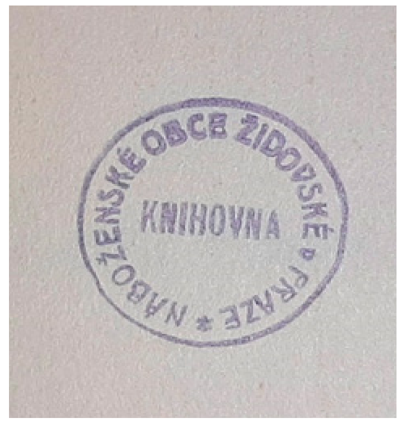
Acknowledgements

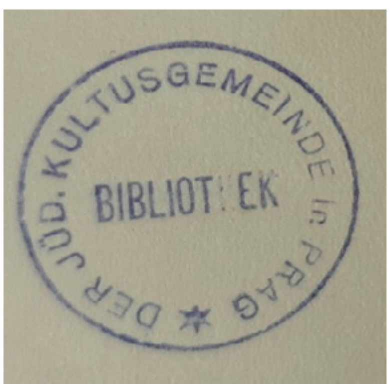
The authors are grateful to Mr. Ivan Kohout, Curator at the Jewish Museum in Prague, whose work began this project; Ms. Alena Aissing, UCLA Library, for translating an article from Czech to English; and Dr. Elaine Goodfriend, California State University Northridge, for reviewing and providing helpful suggestions for this manuscript.

Appendix A.
Various Names of Prague's Jewish Community Library

- Prager israelitische Cultus-Gemeinde Bibliothek
- Bibliothek Der Jüd. Kultusgemeinde in Prag
- Knihovna Náboženské obce židovské v Praze

Appendix B.
Ownership Stamps Used by the Jewish Religious Community Library in Prague





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21. Friedman.

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Teaching Expert Information Literacy Behaviors through Decision-Based Learning

David S. Pixton

Standards for information literacy challenge institutions to create expert depth of knowledge in students. One potential way to do this is through an instructional method called Decision-Based Learning, which seeks to build conceptual, procedural, and conditional knowledge explicitly. This paper details the results of a multisemester study involving groups of engineering and technology students taught using this method. Students tended to engage with a pre-class learning module based on the new method more fully than the comparable groups of students used pre-class instructional videos. Those taught with the new method also showed significant improvement in their performance in post-tests.

Introduction

University curricula often include information literacy (IL) instruction in order to equip students with skills necessary to engage wisely and ethically with information and to facilitate the creation of new knowledge.[1] At Brigham Young University, a large private university in the western United States, upper-division writing courses provide one common framework for teaching IL skills. These core-required courses challenge undergraduate students to perform library research on a topic of their choosing and present their findings in a literature review or persuasive paper.

Academic librarians at this institution provide IL training in support of this literature review assignment during a single fifty-minute session (a "one-shot") held in the library. This training provides an opportunity for students to get individualized help relating to the selection, scoping, and searching of research topics. In addition, it may also include a discussion of information search strategies, search language, and evaluation and management of sources. In these latter areas, the Association of College and Research Libraries' *Framework for Information literacy for Higher Education* (or simply "the Framework")[2] provides guidelines for delivery of content. In any given course, an IL instructor may determine a few aspects from the Framework that are appropriate for focus within the given context. Of particular interest to the instructional sessions for advanced writing are the frames "Authority Is Constructed and Contextual," which speaks to principles of source evaluation, and "Searching as Strategic Exploration," which informs the teaching of search strategy.

Each of the frames in the Framework defines desirable IL competencies in terms of *expert* behavior. Experts are distinguished from novices by the manner in which they think and

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reason. Defining characteristics of an expert include deep and *organized* content knowledge and *conditionalized* knowledge that informs when to apply facts and methods.[3] As noted by Seeber,[4] application of conditional considerations is central to IL behaviors, and the recognition of the influence of conditional knowledge on decision-making in this domain is one of the key contributions of the Framework. Indeed, the wording found within the Framework supports this notion of conditional knowledge as an essential characteristic of IL experts: e.g., "Experts select from various search strategies, *depending on the sources, scope and context of the information need*."[5]

The lofty goal of building expertise in the IL domain is not easy to achieve, nor do educational institutions presume that students will exit their doors having fully developed it. Certain levels of expertise take deliberate practice over time.[6] Also, a central challenge is finding space within curricula to provide adequate focus on IL principles while not overloading students during limited class time. Certainly, the format of a one-shot provides limited opportunities to build expert-level depth of knowledge during the short instructional period. However, the language of the Framework challenges institutions to do better in this respect.

One possible way to improve the chances of building expertise is to expand the scope of the IL instruction by increasing the level of integration of IL concepts within the hosting course (in this case, advanced writing). However, the process of course integration can be quite difficult and may achieve varying degrees of success, often due to differences in priorities of individual writing instructors or curricula. Thus, some researchers recommend a flexible collaborative approach tailored to each individual instructor and institutional culture.[7] In the case represented in the present study, class members in a single library session may represent a variety of host classes, making deeper integration of IL training into these several classes quite complex. Because of this, other alternatives for improving student expertise levels have become of great interest.

Another approach to improving the depth of learning that has captured the attention of several IL instructors is the use of a flipped classroom model. Some researchers note that the flipped classroom could "extend…interactions with students," overcoming some of the time constraints of a one-shot.[8] Arnold-Garza adds that benefits specific to library instruction include the ability to "focus on efficient use of class time which accommodates different learners."[9] Indeed, the ability to learn at one's own pace before class, while offering instructors greater flexibility to improve in-class teaching,[10] may be an effective way to combat disengagement by students during research-focused classes or feelings of incompetence with research resources, such as "library anxiety."[11]

However, simply flipping a class alone does not appear to lead to deeper learning and expertise. Quantitative and qualitative testing of IL instruction employing a flipped classroom model has yielded mixed results. Some researchers note that students have preferred aspects of the flipped classroom model,[12] and some instructors have found that the model yields higher quality student work.[13] Yet others have found no measurable difference in student performance, or even inferior results compared to traditional methodologies.[14] At least part of the reason for these mixed findings could be "multiple conceptions" of the flipped classroom approach[15] and differences in approach, execution, or affective influences such as teacher enthusiasm.[16] Another challenge noted in some of the studies was that of accountability for pre-class work in flipped classroom models.[17] Some IL programs were able to integrate with host courses to provide motivation through graded assignments, which was valued as being a key success factor.[18] Others rely on more internally focused motivations for completing out-of-class work. Lacking or uncertain student engagement in pre-class work adds ambiguity to what the aforementioned study results really indicate.

Thus, while flipped classroom approaches may provide IL instructors with a promising framework for deeper learning in a one-shot environment—opportunities to extend instructional time with students, provide self-paced learning, and employ more active in-class learning techniques—whether it hits the mark depends on what happens within that framework. In other words, capturing the promise relies on success factors including student motivation for pre-class work, the methods chosen for pre-class and in-class learning, and their execution. The following sections seek to investigate these concepts further.

Decision-Based Learning

The instructional techniques exemplified in the literature above are highly varied. Most focus on increasing student engagement, but in addition it is instructive to return to the Framework and ask what methods might best create the *expert* knowledge described, including both *organized* content knowledge and *conditionalized* knowledge.

Biggs suggests that while much focus in the academic environment is placed on teaching conceptual and procedural knowledge (the "what," "why," and "how"), inadequate focus is placed on explicitly teaching conditional knowledge (the "when" or "under what conditions").[19] For example, even though a class of students may effectively learn a number of useful analytical methods for solving a variety of different types of problems over the course of a semester, these students often have difficulty choosing which method is appropriate to use in a "real world" scenario.[20] One contributing factor to this is that the "real world" usually lacks the context that is naturally present during university instruction: methods to apply to a particular problem are often obvious based on the context of the most recent instruction given. Lacking explicit focus on making a "functional connection" between conceptual or procedural knowledge and the conditions for applying such, students may not build this type of expert behavior during their university experience.[21]

Swan, Plummer, and Lush assert that, if proper attention is given to building conditional knowledge and schematizing this way of thinking, at least some level of expertise can be achieved prior to graduation.[22] One teaching methodology that focuses on schematizing conditional knowledge as a primary learning activity is Decision-Based Learning (DBL).[23] This method exposes students to an expert's thought process (e.g., figure 1); the students then learn this process by making a series of connected decisions that the expert would make.

Sansom, Suh, and Plummer report on the use of a DBL model to teach a short unit on heat and enthalpy to students as part of a full-semester general chemistry course.[24] In this study, researchers found that student performance on a midterm exam improved significantly with limited use of an expert decision model (two class periods). Moreover, they found that the best results were obtained when students engaged with DBL models at an optimal level. Specifically, students who were introduced to the DBL model in class and then worked five to ten problems outside of class performed better on their exams than students that either worked zero out-of-class problems or worked twenty or more problems. While these results provide a level of optimism that the DBL method can improve learning, even when used briefly during the semester, they expose the reality that the environment of teaching and learning is complex–researchers are still seeking understanding of how to apply the methodology.

Plummer, Taeger, and Burton studied the use of DBL during a semester-long class in the religious studies domain.[25] In this study, the students used the expert's process model more extensively throughout the semester. Student perceptions were generally positive in this qualitative study, with a strongly recurrent theme that the DBL method helped students organize scriptural information and add a sense of detail and realism to their readings.

In the IL domain, Katz has performed the only known work using DBL.[26] This researcher tested a DBL instructional module in connection with library sessions that are part of a college-level writing course for first-year students. Katz found that students who were taught using the DBL method adopted higher-level source evaluation strategies than other students taught using an existing method.

The present work seeks to expand on the current state of knowledge relating to the DBL method by investigating its use in a classroom experience typically limited to a single in-person interaction with students. This study complements previous work in the IL domain by focusing on a broader set of competencies suitable for more experienced students, including source evaluation and search strategies. It also seeks to quantify how this teaching method influences student engagement in pre-class material in a flipped classroom setting.

Methods

In this study, the author used a quasi-experimental design (see discussion of participant selection below). Data gathering instruments included student self-assessments relating to the level of engagement in pre-class tutorials, as well as pre-instruction and post-instruction tests, all delivered in an online survey format. Students provided qualitative insights by answering a few open-ended survey questions regarding their perceptions and use of the materials.

Selection and Grouping of Participants

The target population for this study comprised students enrolled in an advanced writing course who signed up for a library session with the author. These students were organized into multiple library sessions, each limited to ten or fewer students. During each semester in the study (three full semesters and two terms), half of the sessions received DBL content (twenty-nine total) while the other half (thirty total) received a lecture-based treatment. All students within a given library session received the same treatment.

The sampling of students to attend specific sessions was both purposeful, where students were arranged by major, and voluntary, where students self-selected possible sessions based on their availability. Session assignment was done through a custom scheduling tool used at the author's institution. Using this tool, students first indicate all potential time slots for which they are available during the teaching window. Next, the instructor set maximum class size and selected a specific discipline or group of disciplines to be displayed; based on this information, the tool then displays the number of students available in each time slot. When the instructor selects a time slot, the tool assigns a random sample of students within that time slot to the session and removes those students from any other locations they may occupy on the calendar. Though the study population was already somewhat academically homogeneous (comprising a subset of engineering and technology majors that the author serves), the author made further attempts wherever practical to form sessions consisting of a single engineering discipline. This preserved an instructional objective of greater in-session focus on search tools and examples most relevant to the students' specific areas of study. In some cases, sparse representation of some disciplines in the class or tight schedule availability for some students required creating sessions that comprised a mix of disciplines, resulting in less optimal focus on discipline-specific in-class tools. Notwithstanding these individual differences in class constitution, the basic competencies and principles taught (and assessments given) were independent of the specific focus on discipline-specific tools and examples.

To remove potential performance bias that may follow from students in different majors being disproportionately assigned to a given treatment, the author identified pairs of sessions with similar majors (or mixes of majors) and scheduled at similar times of the day. Then, he assigned one session of each pair to the DBL treatment using a random number generator (the other was assigned a lecture treatment).[27]

Participation

To ensure ethical treatment of research subjects, all interactions with students were accomplished through methods and instruments (email, surveys, written and oral statements) approved by the institution's Institutional Review Board (IRB).

As previously mentioned, all the students received one or another of the tested educational treatments, and pre- and post- testing was part of the instruction for all students; however, participation in the study itself by allowing test data to be used and by providing student experience feedback was voluntary. Students were not required to make their test data and survey comments available to the study in order to satisfy their course requirements. Helping to minimize the potential for perceived coercion to participate is the fact that the author was only involved in providing training during the one-shot library class, and he was not responsible for grading of any student work–student attendance at the library session was recorded by a teaching assistant and transmitted to the students' advanced writing instructors. Each student who chose to participate opted into the study by signing an informed consent form as approved by the IRB, which they left in the instruction lab at the end of the session.

The author excluded from the study all students who elected not to provide consent. Some students provided consent but elected not to participate in one aspect or another of the study. In these cases, the author evaluated the available student data where appropriate. For example, where either pre- or post-instruction test scores were not available for a student, this student was not included in the analysis of pre- and post-test scores but was included in analysis of participation levels where that data was available.

Students received no incentives for participation, other than the potential benefits reaped from the instructional modules and engagement with the pretest. In lieu of incentives, the author tried to remove as many barriers to participation as possible, including ensuring confidentiality of participation and minimizing the time commitment to complete surveys related only to the study, which comprised student perception questions that were given following the instruction period and at the end of the semester (see Assessment of Treatments below).

In total, 260 students out of a possible 318 attending the class (82%) consented to participate in the study. Slightly more students in the lecture group consented to participate (132 of 160 assigned to the group, or 83%) versus those assigned to the DBL group (128 of 158 assigned, or 81%). Two hundred and twenty-five provided full pre-instruction and post-instruction test data (71% of the total possible); 113 such students (50.2%) came from the DBL group and 112 (49.8%) came from the lecture-based instructional treatment (see Instructional Content section below). A total of twenty-five students who originally signed up for a session did not attend any session; of those ten were from those sessions assigned to the DBL group and fifteen were from those assigned to the lecture group. Noting that this is a small sample of data, it may be concluded that the attrition rates among groups are at least similar in magnitude.

Interactions with Participants

Notifications

The author (instructor) sent notification of assigned sessions to all students via email approximately a week before the beginning of their session. This email provided links to the pre-session materials with instructions for completing them, and contained a statement that the session was part of a study of teaching methodologies. The email also directed students to complete all tasks prior to class, first completing the pre-quiz without assistance, which they self-certified. The email informed students that the quiz results would not have any impact on their course grade. Students received a reminder email approximately twenty-four hours prior to their scheduled class.

Follow-up

Following completion of the semester, the instructor sent a final survey to all students who elected to be part of the study, via an email message approved by the IRB, in order to assess their experience using the materials given pre-session and to gather other user-offered feedback. This final survey was sent within five days of the last day of classes and was left open for thirty days.

Instructional Content

The instructor designed learning experiences in this study such that they would present a similar scope of content to both DBL and lecture-based groups. The overall content was divided between pre-session and in-session delivery mechanisms in proportions appropriate for the teaching method.

Pre-session Content

Pre-session assignments included a pretest and a pre-class activity. For their pre-class activity, the lecture-based group received links to four online tutorials that instructors have previously used as preparation for their library sessions.[28] These tutorials cover concepts including use of keywords, constructing searches with Boolean operators, assessing authority and reliability of sources, and following a citation trail; all four take less than five minutes to view. In lieu of these four tutorials, the DBL group received a link to a web-based interactive learning exercise using the DBL method (approximately twenty minutes to accomplish).

In-session Treatment

At the beginning of the library sessions, the instructor fielded questions regarding concepts encountered in the pre-class material. The students in the lecture-based group then received instruction on essential material that their pre-class assignment did not cover. The instructor then provided both groups with a live tutorial on how to use a library database appropriate for their discipline, using a class member's research topic as an example.

Following this demonstration, the instructor gave students in both groups a short post-test on the material and then spent any time remaining in the class period providing individualized attention to student projects.

Similarity of Content

Because the DBL and lecture delivery methods have fundamental differences, the instructor took care to ensure critical content was essentially the same. The study aside, it was the instructor's desire and responsibility to provide the best possible learning experience for each group, regardless of the assigned treatment. Nevertheless, it was not practical to make the pre-session training experiences identical in content. For example, some portions of the videos used by the lecture-based group were incorporated into the DBL modules, but some of the concepts in the videos were outside of the learning objectives of these particular library sessions. Likewise, DBL modules contained more extensive information in some areas than was possible to cover in the lecture-based treatment. In these cases, pre- and post-test questions ignored any outlying aspects; assessments were focused only on principles that were treated equivalently in the two groups.

Table 1 maps the various concepts to when they were taught for each method. As shown in the table, the DBL method provided more detailed pre-session information delivery on some topics. In contrast, the lecture method delivered more detailed content in session, although the short lecture-based online videos viewed prior to the session did introduce several focus topics. This provided for some level of equity in expectations of the students in

TABLE 1
Partitioning of Content for Treatment Groups

Concept	Pre-session		In-session		In-session accommodation for LEC group	Assessed in pre-/post-test
	DBL	LEC	DBL	LEC		
Database selection	✔✔	✔	✔	✔✔	Different databases described in detail	Y
Keyword vs. subject search	✔✔			✔✔	Search types introduced & compared	Y
Choosing keywords	✔	✔	✔	✔		Y
Formulating search strings			✔	✔		Y
Managing search results	✔✔	✔	✔	✔✔	Rules of thumb for search provided	N
Broadening/narrowing techniques			✔	✔		N
Using database filters			✔	✔		N
Following a citation trail	✔	✔				Y
Using citation indexes (practical)			✔	✔		N
Levels of peer review	✔✔	✔	✔	✔✔	Levels of review for conference vs. journal papers discussed	Y
Assessing level of peer review (practical)	✔		✔	✔	(None)	N
Author credibility, source bias	✔	✔	✔	✔		Y
Currency of information	✔	✔	✔	✔		Y

Key: ✔ = basic content
✔✔ = detailed content

both classes—both were expected to perform pre-class assignments that would inform their classroom experience. Note from the previous section that the two groups did have different time expectations—one twenty minutes and one five, although actual times spent on each assignment were not collected. This generally recovered more time for individualized help in DBL classes, as the lecture portion generally finished approximately ten minutes faster than lecture-based sessions.

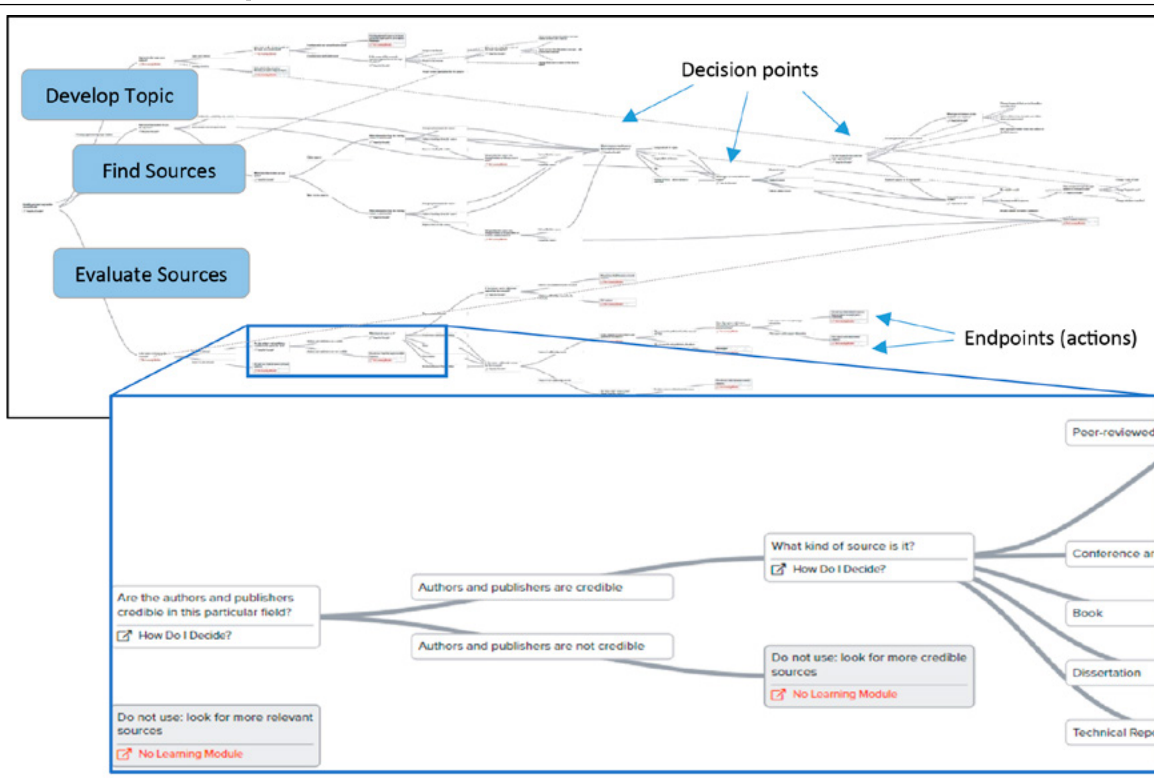
Decision-Based Learning Content Development

A DBL instructional module comprises three main parts: an "expert decision model" (EDM), a problem bank, and a set of short topical training modules.[29] The University's Center for Teaching and Learning provided instructional design guidance and a custom software package that facilitated creation and presentation of the DBL instructional module. An alternative mode of implementation for the EDM is a hyperlinked slideshow format.[30]

The EDM reflects the knowledge of the instructor in the chosen instructional domain. Figure 1 shows a top-level view of the EDM used in the study. As shown, the expert model includes a series of connected decision points that successively lead the student to an endpoint, where the model suggests a course of action based on the decisions made.

For the present study, the author aligned the scope of the EDM with instructional objectives for this session, which broadly include the IL competencies of topic development, search strategy, and source evaluation. The three main branches in the model represent each of these areas. The higher-level granularity of the decisions that the model presents to students reflects the more advanced level of the students (typically juniors and seniors) and the short allotted instructional time.

FIGURE 1
Top Level View of EDM; (inset) Detail of Decision Paths



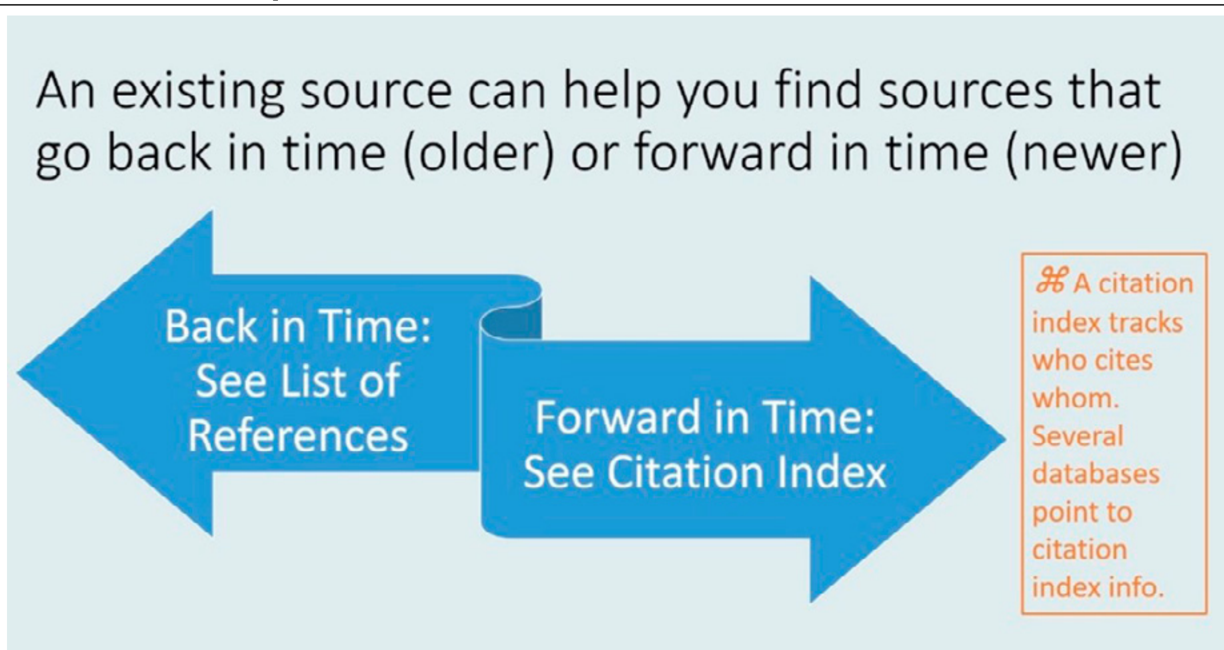
The second part of the DBL instructional module, the problem bank, provides practice problems that exercise the students' decision-making abilities within the framework of the model. This helps students build their own schemas, which will inform future decision-making. The problem bank scenarios expose different paths in the EDM; in the present case, students practiced two paths in pre-class work, including:

1. A researcher looking for new sources in the engineering realm using a subject search. The researcher finds a conference paper that is relevant, current, and has credible authors.
2. A researcher looking for new sources in the engineering realm using a keyword search. The researcher finds a peer-reviewed journal article that is relevant, current, and has credible authors.

The instructor selected these scenarios to provide exposure to two different types of searches and two different types of sources. Note that the paths also contain similarities in order to provide some repetition while still offering some breadth, which is important in schema forming.[31] Both scenarios were carefully chosen to provide clear-cut answers at each decision point. On the other hand, the in-class scenario was a "live" example from a student in attendance who offered a topic for discussion, giving students experience with a less controlled, "real-world" application.

To assist the learner in making correct decisions through the scenarios in the problem bank, topical training modules were available at each key decision point. A key method used in connection with these modules is "just in time, just enough" training,[32] where subject matter related to this decision making is segmented into small, digestible pieces and presented to the student at the time of need. The method chosen for presenting this information in this study is a simple slideshow with one to four pages of content. An example page from an instructional module can be seen in figure 2.

FIGURE 2
Top Level View of EDM; (inset) Detail of Decision Paths



Assessment of Treatments

To assess specific outcomes of this particular IL training, the author employed a pre-/post-testing strategy using course-specific test questions. In order to minimize potential barriers to engagement in the study, pre- and post-tests focused on a few essential competencies (see last column of table 1). Each test required approximately five minutes to complete.

The test design process took care to ensure equivalence between pre- and post-tests in order to establish a valid basis for comparison. In this process, two options for testing were considered:

1. use of the same questions for both tests; and
2. use of different but similar questions (sets "A" and "B") and applying the "A" set of questions for one of the tests, and similarly applying the "B" test for the other.

Each of these methods offers positives and negatives. Option 1 ensures equivalence of the questions but may introduce test bias due to test question familiarity.[33] This type of bias is indeed a concern in this study, since it is presently impractical under current scheduling constraints to ensure a substantial time buffer between pre- and post-test. Using this option would call into question the internal validity of the testing. On the other hand, option 2 minimizes the effects of test bias but does not ensure equivalence of questions, constituting an "instrumentation" threat to validity of the testing.[34]

While both of these threats may obscure measurement of true change in *individual* students' abilities, they do not prevent comparison of two treatment *groups*, if such groups are equivalent at the outset. Further, option 2 does allow a measurement approaching true change in ability of the overall group, if the test questions used for pre- and post-tests are swapped for various subgroups of students. This helps to separate changes in measured student performance due to differences in test question difficulty from those due to the treatment, and leaves a reasonable (averaged) measure for overall improvement in performance. Because of these affordances, the author selected option 2.

Testing

Preliminary Module Testing

The author provided new course materials, including the EDM, problem scenarios, and supporting topical modules, to faculty peers and student library employees for initial testing. Two student assistants provided helpful feedback during early rapid prototyping of the model and scenarios, shedding light on the time burden and the clarity of the materials. This feedback helped improve clarity and relatability of the content. Then, two instructional librarians and two trusted and experienced teaching colleagues provided further critique of the complete prototype of the module.

Pilot Study

Following initial module testing and refinement, the author conducted a pilot study in a live classroom setting, including eleven fifty-minute instructional sessions comprising seventy students in total. Following the pilot study, the qualitative feedback received from students and colleagues and quantitative feedback from quizzes helped inform adjustments to course content and delivery for the main study.

Formal Testing

Formal testing extended over the course of one full year and an additional semester, encompassing winter semester, spring and summer terms, and the fall semester of 2019, and concluding with winter semester ending in April 2020. During this phase of the project, the author taught fifty-nine instructional sessions. Twenty-nine sessions (49%) received the DBL training and thirty (51%) received standard lecture treatment.

Midway through the study, the author evaluated pre- and post-tests for their effectiveness: questions that were less discriminative of student behavior (e.g., those with high scores from both pre- and post-) were replaced, and an effort was made to rebalance the difficulty of tests A and B (hereafter distinguished as tests C and D).

Results

Pre- and post-tests each comprised five multiple choice and true/false questions. Some questions had multiple parts; others had multiple correct answers. In these cases, each part was treated as a separate response for scoring. All responses received equal value, and no weighting factors were applied to distinguish questions based on difficulty. An analyst at the library conducted t-tests and analysis of variance on the collected data, using a general linear model (GLM) procedure in the SAS® statistical package.

Influence of Instruction on Overall Student Performance

Using a paired samples t-test comparing pre-test and post-test scores, the research team found a mean increase in student test performance amounting to 9.6 percentage points for the whole group following instructional treatments (see table 2). A p-value less than 0.001 indicates that this increase is statistically significant (for the purposes of this study, a p-value <0.05 is considered statistically significant), as would be hoped in an instructional setting. Likewise, the magnitude of change (approaching 10%) indicates a practical difference as well. Here, a "practical" difference is defined as a difference in test performance that is not only statistically significant, but that is large enough to be meaningful in terms of desired student outcomes for the course. Into this desired outcome must also be factored a recognition that development of a new teaching method does require additional effort for the instructor; therefore, an instructor must determine whether the magnitude of the gains in student performance justifies the additional time spent preparing and teaching the new models. In an educational environment, a difference in performance becomes more practical to a student as it helps improve the student's letter grade. While a letter grade was not provided in this particular study, this serves as a good guideline for determining practicality in this setting. Thus, an improvement of ten percentage points can be considered practical, as it generally moves the student to a higher letter grade.

Therefore, we can conclude that students' understanding of those IL principles captured in the tests improves after this instruction. This is not a surprising finding in light of the goals of the instruction and the fact that the pre- post-test instrument is designed to reflect on those specific goals.

TABLE 2
Change in Mean Test Scores, Pre- vs. Post-

Test Group	Pre-test Mean Score	Post-test Mean Score	Difference	p
DBL	0.6664	0.7760	0.1096	<.0001
Lecture	0.6518	0.7342	0.0824	<.0001
All	0.659	0.755	0.096	<.001

Equivalence of Test Groups

Mean test scores for students taking the pretest were analyzed using an independent samples t-test comparing the populations selected to receive the DBL and the lecture treatments. As shown in table 3, there was a mean difference in the pre-test scores of 1.5 percent in favor of the DBL group; however, this difference is not statistically significant (two-tailed p = 0.467). This supports the premise that we can consider post-test results as the defining difference for the groups undergoing the different treatments.

Influence of Teaching Method on Student Performance

An independent samples t-test of post-test scores shows that the DBL group performed better than the lecture group on the post-tests, with a mean difference of 4.2 percent (table 3). The two-tailed p-value of 0.038 indicates that this is a statistically significant difference, and the magnitude of the difference suggests a borderline practical difference as well.

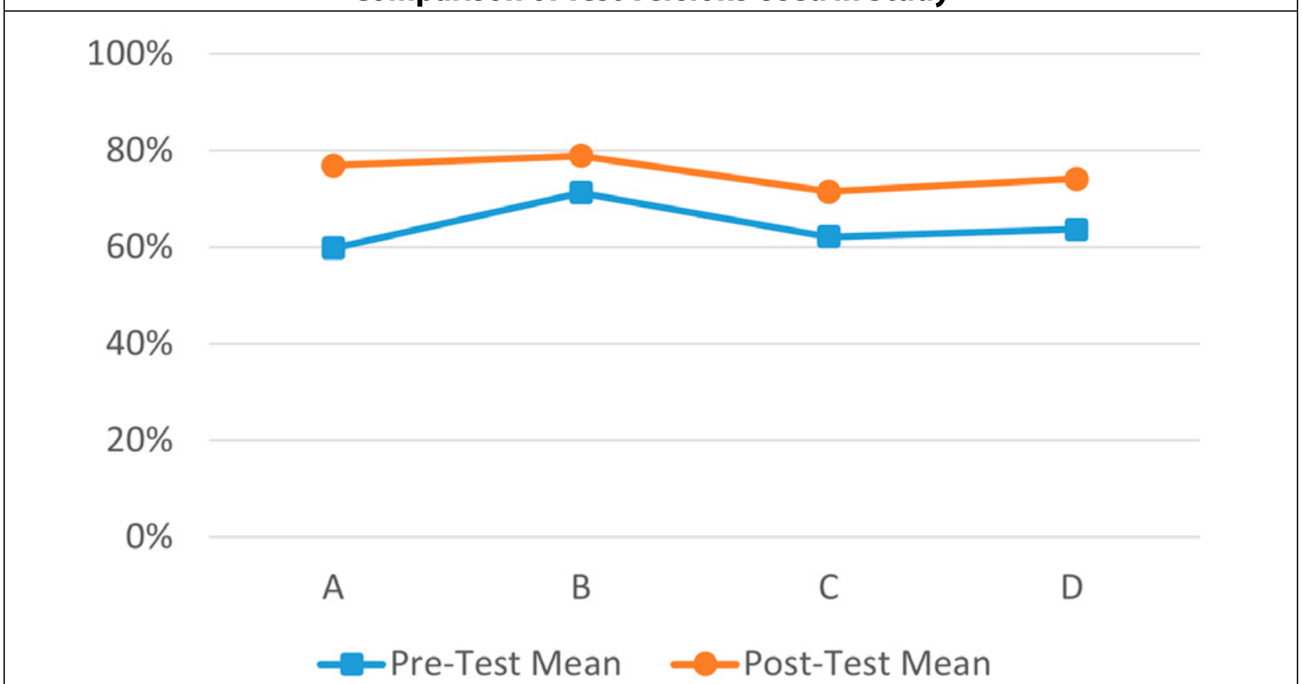
TABLE 3
Difference between Mean Test Scores of Study Groups

Test Means	DBL	Lecture	Difference	p
Pre-test	0.6664	0.6518	0.0146	0.467
Post-test, unadjusted	0.7760	0.7342	0.0418	.0377
Post-test, adjusted for test version	0.7886	0.7191	0.0695	.0028

Other Variables/Covariates

Comparing the means for the four versions of tests shows that students scored significantly higher when taking test "B" as compared to other test versions—especially when taken as a pre-test (figure 3). This observation for tests A and B prompted the aforementioned rebalancing

FIGURE 3
Comparison of Test Versions Used in Study



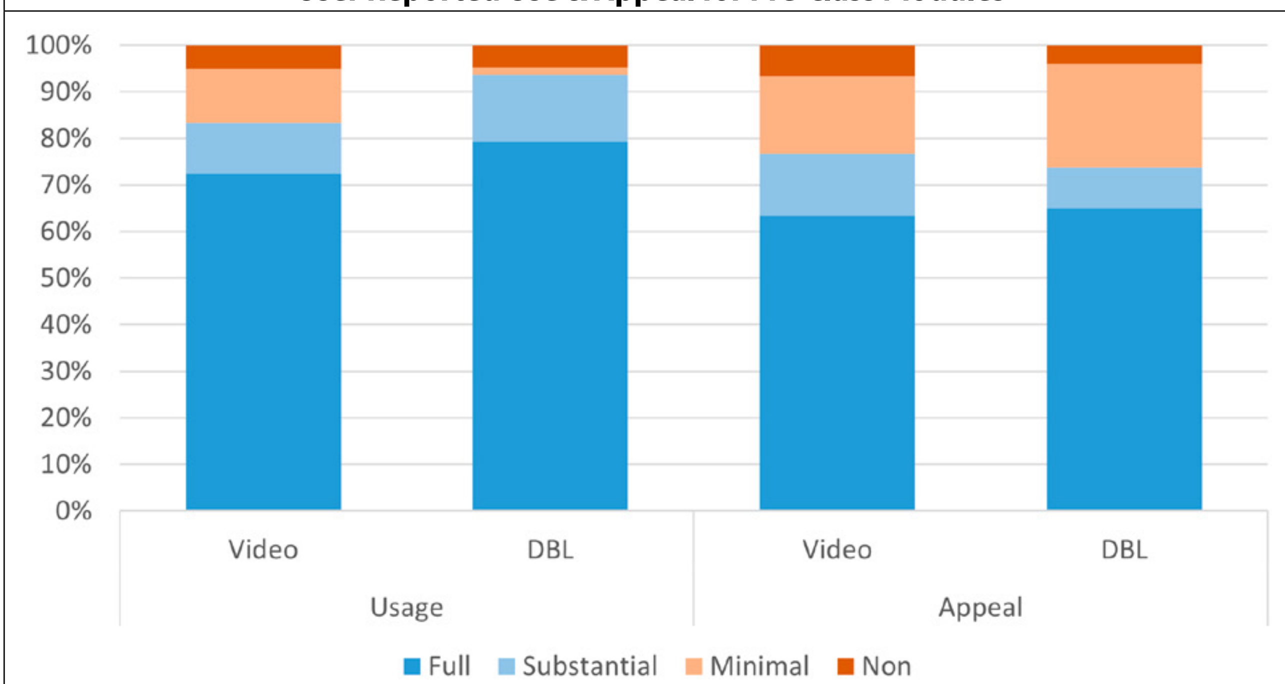
of tests and led to the use of tests C and D thereafter. This also compels an analysis of variance, controlling for post-test version with their associated variations in sample size, in order to understand the effect of the different tests on the results of the study. Referring back to table 3, when accounting for these variations the difference between the means and the associated significance increases in favor of the DBL method. This indicates an even stronger practical difference between teaching methods when controlling for the test version.

Engagement in Pre-class Work

Students were asked to self-report their use of the assigned pre-class modules on a scale of 1-4, with 1 representing the phrase "I did not use the tutorial" and 4 representing the phrase "I completed all sections of the tutorial." Responses of 2 or 3 represented gradations of use between these two extremes. Participants were also asked to rate how appealing the tutorials were on a scale of 1-4, with 1 representing the phrase "I did not use the tutorial" and 4 representing the phrase "I found the tutorial both interesting and applicable to my needs." Figure 4 shows these student responses.

As shown, self-reported usage of the DBL module at either a "full" (4 on the scale) or "substantial" (3 on the scale) level approaches 94 percent of the respondents (118 of the 126 in that group), approximately ten percentage points greater than the video module usage (100 of 120 respondents).[35] The percentage of students judging the appeal of the respective modules to be both interesting and applicable (4 on the scale) are comparable (82 of 126, or 65%, in the DBL group vs. 76 of 120, or 63% in the video/lecture group); when combining those judging the appeal of the modules to be 3 or 4 on the scale, student perceptions slightly favor the videos over the DBL modules (92 of 120, or 77% of the video/lecture group, vs. 93 of 126, or 74% of the DBL group). This suggests some room for improvement, perhaps in the level of polish of delivery and focus of the DBL module.

FIGURE 4
User Reported Use & Appeal for Pre-class Modules



It should be noted that, in these and the post-semester questions, students may have been motivated to inflate the score of either their level of participation in, or the appeal of, the tutorials in order to please the instructor. Reducing this potential effect are the instructor's lack of grading authority in the class, the one-shot nature of the class (that tends to substantially reduce the depth of the teacher-student relationship), and the fact that the origin of the tutorials was not identified (indeed, some elements of their tutorials were created previously by an instructional design team; others were created by the instructor). More significantly, if students felt any level of influence to alter their assessments, both DBL and control groups would have been equally motivated to do so. Thus, the *differences* between the experiences of each of the study groups, which is the primary quantity of interest, should still reflect a valid comparison.

Other Findings

Factors Influencing Lack of Participation

Ninety-two students (35% of total students providing consent), including forty-seven from the DBL group (37% participation rate) and forty-five from the lecture group (34% participation rate), responded to post-semester survey questions relating to their overall perceptions of the various learning resources offered, including the pre-class assignment, the in-class instruction, and after-class discussions with librarians. Eight respondents (9% of respondents) indicated that they did not make use of the pre-class assignment; all but two indicated that time was a key factor in their lack of participation. The other two stated forgetting and lack of understanding the assignment as their primary reasons. The last response was from a student assigned the DBL module, indicating a possible need for better explanation of the DBL method.

Use of Resources after Class

Post-semester surveys asked whether students used the online learning resources (DBL or videos, as appropriate) after the in-class session had concluded. Sixty-two of the respondents (67%) indicated they did not use the resources after class, most citing either that time was a constraint, or that they had no need for visiting the material further. Several stated in various ways that they had learned what they needed from their initial encounter with the material.

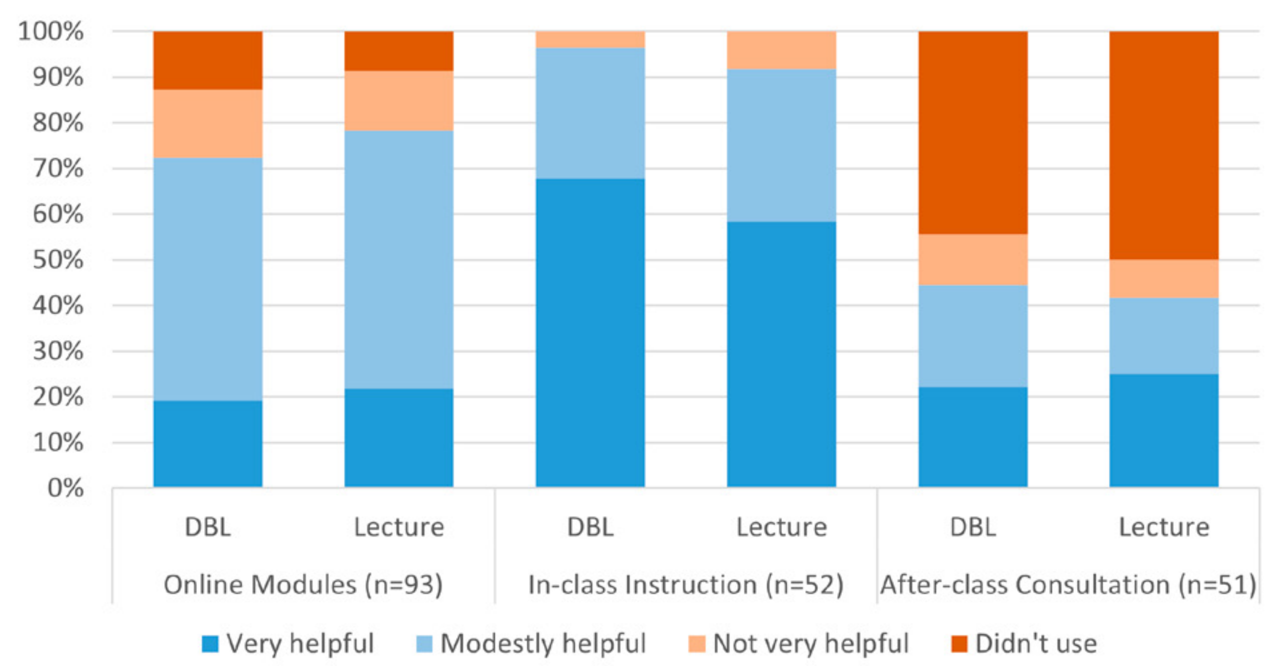
The remainder of the respondents had some further interaction with the learning resources they were given. Most indicated minimal use, perhaps to refresh their memory on how to find sources, although a few (six, comprising 7% of respondents) classified their use of the material as "substantial." Of those six respondents, five were from the lecture group who were given the short videos as their learning resource, suggesting that the short format (one-minute videos) may be more useful to students for reference purposes than refreshing one's memory using the current DBL module.

Perceptions of Helpfulness

When asked to rate the helpfulness of the pre-class assignments vs. in-class work and after-class consultations, responding students from both study groups ranked the in-class session most helpful, as viewed from the end of the semester. More than 90 percent of students indicated the class was very helpful or modestly helpful (figure 5). Interestingly, those given the DBL pre-class assignment tended to find the in-class work very helpful somewhat more often (96% of respondents, or 27/28 responses) than those given the video pre-class assignment did

(92% of respondents, or 22/24 responses).[36] On the other hand, those given the video pre-class assignment tended to rank the assignments themselves as modestly helpful or very helpful slightly more often (79% of respondents, or 36/46 responses) than those given the DBL assignment did (72% of respondents, or 34/47 responses).

FIGURE 5
Student Perceptions of Helpfulness for Different Learning Resources



Discussion

Based on the post-test scores given above, the group of students receiving the DBL treatment exhibits a statistically significant improvement in post-test performance over those receiving the lecture treatment. This improvement represents a practical difference, which is important when considering that there is a cost to development and delivery of out-of-class study materials such as those employed in this study. Indeed, employing the DBL method comes with its own learning curve, as do other innovations in instructional technique, including a flipped classroom approach.

Supportive of this performance difference is evidence of greater student usage of the DBL pre-class assignment, as opposed to the usage of the videos associated with the lecture method (figure 4). As mentioned previously, student engagement in out-of-class work is an important factor affecting the efficacy of flipped classroom teaching. It is interesting to note the differences in time commitment for these two alternatives: the DBL module, which was billed as a twenty-minute activity, received greater attention than the short videos, which were billed as a five-minute activity. Possibly, mention in the introductory email of the short length of the videos may have biased perceptions of the students regarding the potential benefit of viewing them; or, perhaps the commonplace nature of the video format is less motivating to students. Alternatively, perhaps the active learning aspect of the DBL module, which includes student decision-making inside scenarios encountered in a student's life, holds a student's interest better than the more passive watching of videos. Whatever the reasons, this higher engagement is significant in the context of a flipped classroom, and more specifically, information literacy instruction. Often in IL instruction, intrinsic forms of student motivation are beneficial, if not essential, to maximizing the benefit of out-of-class work. Specifically in this study, no grades were attached to completion of out-of-class work associated with the instruction, increasing reliance on intrinsic motivation.

Interestingly, student perception of how interesting and useful the various assignments were, including use for reference after the session, favors the standard videos (figure 4, figure 5). While this helpfully points to a number of possible factors for consideration in the improvement of instructional materials—including length, ease of access, and degree of polish—it also indicates somewhat of a disconnect between the actual effectiveness of instructional materials and student preference, at least in this case.

One interesting finding relating to the perception of students about the usefulness of in-class instruction is that the students assigned the DBL module as a pre-class assignment were more likely than the control group to find the in-class instruction "very helpful." This could mean that the depth of learning with the DBL pre-class assignment helped students to be better prepared to learn in class, as is the hope with a flipped classroom. Anecdotally, the author observed that the pre-class assignments for all groups (including pre-test and modules/videos) were successful in that they did prompt student questions at the beginning of class, increasing student engagement in the session. The DBL method used in this study certainly placed more depth of knowledge in front of the student prior to the in-class portion of instruction, which opened the door for deeper and more individually paced learning. Though how much and how deeply students used supplementary "just-in-time, just enough" information was not measured, the reported high level of engagement in the module (figure 4) confirms that a high percentage of students did do enough learning to successfully complete the module. This could have helped students better prepare for in-class instruction and perform better on the post-test. Further work is needed to understand this possible connection.

While each instructional method had a pre-class aspect and an in-class aspect, there were key dissimilarities in their approaches. For example, the instructional videos do not explicitly present their material in context with a working problem, which may explain some of the differences in student performance. The DBL module contained this context and also required students to make decisions based on the conditions surrounding the information need. In so doing, it required active engagement of the student in order to progress through the module. The video assignment intrinsically assured no such engagement.

Certainly, an advantage of the DBL method, or any other new method, is its novelty; thus, the new learning approach could have encouraged the greater engagement shown in figure 4. However, simple curiosity seems less likely to drive nearly 80 percent of the students to full completion of the more lengthy DBL assignment, as opposed to just over 70 percent of students completing very short video instruction, unless deeper motivational factors are at play.

In closing, one must note that the each of the tested teaching methods is a composite of techniques. In the case of DBL, some techniques are intrinsic/unique to the method, while others are simply good instructional practices that are not necessarily unique to DBL (e.g., "just in time" content). To tease out the particular contribution of each of these aspects requires more work. That said, the study clearly shows benefit to using the set of techniques associated with the DBL method. Aside from the student-centric performance gains mentioned above, other potential benefits may be attached to the DBL method. For example, the instructor may benefit from the process of creating an expert decision model. Creating the model is a form of mind mapping or documentation that, in this researcher's personal experience, yields clarification and organization of the domain expertise of the instructor.

Validity

Measures taken to minimize threats to validity due to pre- and post-test questions have already been discussed. Other threats to the validity of the study are addressed in part by the nature of the instructional sessions. Each instructional session is comprised of several different "home" sections of advanced writing. Thus, students from a particular section of advanced writing are typically spread across several sections and instructors, and those in a given library session are typically unaware of who will be in attendance in their session. Because they are not taught in a single cohort, they have little opportunity to collaborate. Furthermore, those that do connect with others in different sessions are more likely to compare notes about specific projects that they were researching rather than methods used to teach search skills. Indeed, as important as learning information literacy principles and methods is, the central focus of the library session is to help students with a research project. There is little if any motivation for students to share test questions, or to share or compete on the acquisition of the technical information, since their advanced writing class grades come from individual projects. These factors reduce the likelihood of cross-contamination and competition among groups. As to instructor effects, it might be argued that a potential source of bias that could strengthen the observed difference in student performance may be the instructor's vested interest in the success of course materials that cost time to develop. The author was aware of this possible bias in instruction from the outset of the study and took steps to promote unbiased delivery of content. As discussed above, care was taken in the instructional design process to ensure similarity of content such that neither group was disadvantaged (see table 1). During delivery of the content every effort was made to provide every student with the best possible resource to help students achieve learning objectives, regardless of the teaching method assigned to the session. This deliberate approach minimized the likelihood of unconscious bias. Notwithstanding these measures, the author recognizes that other possible measures could be taken in future studies to put more distance between those instructing and those carrying out the study, or perhaps by employing an observer in the instructional sessions to note possible instructor bias. In this study, it was not practical to disassociate the development of the instructional content completely from its delivery, since the content reflects the unique offering of the instructor. Other practical issues, including cost and staffing, favored the author's assumption of multiple roles and remains a limitation of the study.

During the conduct of the study other sources of potential instructor bias were reduced or eliminated. Specifically, tests were designed with multiple choice and true/false answers to avoid the need for judgment-based test scoring. Also, the data analysis task was outsourced to an impartial third party—the institution's library assessment team.

Limitations and Future Work

Beyond the limitations of the study just highlighted, another limitation is that the study's scope was limited to students within the instructional reach of the author (engineering and technology students at the author's institution). The organization of the DBL methodology, including its process-based thinking, may be better aligned with the learning styles of students in these disciplines, as opposed to those in other disciplines. Further work with advanced writing students in other disciplines is needed to understand this possibility.

Furthermore, the study does not take a longitudinal view of learning, namely retention. Towards the end of the current study, the author launched a pilot study to assess this aspect, and results suggested this might be an area for fruitful effort in the future.

Finally, as has already been noted, the author chose a rather high-level EDM for this testing. One strength of this type of model is that it exposes the student to the bigger-picture process; thus, it models and contextualizes decision making within the overall process. However, a limitation of this decision is that model paths became lengthy, thereby making it more difficult to provide much repetition of decision paths in student exercises, particularly when factoring in participation cost for students. Likewise, the opportunity to provide a broad range of problems that would help the student transfer knowledge to different scenarios is limited. This makes the process of expert schema-building less ideal.[37] The author is presently restructuring a DBL model to shorten decision paths, providing for further breadth and repetitions of decision-making.

Acknowledgement

The author expresses deep appreciation to Dr. Kenneth Plummer from the University's Center for Teaching and Learning, who provided training relating to the DBL method and substantial insight to guide content development. Other key contributors include Alysia Larsen, a student assistant who provided much feedback and testing support during the development stages of the DBL module, and Mr. Brian Roberts and Dr. Holt Zaugg, both from the Library Assessment Office, who offered critique and input to the data collection methods used, and assisted with the analysis.

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35. The reader will note that the number of students in each treatment group that provided feedback on their engagement with the pre-class materials (246) is greater than the number that completed both pre- and post-tests (225). This difference largely represents those who did not complete a pre-test, but who attended the class and offered feedback.

36. The question relating to the student’s perception of the lecture was not originally included in the post-semester questions but was added midway through the study during the rebalancing of tests mentioned above. Therefore, student feedback in this area is more sparse.

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Improving Contract Negotiations for Library Collections through Open Records Requests

John Eye

Open records requests can be an important tool in obtaining valuable information to use in negotiations with content providers. This paper examines the opportunities libraries have in requesting public information through open records requests to better support their purchasing decisions. The case is made for investing time up front to better understand contract terms and pricing already secured by public entities, using that knowledge to improve their position in the negotiating process.

Introduction

For a long time, publicly funded libraries have been negotiating contracts with publishers and aggregators, trying to acquire the best possible deals. But with the proliferation of electronic resources over the last few decades, these agreements are more important in maximizing how far collection budgets can stretch. They outline the terms for each party, including price, access, and other various expectations including beginning and ending service dates. Maximizing the outcome of these provisions is crucial in providing access to information within the financial realities of today; likewise, ignoring the significance of the negotiation process leaves open the likelihood that the terms of these deals will not be as favorable as they could be. Taking a proactive, assertive approach to contract negotiations will likely improve the chances that library spending will yield the highest possible value to users.

It is well established and goes without saying that libraries should take measures to increase the benefit negotiated contract terms will bring. But very little has been written specifically about how open records requests can be used to improve the leverage state-funded libraries have in the negotiating process, especially when so many agreements include confidentiality clauses, limiting the public disclosure of terms. This paper will explore the process of how libraries can use open records requests to shine a light on other libraries' contract agreements and use that information to better determine how to proceed through negotiations more strategically.

Literature Review

Transparency and Open Records

The Freedom of Information Act (FOIA) of 1966 was the continuation of previous federal efforts to improve government transparency and a transformation of how information was made available to the public.[1] Under FOIA, individual citizens can request and receive public records

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regardless of use, based on the nature of the record.[2] Exceptions were built into the law and subsequent revisions have added further restrictions,[3] but essentially the statute authorizes extensive access to the public for information gathering and discovery of federal public records. At the state level, influenced significantly by FOIA after its enactment,[4] laws have emerged that mandate similar disclosures to hold state agencies accountable and reinforce public confidence in the judgments and decisions of state employees.[5] Under these statutes public records requests can be submitted to receive copies of vendor contracts to better understand what other libraries are paying for access to specific resources.

The use of open records to gather information on library contracts for negotiating purposes is nearly absent from the literature,[6] but there are accounts of using open records to better understand pricing.[7] Taylor and McMenemy have used open records to collect data on censorship issues in libraries,[8] and Oltmann et al. studied how record requests from two states yielded varied results due to differing state laws.[9] Moore and Duggan addressed the lack of transparency between librarians and content providers and how it can "undermine the relationships both entities have been cultivating throughout the years."[10] They also note that "it is not unheard of for a publisher to use the Freedom of Information Act to obtain information about their customers, including to whom their money is going and how much, in an effort to gain an information advantage within the marketplace."[11] Dygert and Barrett write that "it would be helpful to know what kinds of deals other institutions or consortia are getting from the publisher. However, getting specific information may be difficult due to confidentiality clauses in license agreements. Some information can nevertheless be gleaned from sources such as public records requests for public institutions and literature reviews."[12]

Professional organizations representing library interests have also weighed in on the importance of accessing contractual information. In 2021, The Association of Research Libraries (ARL) issued a press release calling for greater transparency among libraries. In part the statement reads, "transparency and sharing of prices and contract terms must be a core operating principle in order to realize our objectives."[13] It reaffirms a previous position established in 2009 that encouraged libraries to resist signing nondisclosure agreements with publishers that keep pricing details from being available to other libraries.[14] The primary objective is to improve transparency so library negotiators can make better decisions about pricing and other contract terms and, in doing so, will likely advance the institution's efforts toward accountability for how public funding is spent.[15]

Publishers, on the other hand, often see it differently. They argue that the disclosure of pricing can be detrimental to the customer's ability to receive customized offers or can interfere with their ability to negotiate effectively with other publishers. Some publisher representatives have claimed that small, poorly funded libraries could lose out if a deeply discounted agreement was publicly disclosed, that is, publishers would be more wary of making individual concessions in these circumstances for fear that other libraries would demand equivalent pricing. As shown in appendix A, publishers may argue simply that a release of pricing information would create competitive harm and negatively affect their business interests.

In addition to the ARL, the Scholarly Publishing and Academic Resources Coalition (SPARC) is another organization advocating for libraries to share information that helps in their negotiations with publishers. Not limited to pricing, SPARC offers resources that include data, statistics, and instructions to help libraries make better decisions and develop more sustainable ways to provide access to content.[16] Libraries are encouraged to participate in this effort by sharing the prices and terms of their contracts.

The Art of Negotiating

Negotiation is part of everyone's life.[17] For librarians, however, it is "one of the most important skills" they can have.[18] But effective negotiations usually do not emerge without careful planning and intentional execution. Sound negotiating principles can be learned and folded into one's professional toolbox to build a skillset poised to advance the goals and interests of their library. Although most library schools do not include training in negotiations as part of their degree programs,[19] "there is no shortage" of resources on the fundamentals of how to effectively bargain with a content provider.[20] Many professional organizations provide workshops on how to negotiate effectively for library products. This is especially important since "vendors spend huge amounts on training and educating their sales staffs on negotiating skills."[21]

There is much written on the best techniques and strategies to negotiate effectively.[22] For libraries, it is often a matter of working toward a deal that best represents the needs of its users while staying within a limited budget. The goal is usually to find agreement between the two parties where the price and terms are acceptable.[23] Bazerman and Neale, however, make the point that sometimes *not* making an agreement is the best course of action.[24] Negotiators should not be hesitant to walk away when the terms do not satisfy their needs.[25] If library authorities do not invest adequate time and effort into careful consideration of all the options available, they may be paying too much or missing out on a better option, effectively squandering financial resources.

Method

The purpose of this analysis is to call attention to the prospect of using open records to improve negotiations with content providers. By connecting the process of open records requests to the collection development efforts of libraries, a framework can be developed to gather public information and use it to advance the purchasing power of the library. The focus of this paper is to take the reader through the process of an open records request and examine potential benefits and pitfalls. Examples will provide context for further development of this model.

The first step in preparing to negotiate is to determine the problem to be solved.[26] If the problem cannot be clearly defined, then the outcome will largely be left to chance. Library negotiators should have a clear understanding of what a satisfactory deal looks like and how it can be articulated. Is the goal to renew an existing subscription database at a lower price? Is more content needed? Is there an opportunity to cut costs by investing in a less expensive product? It will be necessary to look at the requirements of the library to establish what are "must haves." Of course, vendors will likely recommend many options, but it should be library representatives who ultimately decide how best to serve its users. Determining the needs of the library is a key part of establishing a favorable position to begin negotiations.

In addition to defining the problem, there are other considerations before negotiations begin. What other competing products are available? How important is the product to existing collection development goals? Are there similar libraries that find the product valuable? Is the timing right to purchase the product? Is the vendor motivated to strike a reasonable deal? These are just some of the questions libraries need to contemplate when entering negotiations. The answers will help shape how the best arguments can be applied to support the strongest position.

Requesting Open Records to Improve Negotiations

Some of the most valuable pieces of information are the contract details from state-funded libraries that have already entered into agreements for products under consideration. But there are often limitations on what can be shared about these arrangements because of terms that prohibit or limit disclosure. More and more, libraries are negotiating these confidentiality clauses *out* of their agreements and making the terms available online.[27] But it is also possible to acquire copies of contracts from many public institutions through open records requests, despite confidentiality clauses. All states have sunshine laws that compel government institutions to disclose certain public documents on request.[28] Contracts that publicly funded libraries have with vendors are often public documents and can frequently be obtained through an open record request, usually submitted to the institution's legal affairs office. Taking the time to ask for this information can help increase leverage and justify arguments for more favorable prices and terms.

The rules for making an open records request vary by state and local guidelines.[29] Policies are normally in place to provide a process that complies with state law, fitting the structure and nature of the institution. It is usually necessary to provide contact information and a specific description of the information or record when submitting a request. Some jurisdictions may require a reason for the request, and most agencies have websites directing the user to the person responsible for handling the inquiry. If not, the chief administrator and the institution's legal authority are likely prospects for getting the request to the right person. Appendix B shows an example request form including the information needed to fulfill the request.[30] Other institutions are less specific, directing the patron to submit a signed request either in person or via electronic mail. Of particular importance, however, is that some states have mandates requiring requests to receive responses within a defined period, often 5 to 10 days. A response, however, does not necessarily mean a release of documents. Sometimes an institution will notify the requester that more time is needed to collect the information desired, and the law usually allows a reasonable amount of time for the full disclosure of the requested documents.

When public information is requested through an open records request, the government entity can comply completely, provide a redacted response including some or all the related documents, deny the request, or ignore it.[31] A decision to provide redacted documents, deny, or ignore the request can be appealed as prescribed in the law. If the open records request involves outside entities, some states, like Texas, invite the submission of arguments to challenge the release of the records (see appendix C), especially if they relate to documents that may include proprietary information. If there is no response, or at least no compelling legal objection, the government entity generally moves forward with the decision, possibly releasing the information. If a challenge is submitted, the government entity weighs the arguments within the context of the law and decides. Sometimes these findings occur at the state attorney general's level of authority. Appendixes A, C, and D show supporting documents for an open records request involving Proquest and Ebsco pricing from the University of Texas System. The correspondence reveals the University working with the office of the attorney general of Texas to solicit responses from Proquest and Ebsco associated with the request. Appendix E indicates a ruling from the attorney general giving the University guidance on how to proceed.

Difficulties in Obtaining Open Records

An example of a dispute over access to contracts for library materials involved a professor doing research on publisher pricing. Dr. Theodore Bergstrom, an economist from the University of California, Santa Barbara, led a study using state open records laws to access copies of contracts containing rates for bundled subscriptions of scholarly publications.[32] The supporting court documents show the resistance publishers employed to avoid disclosing prices negotiated with their customers at public universities.[33] The publishers claimed their pricing mechanisms and structures should be considered trade secrets and therefore confidential. In a letter from the legal representative of Elsevier B. V. (Elsevier) to Dr. Bergstrom involving a request for records from Washington State University in 2009, the reasons for nondisclosure are spelled out:

> Elsevier does not object to disclosure to you of the whole of the Washington State contract documents. Elsevier is concerned rather with the potential disclosure to competitors of the specific negotiated pricing terms in the contract, which is confidential commercial information entitled to legal protection. We hope you appreciate that the disclosure of such specific customer pricing terms is sensitive and subject to potentially harmful use by competitors seeking an unfair advantage in negotiations with a customer. In addition, disclosure of pricing terms can in fact inhibit the parties' ability to develop flexible, tailored solutions suitable for a particular customer's needs and may be detrimental to the customer's negotiations with other publishers.[34]

In this case, Elsevier was not successful in forcing Washington State University to redact pricing information from public records. But in a records request by the author for prices of online databases purchased by a Utah state entity, the invoice was received but everything was redacted except for contact information and column headings (see appendix F). Directions were provided for an appeal.

Receiving public records hinges on whether the request falls within state law and institutional policy. Each state has its own version of statutory framework;[35] some are more transparent than others. For example, Alabama, Arkansas, Delaware, Missouri, New Hampshire, New Jersey, Tennessee, and Virginia have laws that limit public records access to residents only.[36] This restriction was challenged in Virginia and upheld by the United States Supreme Court in McBurney vs. Young.[37] The Court reasoned, in part, that non-residents were not substantially burdened by this provision, since much of the information is online. But perhaps more significantly, the Court established that access to public information is not a constitutional right.[38] Therefore, it seems likely that states may continue to develop more protective statutory and administrative structures that make access to public records challenging.

Some institutions purchase materials using funding sources outside state allocations such as gifts, endowments, or private grants. Depending on state laws and policies, these expenditures may fall beyond the scope of the state open records statutes. For example, a request by the author for an invoice from a Delaware public institution was refused because the resource was not purchased with public funds.[39]

Another barrier to tracking down pricing through open records requests is that sometimes it is difficult to identify the actual fiscal agent of a resource. If a library lists a database or journal package on its website, it may be provided through a consortia agreement or another entity in the system; tracking down where the actual invoice resides can be challenging. In those cases, however, administrative staff are often helpful in identifying the appropriate source.

Fees charged to locate and process open records can also serve as a deterrent for people to access public information. Most state laws include provisions to allow government entities to financially recover at least part of the time, effort, and materials needed to respond to a request. But often the charges only kick in when the request goes beyond a few basic documents. There have been occasions, however, where government entities have used fees in ways that appear to discourage access.[40]

Discussion

The Value of Open Records to Improve Negotiations

It should not be a surprise that collecting information about all aspects of a transaction will improve the chances of a successful negotiation. Finding information to solve problems is solidly in the wheelhouse of most librarians. Collecting, synthesizing, analyzing, and understanding this information is important to building confidence and establishing leverage to support contractual objectives. Carter writes that "Expert negotiators know that their greatest source of strength in negotiation is not bluster but *knowledge*."[41] Learning as much as possible about the things that influence a deal will help clarify what aspects of the negotiation can be emphasized and which should be avoided. In other words, information that shines a light on the factors involved in a negotiation can create additional leverage to strengthen the bargaining position. The better the bargaining position the more likely a satisfactory outcome will be reached.

The author has used open records requests for several years to concentrate on larger, six figure agreements where the savings add up dramatically, especially for multiyear deals. The process is normally very simple, and with the proliferation of confidentiality clauses the information is not easily obtained any other way.[42] By making several open records requests to similar institutions, it has been possible to use that information to push back on vendors for better pricing and terms. One example is where a vendor was holding firm on a significant price increase for a product that would have been difficult to do without. Using the pricing obtained through open records requests, and being completely honest about how the information was obtained, a case was made to make the cost more comparable to other libraries similar in size and scope. After more deliberation, the license was adjusted several thousand dollars lower on a multiyear contract.

Conclusion and Recommendations

By recognizing the value and practical application of acquiring public records from other libraries to inform procurement decisions, public institutions can be a source of information that help establish stronger negotiating positions with publishers and other content providers. By knowing more about the agreements other libraries have made, better decisions can be developed to support strategies that are more cost effective and financially sustainable. As key players in teaching users how to find relevant information, library personnel should take a page from their own playbook and reach out to their counterparts, either by virtue of contracts without confidentiality clauses or through open records requests, and secure contract information that will benefit their own collection development efforts.

Appendix A

ProQuest.

Via U.S. Mail and Fedex

March 5, 2018

Office of the Attorney General
Open Records Division
P.O. Box 12548
Austin, TX 78711-2548

Re: ProQuest LLC Notice of Opposition Against Permitting Release of Proprietary Information Pursuant to John Eye – The University of Southern Mississippi's Open Records Request to The University of Texas at San Antonio ("the University") for ProQuest's Unredacted Ebook Contracts, Including Any Schedules, Addenda, or Appendixes, received by the University on February 9, 2018 ("Public Information Request from John Eye to the University of Texas at San Antonio -- OGC# 180485" UTSA File No.: W003303-020918).

To Whom It May Concern:

ProQuest LLC received notice of the above referenced Open Records Request from Aaron Faris, Senior Legal Coordinator at The University of Texas at San Antonio, in a letter dated February 23, 2018, received by ProQuest LLC on March 1, 2018. This letter shall serve as notice that ProQuest LLC is opposed to release of any contracts, information and/or proposals provided by ProQuest LLC, pursuant to the above referenced Open Records Request.

As you are aware, the Texas Supreme Court concluded third parties may assert that their information is exempt from disclosure pursuant to Texas Government Code Section 552.104. *See Boeing Co. v. Paxton*, No.12-1007, 2015 WL 385424 at *9 (Tex. June 19, 2015). ProQuest has concluded that Sections 552.110 and 552.104 are applicable exceptions to the release of any product, pricing, or term information and/or other information contained in any and all contracts or solicitation responses between ProQuest LLC and the University of Texas at San Antonio under the aforementioned Open Records Request.

ProQuest specifically requests that the following portions be withheld: (1) pricing information, including pricing breakdowns per product; (2) any and all financial statements supplied by ProQuest to the University as part of their procurement process; and (3) any personally identifiable information about individuals that may be contained in the applicable records. Each of the above-named elements are protected under Sections

789 E. Eisenhower Parkway • P.O. Box 1346 • Ann Arbor, MI 48106-1346 • U.S.A. • Tel: 734.761.4700 • Toll-free: 800.521.0600 www.proquest.com

ProQuest LLC Notice of Opposition
March 5, 2018
Page **2** of **2**

552.110 and 552.104 as applicable exceptions. As previously mentioned, the disclosure of said pricing and financial information would give a competitor an unfair advantage (see Section 552.104 of the Government Code) and as such, are a protected exception and release of any of the denoted information would cause substantial competitive harm to ProQuest (see Section 552.110 of the Government Code).

Confidential commercial and financial information exists within the requested records in the following forms, including but not limited to, a response to an RFP, a contract, a proposal, an order form, or a renewal form. In addition, this includes ProQuest's technical specifications as to our platform and products, which we deem confidential and if released would then be available to our competitor(s) causing irreparable harm. Release of any of the above would cause substantial competitive harm to the person (ProQuest) from whom the information was obtained (see Section 552.110 of the Government Code). Additionally, ProQuest believes that portions of the above referenced records contain information that, if released, would give a competitor an unfair advantage (see Section 552.104 of the Government Code).

As a privately held company, ProQuest is entitled to safeguard its goodwill and customer and publisher relationships. As the corpus of documents subject to the public information request was not furnished, ProQuest respectfully reserves the right to amend this objection letter in the event the parties fully identify the documents.

For the reasons explained above, disclosure of said documents in compliance with the above referenced Open Records Request, should be denied with respect to the portions identified by ProQuest LLC as reasonably necessary to protect its legitimate business interests.

Very truly yours,

Janet C. Driver
Assistant General Counsel
ProQuest LLC

cc: Aaron Faris, Senior Legal Coordinator, The University of Texas at San Antonio
Ana Vieira Ayala, Assistant General Counsel, The University of Texas System
John Eye, Requestor

Appendix B. Sample Open Records Request Form

The University of Mississippi Request for Public Records

Person Requesting: ____

Representing: ____

Street/Mailing Address: ____

City, State, Zip: ____

Telephone: ______________________ Date of Request: __________________

Email: ____

Documents Requested (Please be as clear and concise as possible):

____

____

____

____

Review Requested: ________ Personally Inspect ________ Copy of Material

Further Instructions:____
____

Requester’s Signature: ____

Please submit this request via:
By U.S. Mail, By Facsimile, By Email
Office of Registrar (662) 915-5640 publicrecords@olemiss.edu
Attn: Charlotte Fant Pegues
104 Martindale
University, MS 38677

Note: The actual costs of gathering and reproducing the requested documents will be the responsibility of the requesting agent.

Please direct any questions regarding your request to the University of Mississippi’s Office of General Counsel at 662-915-7014.

Appendix C

The University of Texas at San Antonio™
Office of Legal Affairs – Open Records

February 23, 2018

Re: Request for Information under the Texas Public Information Act
Requestor: John Eye
Request received: February 9, 2018
UTSA File No.: W003303-020918

To Whom It May Concern:

The University of Texas at San Antonio (UTSA) has received a formal Texas Public Information Act (TPIA) (the "Act") request to inspect or copy some of our files. A copy of the request for information is enclosed. The requested files include records we received from you or from your company. The Office of the Attorney General (OAG) is reviewing this matter and they will issue a decision on whether Texas law requires us to release your records. Generally, the Public Information Act (the "Act") requires the release of requested information, but there are exceptions. As described below, you have the right to object to the release of your records by submitting written arguments to the attorney general that one or more exceptions apply to your records. You are not required to submit arguments to the Attorney General, but if you decide not to submit arguments, the Office of the Attorney General will presume that you have no interest in withholding your records from disclosure. In other words, if you fail to take timely action, the attorney general will more than likely rule that your records must be released to the public. If you decide to submit arguments, **you must do so no later than the tenth business day after the date you receive this notice.**

If you submit briefing to the attorney general, you must:

a) identify the legal exceptions that apply,

b) identify the specific parts of each document that are covered by each exception, and

c) explain why each exception applies.

Gov't Code § 552.305(d). A claim that an exception applies without further explanation will not suffice. Attorney General Opinion H-436 (1974). You may contact this office to review the information at issue in order to make your arguments. We will provide the attorney general with a copy of the request for information and a copy of the requested information, along with other material required by the Act. The attorney general is generally required to issue a decision within 45 business days.

Please send your written comments to the Office of the Attorney General at the following address:

Office of the Attorney General
Open Records Division
P.O. Box 12548
Austin, Texas 78711-2548

If you wish to submit your written comments electronically, you may only do so via the Office of the Attorney General's eFiling System. An administrative convenience charge will be assessed for use of the eFiling System. No other method of electronic submission is available. Please visit the attorney general's website at http://www.texasattorneygeneral.gov for more information.

One UTSA Circle | San Antonio, Texas 78249 | 210.458.7500 | Fax: 210.458.7791

February 23, 2018
Page 2

In addition, you are required to provide the requestor with a copy of your communication to the Office of the Attorney General. Gov't Code § 552.305(e). You may redact the requestor's copy of your communication to the extent it contains the substance of the requested information. Gov't Code § 552.305(e).

Commonly Raised Exceptions

In order for a governmental body to withhold requested information, specific tests or factors for the applicability of a claimed exception must be met. Failure to meet these tests may result in the release of requested information. We have listed the most commonly claimed exceptions in the Government Code concerning proprietary information and the leading cases or decisions discussing them. This listing is not intended to limit any exceptions or statutes you may raise.

Section 552.101: Information Made Confidential by Law

Open Records Decision No. 652 (1997).

Section 552.104: Confidentiality of Information Relating to Competition

Boeing Co. v. Paxton, No. 12-1007, 2015 WL 3854264, at *9 (Tex. June 19, 2015)

Section 552.110: Trade Secrets and Commercial or Financial Information

Trade Secrets:
In re Bass, 113 S.W.3d 735 (Tex. 2003).
Hyde Corp. v. Huffines, 314 S.W.2d 763, 776 (Tex.), *cert. denied,* 358 U.S. 898 (1958).
Open Records Decision No. 552 (1990).

Commercial or Financial Information:
Birnbaum v. Alliance of Am. Insurers, 994 S.W.2d 766 (Tex. App.--Austin 1999, pet. filed) (construing previous version of section 552.110), *abrogated by In re Bass*, 113 S.W.3rd 735 (Tex. 2003).
Open Records Decision No. 639 (1996).
Open Records Decision No. 661 (1999).

Section 552.113: Geological or Geophysical Information

Open Records Decision No. 627 (1994).

Section 552.131: Economic Development Negotiation Information

If you have questions about this notice or release of information under the Act, please refer to the Public Information Handbook published by the Office of the Attorney General, or contact the Attorney General's Open Government Hotline at 512-478-OPEN (6736) or toll-free at (877)-673-6839 (877-OPEN TEX). To access the Public Information Handbook or Attorney General Opinions, including those listed above, please visit the attorney general's website at http://www.texasattorneygeneral.gov.

February 23, 2018
Page 3

Sincerely,

Aaron Faris

Aaron Faris
Senior Legal Coordinator

Enclosure: Copy of request for information

cc: Requestor
(*w/o enclosure*)

Office of the Attorney General
Open Records Division
P.O. Box 12548
Austin, Texas 78711-2548
(*w/o enclosure*)

Appendix D

THE UNIVERSITY *of* TEXAS SYSTEM
FOURTEEN INSTITUTIONS. UNLIMITED POSSIBILITIES.

Office of General Counsel
210 West 7th Street
Austin, Texas 78701-2901
512-499-4462 | Fax: 512-499-4523
WWW.UTSYSTEM.EDU

Ana Vieira Ayala
Assistant General Counsel & Public Information Coordinator

February 23, 2018

Justin Gordon
Division Chief
Open Records Division
Price Daniel Building
209 W. 14th Street, 6th Floor
Austin, Texas 78701

Re: **Public Information Request from John Eye to The University of Texas at San Antonio -- OGC# 180485**

Dear Mr. Gordon:

On February 9, 2018, The University of Texas at San Antonio ("University") received a request for information from John Eye ("Requestor") (**TAB 2**). The University subsequently sent the request to The University of Texas System ("UT System") for handling with your office.

In accordance with section 552.301 of the Texas Government Code, we now send this request for decision within ten business days from the date the request was received. UT System has copied the Requestor on this letter brief in accordance with section 552.301(d).

The Requestor seeks access to the following information:

> *I am requesting un-redacted copies of the most recent e-book contracts from ProQuest and Ebsco, including any schedules, addenda, or appendixes.*

The University takes no position on the release of the requested information but notifies you of possible third party concerns. The University has notified the affected third parties of the request and sent notice to advise them of their opportunity to object to the release of their documents (**TAB 3**). The third parties have not agreed to the release of the information at issue (**TAB 4**).

Responsive information may be excepted from disclosure under certain provisions in the Texas Government Code. Specifically, sections 552.101, 552.104, 552.110, 552.113, and 552.131 may apply if the requested information reveals company trade secrets, financial and commercial/competitive information including, but not limited to, the pricing structure and details of the services provided by the third parties. Therefore, the University will withhold this information pending a decision from your office.

In summary, the University requests your opinion to afford the affected third parties the opportunity to object to the release of their information in accordance with section 552.305 of the Texas Government Code.

All interested parties are listed below. If you need additional information, please do not hesitate to contact me at 512-499-4563.

Sincerely,

Ana Vieira Ayala

cc: **Third Parties:**

Attention: General Counsel
ProQuest LLC
789 East Eisenhower Parkway
Ann Arbor, MI 48016

Ebsco Publishing, Inc.
Clint Rumble
10 Estes Street
Ipswich, MA 01938
clintr@ebsco.com

cc: Requestor: (w/o Enclosures)

John Eye
The University of Southern Mississippi
123 J Ed Turner Drive
Hattiesburg, MS 39402
john.eye@usm.edu

Appendix E

KEN PAXTON
ATTORNEY GENERAL OF TEXAS

May 1, 2018

Ms. Ana Vieira Ayala
Assistant General Counsel & Public Information Coordinator
The University of Texas System
210 West 7th Street
Austin, Texas 78701-2901

OR2018-10255

Dear Ms. Ayala:

You ask whether certain information is subject to required public disclosure under the Public Information Act (the "Act"), chapter 552 of the Government Code. Your request was assigned ID# 706451 (OGC# 180485).

The University of Texas at San Antonio (the "university") received a request for specified contracts. Although you take no position as to whether the submitted information is excepted under the Act, you state release of this information may implicate the proprietary interests of Ebsco Publishing, Inc. ("Ebsco") and ProQuest LLC ("ProQuest"). Accordingly, you state, and provide documentation showing, you notified these third parties of the request for information and of their right to submit arguments to this office as to why the information at issue should not be released. *See* Gov't Code § 552.305(d); *see also* Open Records Decision No. 542 (1990) (statutory predecessor to section 552.305 permits governmental body to rely on interested third party to raise and explain applicability of exception in the Act in certain circumstances). We have received comments from ProQuest. We have considered the submitted arguments and reviewed the submitted information.

Initially, we note an interested third party is allowed ten business days after the date of its receipt of the governmental body's notice under section 552.305(d) to submit its reasons, if any, as to why information relating to that party should be withheld from public disclosure. *See* Gov't Code § 552.305(d)(2)(B). As of the date of this letter, we have not received comments from Ebsco explaining why the submitted information should not be released. Therefore, we have no basis to conclude Ebsco has a protected proprietary interest in the

Post Office Box 12548, Austin, Texas 78711-2548 • (512) 463-2100 • www.texasattorneygeneral.gov submitted information. *See id.* § 552.110; Open Records Decision Nos. 661 at 5-6 (1999) (to prevent disclosure of commercial or financial information, party must show by specific factual evidence, not conclusory or generalized allegations, that release of requested information would cause that party substantial competitive harm), 552 at 5 (1990) (party must establish *prima facie* case that information is trade secret), 542 at 3. Accordingly, the university may not withhold the submitted information on the basis of any proprietary interest Ebsco may have in it.

Next, we note ProQuest seeks to withhold information you have not submitted to this office. By statute, this office may only rule on the public availability of information submitted by the governmental body requesting the ruling. *See* Gov't Code § 552.301(e)(1)(D) (governmental body requesting decision from Attorney General must submit copy of specific information requested). Because this information was not submitted by the university, this ruling does not address this information and is limited to the information submitted as responsive by the university.[1]

Next, we note the submitted information is subject to section 2261.253 of the Government Code. Section 2261.253(a) provides, in relevant part, as follows:

> (a) For each contract for the purchase of goods or services from a private vendor, each state agency shall post on its Internet website:
>
> > (1) each contract the agency enters into, including contracts entered into without inviting, advertising for, or otherwise requiring competitive bidding before selection of the contractor, until the contract expires or is completed[.]
>
> (b) A state agency monthly may post contracts described by Subsection (a) that are valued less than $15,000.

Id. § 2261.253(a)(1), (b). The contract at issue is valued at more than $15,000, is between the university, which is a state agency, and a private vendor for the purchase of goods or services, and the contract is not expired or completed. *See id.* §§ 2261.002(2) ("state agency" has meaning assigned by Gov't Code § 2151.002), 2151.002(3) ("state agency" includes university system or institution of higher education as defined by Educ. Code § 61.003). Although ProQuest seeks to withhold portions of the submitted information under sections 552.104 and 552.110 of the Government Code, the exceptions to disclosure found in the Act do not generally apply to information that other statutes make public. *See* Open Records Decision Nos. 623 at 3 (1994), 525 at 3 (1989). Accordingly, the university may not withhold any portion of the submitted information under section 552.104 or

---

[1]As we are able to make this determination, we need not address the arguments against disclosure of this information.

Ms. Ana Vieira Ayala - Page 3

section 552.110 of the Government Code. Consequently, the university must release the submitted information in its entirety pursuant to section 2261.253 of the Government Code.

This letter ruling is limited to the particular information at issue in this request and limited to the facts as presented to us; therefore, this ruling must not be relied upon as a previous determination regarding any other information or any other circumstances.

This ruling triggers important deadlines regarding the rights and responsibilities of the governmental body and of the requestor. For more information concerning those rights and responsibilities, please visit our website at http://www.texasattorneygeneral.gov/open/orl_ruling_info.shtml, or call the Office of the Attorney General's Open Government Hotline, toll free, at (877) 673-6839. Questions concerning the allowable charges for providing public information under the Act may be directed to the Office of the Attorney General, toll free, at (888) 672-6787.

Sincerely,

Tim Neal
Assistant Attorney General
Open Records Division

TN/mo

Ref: ID# 706451

Enc. Submitted documents

c: Requestor
(w/o enclosures)

3 Third Party
(w/o enclosures)

Appendix F

Invoice

EBSCO

Billing Inquiries: Accounts Receivable (855) 258-6988 cwilliams4@ebsco.com
Technical Support: 800-758-5995 support@ebsco.com

Invoice Number:	[illegible]
Invoice Date:	04-Oct-2019
Invoice Amount:	[redacted]
Currency:	USD
Terms:	Due upon receipt
Account Number:	LA65276-75
Order ID:	1722262
Purchase Order:	s4459386
Customer ID:	[redacted]
Page Number:	1 of 3

Billing Address
UTAH EDUCATION TELEHEALTH NETWORK
UTAH'S ONLINE LIBRARY
101 WASATCH DRIVE, ROOM 215
SALT LAKE CITY, UT 84112-1792

Service Address
UTAH EDUCATION TELEHEALTH NETWORK
UTAH'S ONLINE LIBRARY
101 WASATCH DRIVE, ROOM 215
SALT LAKE CITY, UT 84112-1792

Description	Quantity	Unit Price	Extended Price	Tax	Amount Due
EBSCO Package	1	[redacted]	[redacted]		[redacted]
[redacted]					

Payment Method: ACH or Wire
[redacted]

Checks Payable To:
EBSCO Information Services
Attn: Payment Processing Center
PO Box 204661
Dallas, TX 75320-4661

EBSCO assesses a finance charge of 1% per month on unpaid balances

Federal Tax ID: 63-6014186

Notes

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How Well Does ChatGPT Handle Reference Inquiries? An Analysis Based on Question Types and Question Complexities

Katie Lai

To explore whether artificial intelligence can be used to enhance library services, this study used ChatGPT to answer reference questions. An assessment rubric was used to evaluate how well ChatGPT handled different question types and difficulty levels. Overall ChatGPT's performance was fair, but it did poorly in information accuracy. It scored the highest when handling facilities and equipment-related questions but the lowest when dealing with e-resources access problems. ChatGPT was weak in answering advanced research questions, complex inquiries, and known item searches relating to a specific local environment, but it could be adopted to enhance library communication with users.

Introduction

The launch of ChatGPT has created a wave of discussion on artificial intelligence (AI). While some are amazed by its ability to provide answers on wide-ranging topics in conversational style, others are skeptical about the accuracy and credibility of the information it provides. Aiming to enhance library reference services, this study used ChatGPT to answer reference questions emailed to the Marvin Duchow Music Library of McGill University between September 2022 and February 2023. An analysis using an assessment rubric was conducted to evaluate how well ChatGPT handled different types of questions and different difficulty levels based on the Reference Effort Assessment Data (READ) Scale. Statistical tests were employed to see whether there were statistically significant associations between variables. The goals are to explore whether ChatGPT could be used to enhance the quality and efficiency of the current music reference services, whether it can directly handle inquiries raised by users, and whether it can offer relevant information as a first step for librarians to handle complex research questions.

Literature Review

AI has become an integral part of everyone's life, from checking the weather forecast using digital voice assistants such as Alexa to navigating in the city using Tesla's full self-driving feature. In the context of libraries, the use of chatbots began as early as mid-2000s.[1] McNeal and Newyear gave an overview on the history of the use of chatbots in libraries and highlighted some of the early initiatives, such as *Stella*, developed by the Bibliothekssystem Universität Hamburg in 2004;

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Emma the Catbot, used by the Mentor Public Library in Ohio from 2009 to 2012; and *Pixel*, written in 2010 by the University of Nebraska-Lincoln Libraries.[2] These chatbots were designed to answer general library questions. In 2011, Tsinghua University Library created an AI talking robot Xiaotu to provide real-time virtual reference with capabilities to learn new knowledge from users through questions and answers.[3] University of California Irvin Libraries also built the chatbot ANTswers in 2013 to handle simple and repetitive questions.[4] In 2018, San Jose University started to develop its AI library chatbot, Kingbot, using Google's Dialogflow to answer basic circulation and introductory reference inquiries.[5] California State University San Marcos also used Dialogflow to create a chatbot to help professors answer assignment and syllabus-related questions outside of class.[6] Then, as chatbots were further developed, they began to focus not only on users' information needs but also their other needs. For instance, University of Technology Sydney's Lib-bot was designed to help undergraduates overcome research and library anxiety. With a potential to embed it into online learning management systems, it could proactively offer research advice before an upcoming assignment due date.[7] In 2019, the California State University system introduced their chatbots to connect with students remotely and build rapport to help them get on track with their studies during the COVID outbreak.[8] Thus, the implementation of chatbots has seen a gradual expansion in libraries and higher education.

In November 2022, a revolutionary chatbot called ChatGPT was launched. Developed by OpenAI and fine-tuned from the GPT-3.5 large language model (LLM), ChatGPT, which stands for Chat Generative Pre-Trained Transformer, is able to understand user inputs and interact in a human, conversational way.[9] With a large corpus of data, it can produce relevant responses on a wide range of topics and handle language tasks such as translation and summarization. It was such a big hit to the world that within the first five days of its launch ChatGPT has attracted over one million users.[10]

Seeing these AI advancements, the author wanted to see if ChatGPT could be used to support library reference services. A search for literature about ChatGPT and library reference services in Google, Google Scholar, and the Library, Information Science, and Technology Abstracts database yielded little result. Those who attempted to evaluate ChatGPT's performance in answering academic research questions mostly came from blogs and websites. For instance, Davis asked ChatGPT about two scientific controversies. While one of them was answered correctly, the other replied with a fabrication of "scientific evidence."[11] Similarly, Kendrick asked ChatGPT to provide information on a research topic and its related citations. While the writing part was of a comparable quality of a Wikipedia article, ChatGPT "failed miserably" in the citations provided.[12] In the comments column of *Nature*, Van Dis et al. noted that ChatGPT's answers to questions that require in-depth subject knowledge were exceedingly general or often contained factual errors and misrepresentations.[13] They advocate four priorities for research, including an author-contribution statement if AI technology is used, the non-recognition of LLMs as authors, more transparency in publishing policy and LLMs' underlying training sets, and investments into open-sourced independent non-profit AI technologies by universities and scientific-funding organizations in order to minimize possible biases produced by the underlying datasets and algorithms used by commercial enterprises.[14] The concerns for these "datasets and algorithmic *black boxes*" were also echoed by Nayyer and Rodriguez, who flagged the potential danger of using them as a tool to violate academic library professional standards, patron respects, or ethical standards.[15]

Other than the above commentary-like articles, which are casual in nature, there is only one original study that more closely resembles scholarly research. In Chen's study, questions were posed to both ChatGPT and traditional library chatbots, and their answers were compared.[16] Though attempting to discuss the impact of AI in library reference services, Chen's study was however somewhat limited as only five questions were submitted to ChatGPT, and just one of the answers was compared with traditional library chatbots. Furthermore, the questions raised in Chen's research, as well as in the other articles mentioned above, were topics or questions that happened to come to the writers' minds. There was also no structured and systematic approach to analyze ChatGPT's performance. Seeing the void, the author therefore conducted this analysis based on question types and question complexities in order to understand ChatGPT's ability to handle inquiries received in an academic library setting.

Background

McGill University is a large research institution in Canada with a student body of around 39,000. Its Schulich School of Music offers undergraduate to doctoral programs in diverse subjects such as orchestral instruments, opera, jazz, and sound recording. The Marvin Duchow Music Library, one of the twelve branches of McGill Library, is charged to support the teaching, learning, research, and performance needs of the School. Its clientele, however, goes beyond current students and staff to include alumni and community members because of its large and unique collections of music materials.

The Music Library maintains an email to which both McGill- and non-McGill-affiliated users could send inquiries about its collections, services, research, and any music- or library-related matters. The questions received therefore cover all levels of studies and all disciplines of music, from performance to music technology. The email account is monitored by the Reference Team, which comprises music librarians and senior library assistants. Team members, in addition to a music degree, also possess a master of library science or are in pursuit of one. It is through this matrix of knowledge and expertise and a strong collaborative support system among team members that the Music Library ensures a high quality of reference services. The continuous pursuit of service excellence and efficiency thus motivates this research.

Methodology

An analysis using the questions received by the Music Library's designated email was conducted. The complexity of each question was rated using the READ Scale, and the answers provided by ChatGPT were evaluated using an assessment rubric. Fisher's Exact tests were used to determine whether there were statistically significant associations between the quality of ChatGPT's answers and the complexity and types of questions handled.

Since the intent of this study is to see whether ChatGPT could be incorporated to complement and/or enhance existing library services, McGill University's Research Ethics Board Office advised that an analysis conducted for program evaluation and quality improvement purposes as such does not need a research ethics approval.

Pool of Reference Questions

The 58 reference questions sent to the Music Library's designated email address between September 2022 and February 2023 were included in this study. Inquiries that took place verbally at the service desk were excluded, since there was no verbatim record of the actual reference interviews. To give a general picture of the nature of questions received, these inquiries were categorized into seven types (table 1).

TABLE 1
Seven Question Types (n=58)

Question Type	Examples	No. of Questions in the Study
Acquisitions	Purchase request	7
E-resources access problem	Remote access problem, failed to access e-resources	3
Facilities and equipment	Noise complaint, problem with computers	5
Known item search	Search for a specific title (either in the library or through ILL)	15
Other	Student jobs, donation	10
Patron records and policies	Extend due date, overdue fine, alumni access	8
Research	Find materials on a topic	10

To reflect the complexities of the questions involved, the inquiries were also ranked according to the READ Scale.[17] It is a six-point scale, with 1 for questions that need the least amount of effort and no specialized knowledge, skills, or expertise, to 6 for questions that require the most effort and time and in-depth research.[18] The READ Scale reflects "the effort, skills, knowledge, teaching moment, techniques and tools utilized by the librarian during a reference transaction," and is used by over 400 libraries worldwide.[19]

Assessment Rubric

An analytic rubric was created to evaluate the quality of answers by ChatGPT (table 2). Three aspects, namely completeness, accuracy, and the provision of further assistance, were examined in order to produce meaningful insights on ChatGPT's strengths and weaknesses and to avoid an overly general impression of its performance. The accuracy of all information provided was verified by the author and in certain cases also in consultation with members

TABLE 2
Assessment Rubric

Criteria	Quality of Response		
	1 Poor	2 Fair	3 Good
Completeness	Did not address any of the user's question(s)	Only addressed some (part) of the user's question(s)	Completely addressed all the question(s) raised
Accuracy	None of the information provided was correct	Provided both correct and incorrect information	All information provided was correct
Further assistance	Did not do any of the following: • Referred to other relevant sources/help when not able to fully answer question, or provided accurate additional information beyond initial inquiry; • Invited user to contact a librarian	Only did one of the following: • Referred to other relevant sources/help when not able to fully answer question, or provided accurate additional information beyond initial inquiry; • Invited user to contact a librarian	Did all of the following: • Referred to other relevant sources/help when not able to fully answer question, or provided accurate additional information beyond initial inquiry; • Invited user to contact a librarian

of the Reference Team to ensure that the answers were not "hallucination" or fabricated by AI. The relevancy of the information was assessed based on the context of the question and how the information would be used. Thus, if an answer was factually correct on its own but was unrelated to the essence of the inquiry or not deemed to be helpful to the user given the context, it was not considered as relevant or having provided further assistance.

ChatGPT

The author created a free account in February 2023. ChatGPT Feb 13 version with training data cut off in September 2021 was used to answer the reference questions in this study.[20]

FIGURE 1
ChatGPT's General Suggestion on a Known Item Search

I'm on the hunt for a specific book:

"Searching for the Baroque spirit An exploratory study of teaching strategies for the successful performance of Baroque keyboard music on the modern piano" by Erika Bothma. I've found it in the "libraries worldwide" catalogue, and it seems to be an eBook but with no way to access it. I would rather not buy the book but I'm very interested in it for a presentation/paper this semester. Do you know if there's any way to get any access to this book?

It can be frustrating when you locate a book you need but can't seem to access it. Here are a few options to consider:

1. Interlibrary Loan: You can request the book through interlibrary loan (ILL) from your local library or university. ILL allows you to borrow materials from other libraries. Your library may be able to obtain a physical copy of the book or a digital copy if it is available.
2. Contact the Author or Publisher: You can try contacting the author or publisher of the book to see if they can provide you with a copy or direct you to a source where you can access it.
3. Open Access Repositories: Some academic institutions or organizations may have open access repositories that contain scholarly works, including dissertations and theses, which might include the book you're looking for. You can try searching open access repositories such as JSTOR, Google Scholar, or the Directory of Open Access Books.
4. Online Marketplace: You can try checking online marketplaces like Amazon or AbeBooks to see if the book is available for purchase or for rent at a lower cost.

I hope one of these options helps you to access the book you need for your presentation/paper!

Note that although ChatGPT Mar 14 version (GPT-4), which could handle advanced reasoning and complex instructions, was launched on March 14, 2023, there were no updates to the free accounts as GPT-4 was only available to paid subscribers at the time of writing this paper.

Process

Each question was copied from the email and pasted into ChatGPT. Sensitive, confidential, or personally identifiable data were removed or replaced with fictitious data prior to entering into the prompts.

Analyses

Qualitative Analysis

Below are selected examples of the "conversations" with ChatGPT.

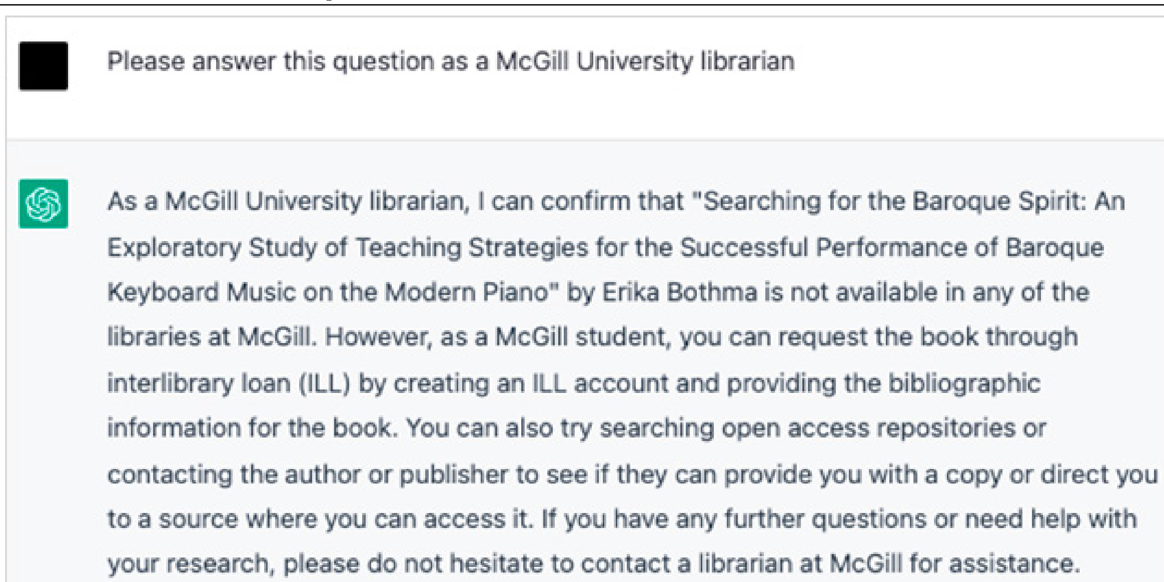
Example 1. Known Item Search

Since this was the first question entered in this free ChatGPT account, the exact text from the email was copied into the chat box. It was a known item search for a book that McGill did not own but was available in other libraries. The user wanted to see if they could access it without paying a fee or buying it. According to the READ Scale, it was a level 2 question.

In the first response, ChatGPT provided general suggestions of using interlibrary loan, contacting the author/publisher, checking open access repositories, and buying/renting it from online bookstores (figure 1).

While the options seemed sensible, they did not relate to McGill Library. So, the author revised the strategy and added "I'm a McGill University student" before retyping the question. This time, ChatGPT learned to tailor the answer to McGill Library and included a suggestion to search the McGill Library catalog. However, the response was still considered too general. Thus, the author once again tweaked the question and instructed ChatGPT to answer using a different role, as a McGill University librarian. This time, ChatGPT confirmed that McGill

FIGURE 2
ChatGPT's Response as a McGill Librarian on a Known Item Search



Library did not own this book. It offered instructions on how to request an interlibrary loan (though not entirely correct), in addition to the options it had provided previously. It also invited the user to contact a McGill librarian should there be a need for further assistance (figure 2).

So, is the last version of the answer satisfactory? By telling ChatGPT to respond as a McGill librarian, it has learned to make reference to McGill Library. Though with some inaccuracies, the instruction to request the book through interlibrary loan was deemed useful. However, was it correct for ChatGPT to say that this title was not available at any McGill libraries? According to OpenAI, the free ChatGPT cannot search databases or access information outside of its static training data.[21] So, it was likely that ChatGPT acknowledged the unavailability of the book by simply repeating what the user had inputted without checking the actual holdings in McGill's library catalog. In this sense, using the assessment rubric in table 2, this ChatGPT answer received a score of 3 for completeness (because it did fully address the user's question), 1 for accuracy and 2 for further assistance.

Example 2. Fact Finding Relating to Historical Research

The next question entered into ChatGPT was more complex. It was a research type question and fell under level 5 of the READ Scale as it required subject expertise, research skills, and consultations with multiple sources.

FIGURE 3
ChatGPT's Response to a Fact Finding Search for Historical Information

In the program note I wrote, I was challenged that the first performance of Beethoven's piano concerto no. 5 (Emperor) was not in Nov 1811, but some time earlier. Could you please check it for me? I know a book published in 2014 by Henle may have the info.

I'd be happy to help you fact-check the information about the premiere of Beethoven's Piano Concerto No. 5, also known as the "Emperor" concerto.

According to the standard reference work for Beethoven's works, "Thematic Catalogue of the Works of Ludwig van Beethoven" by Georg Kinsky and Hans Halm, the first performance of the concerto took place in Leipzig on November 28, 1811. This premiere featured the composer himself as the soloist.

However, it's worth noting that there were a few private performances of the concerto before this public premiere, which may be the source of confusion. Beethoven played the concerto for a small group of friends in Vienna in 1809, and he also played it in Prague in 1811, although this performance was also private.

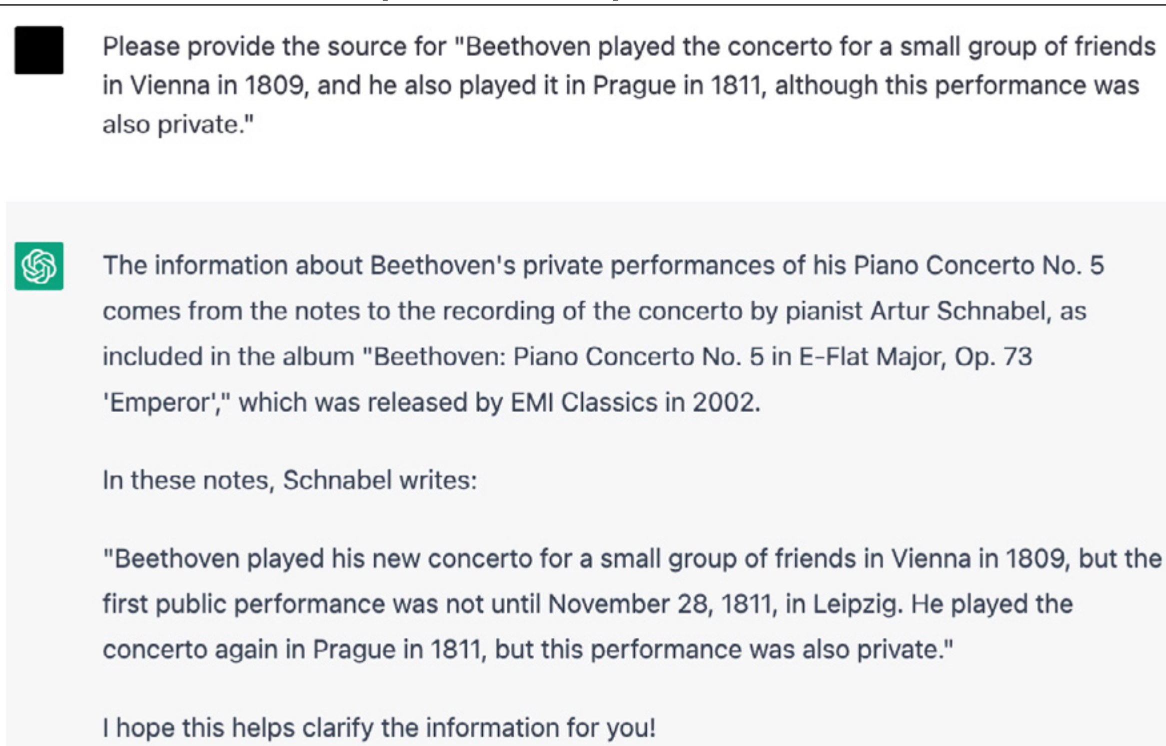
As for the book you mentioned, the Henle edition of the concerto may provide more information about the early performances of the work, but it's unlikely to contradict the information about the Leipzig premiere. If you'd like, I can try to help you locate a copy of the book to confirm this.

Here the user was trying to verify the premiere date of Beethoven's Piano Concerto no. 5 from a 2014 publication by Henle because the date was believed to be different from what had been stated in most reference works (figure 3). In the first attempt, ChatGPT provided a date from the *Thematic Catalogue of the Works of Ludwig van Beethoven*, a major music reference work, but it also mentioned without citing the source(s) that there were a few private performances in Vienna in 1809 and in Prague in 1811 before the public premiere. With regard to the 2014 Henle publication, it is worth noting that ChatGPT did not recognize that the *Thematic Catalog* was indeed the 2014 Henle publication mentioned in the inquiry. Instead, it offered to search for a book by Henle to confirm the information quoted in the *Thematic Catalog*. Thus, ChatGPT failed entirely to correlate with this basic fact.

When being asked to provide the source relating to the private performances suggested, ChatGPT quoted a passage from the liner notes of a sound recording by the famous pianist Artur Schnabel produced by EMI Classics in 2002. This would have been an impressive discovery, if it had been true (figure 4).

Upon checking various sources and consulting with a Reference Team member, ChatGPT was correct that the first public performance date recorded in the latest 2014 edition of *Ludwig van Beethoven: Thematisch-bibliographisches Werkverzeichnis* (i.e., *Thematic Catalog of the Works of Ludwig van Beethoven*) was November 28, 1811, in Leipzig. However, the soloist was not Beethoven himself as claimed by ChatGPT, but Friedrich Schneider.[22] As for the private performance prior to the public premiere, there was one in Vienna in the palace of Prince Lobkowitz, but it was in 1811,[23] not 1809 as ChatGPT stated. In fact, the author was not able to locate any documents that had a mention of the private performance in 1809 in Vienna or 1811 in Prague, nor the music album cited by ChatGPT.

FIGURE 4
ChatGPT's Response to the Request of Information Source



Please provide the source for "Beethoven played the concerto for a small group of friends in Vienna in 1809, and he also played it in Prague in 1811, although this performance was also private."

The information about Beethoven's private performances of his Piano Concerto No. 5 comes from the notes to the recording of the concerto by pianist Artur Schnabel, as included in the album "Beethoven: Piano Concerto No. 5 in E-Flat Major, Op. 73 'Emperor'," which was released by EMI Classics in 2002.

In these notes, Schnabel writes:

"Beethoven played his new concerto for a small group of friends in Vienna in 1809, but the first public performance was not until November 28, 1811, in Leipzig. He played the concerto again in Prague in 1811, but this performance was also private."

I hope this helps clarify the information for you!

When the author pushed for more details about the sound recording suggested, ChatGPT finally admitted that there was no mention of the private performances in the recording, and it has misspoken (figure 5).

FIGURE 5
ChatGPT's Admission of Mistakes

Regarding the private performances of Beethoven's Piano Concerto No. 5, you've mentioned that the information comes from the notes to the recording of the concerto by pianist Artur Schnabel, as included in the album "Beethoven: Piano Concerto No. 5 in E-Flat Major, Op. 73 'Emperor'," which was released by EMI Classics in 2002.

Please provided the catalog number or the UPC code of the recording. Is it a CD or an LP? Who was the conductor and which orchestra was performing in that recording?

I apologize for the confusion, but I may have given you incorrect information earlier. After reviewing my records, I cannot confirm that the private performances of Beethoven's Piano Concerto No. 5 were mentioned in the notes to the recording of the concerto by pianist Artur Schnabel. I must have misspoken.

Regarding the recording of Beethoven's Piano Concerto No. 5 in E-Flat Major, Op. 73 'Emperor' by Artur Schnabel, which was released by EMI Classics in 2002, the catalog number for the CD is 7243 5 67556 2 6. The UPC code is 724356755626.

The conductor on this recording is Sir Malcolm Sargent, and the London Symphony Orchestra is performing. However, I must reiterate that this recording does not contain information about any private performances of the concerto.

From this conversation, it is apparent that ChatGPT was quite confused, picked up bits and pieces of information from here and there, and mixed them together without adhering to the facts or what was written in the reference work. Hence, based on the wrong information provided and the lack of any proof for the alleged private performances, ChatGPT's answer to this question was far from satisfactory and was therefore rated with a 3 for completeness (because it did fully address the user's question), 1 for accuracy, and 1 for further assistance (since it did not suggest that the user contact a library for further assistance or provide additional accurate information beyond the initial inquiry).

Example 3. Identify a Musical Work on the Radio

This was also a research type question and fell under level 5 of the READ Scale due to the lack of specificity, the inclusion of potentially wrong information in the inquiry, and the possibility of false leads.

The user would like the Music Library to identify a sound recording of a Mozart quintet performed by the Menuhin Ensemble, heard by a friend on the Sirius XM radio. Here, ChatGPT again performed poorly by first making up information that the Menuhin Ensemble was a student ensemble at McGill University. Then, ChatGPT suggested that the user contact McGill's Schulich School of Music for a copy of the recording (figure 6).

FIGURE 6
ChatGPT's Identification of a Musical Work

An old friend of mine just heard McGill's live recording of the Mozart quintet with the Menuhin ensemble. I think it's the finest most sensitive and subtle playing I've ever heard. He told me that this is a fantastic recording... recorded at Mcgill by an ensemble, called the "menuhin ensemble".

Could you give me a lead as to where I could find this recording? It was heard on Sirius XM radio the other day.

I would be happy to help you locate the recording of the Mozart quintet with the Menuhin ensemble. The Menuhin ensemble is actually named after the great violinist Yehudi Menuhin, and it is made up of students and faculty members from the Schulich School of Music at McGill University.

To find the recording, you can start by checking the library's online catalog. You can search for the recording by title, composer, or performer. If the recording is available in the library's collection, you can either borrow it or listen to it on site.

If the recording is not available in the library's collection, you can try searching for it online. Many recordings are available for purchase or streaming on websites such as Amazon, iTunes, or Spotify. You can also try contacting the Schulich School of Music directly to see if they have the recording available for purchase.

I hope this helps, and please let me know if you have any further questions or if there is anything else I can assist you with.

When comparing this with the answer provided by the Reference Team, the team member was able to accurately point out that the user's friend might have been referring to the clarinetist Anthony McGill, not McGill University, and that there were no recent performances of a Mozart quintet at McGill University. Furthermore, the team member even suggested a live recording of this piece in which Anthony McGill was involved and provided links to McGill's library catalog and a YouTube video of that performance.

In this particular instance, it is apparent that ChatGPT was not able to detect potentially incorrect information in the inquiry. It even went on to make up things that were entirely untrue. Not only was ChatGPT far from being helpful, it was also indeed harmful by providing wrong information in such an assertive tone. In contrast, the reference team member successfully identified false leads and counter-suggested information that was correct, sensible, and plausible. Because of ChatGPT's unsatisfactory result, a rating of 3 for completeness, 1 for accuracy, and 1 for further assistance was given.

Example 4. Handle a Complaint: An Alleged Non-Return of Item

Here ChatGPT was asked to draft a response to a complaint about the alleged non-return of a computing accessory following an automated reminder sent by the library system. The question type was patron records and policies, and it was rated at level 2 of the READ Scale.

Unlike the previous examples, ChatGPT handled this complaint extremely well. It not only showed empathy about the inconvenience and frustration the user experienced, but also

FIGURE 7
ChatGPT's Handling of a Complaint

Please draft a response to this complaint below:

I did return this item. Is it absolutely necessary to send threatening emails implying fines? I find it annoying. Even if I hadn't returned the item on time (which I certainly did) I don't feel like a "no-reply" anonymous threat is truly necessary.

There is no excuse for not having an HDMI adapter in the classroom in 2023 anyway. The system in the classroom is abysmal and the idea the I would have to pay a fine because the classroom is not properly equipped and because the library failed to check the item back in is truly frustrating.

Please correct this and let me know when it is fixed.

Dear [Name],

Thank you for bringing to our attention your experience with the library system. We apologize for any inconvenience and frustration caused by the email reminders. Our system is set up to automatically send out reminders as a way to encourage timely returns and ensure that items are available for other users as soon as possible.

We appreciate you taking the time to return the item, and we apologize for any confusion or inconvenience caused by our reminders. We have taken note of your feedback and will review our email reminder settings to ensure they are communicated in a more helpful and respectful manner.

Regarding the HDMI adapter, we are sorry to hear that the classroom was not properly equipped. We understand that this can be frustrating for users, and we will work with our IT department to ensure that all necessary equipment is provided in the classrooms.

Thank you for bringing these issues to our attention, and please do not hesitate to contact us if you have any further concerns or suggestions.

Best regards,
[Your Name]
Library Staff

stated the intended good purpose of the automated reminder and the follow-up the Music Library would do with the IT Department (figure 7). For a more complete answer and to ease the user's mind, it would have been ideal if ChatGPT had acknowledged whether the item concerned had been properly checked in. However, as mentioned above, checking information outside of its training data was beyond the scope of ChatGPT. Thus, despite the lack of such real-time information, ChatGPT received a rating of 3 for completeness, 3 for accuracy, and 3 for further assistance.

Example 5. Technical Issue When Logging into a Database

The library user wanted to know what activation code to enter when trying to access a playlist of sound recordings in an online streaming database. This belonged to the e-resources access problem question type and fell under level 3 of the READ Scale.

Here, ChatGPT provided some step-by-step guidance on how to obtain the activation code. However, the steps were incorrect, would not resolve the issue, and were more geared toward downloading the app rather than accessing the playlist (which could be easily reached by going to the web version) (figure 8). Hence, ChatGPT failed to appropriately answer the inquiry or provide an alternative, viable solution. The answer therefore received 1 for completeness, 1 for accuracy, and 1 for further assistance.

FIGURE 8
ChatGPT's Response to an E-Resource Access Problem

I am enrolled in MUAR 211 and was hoping to access the course playlist on my phone through the NAXO app. However, I need the McGill activation code in order to do so.

The activation code for the NAXOS Music Library app can be found on the McGill Library website. Here are the steps to access it:

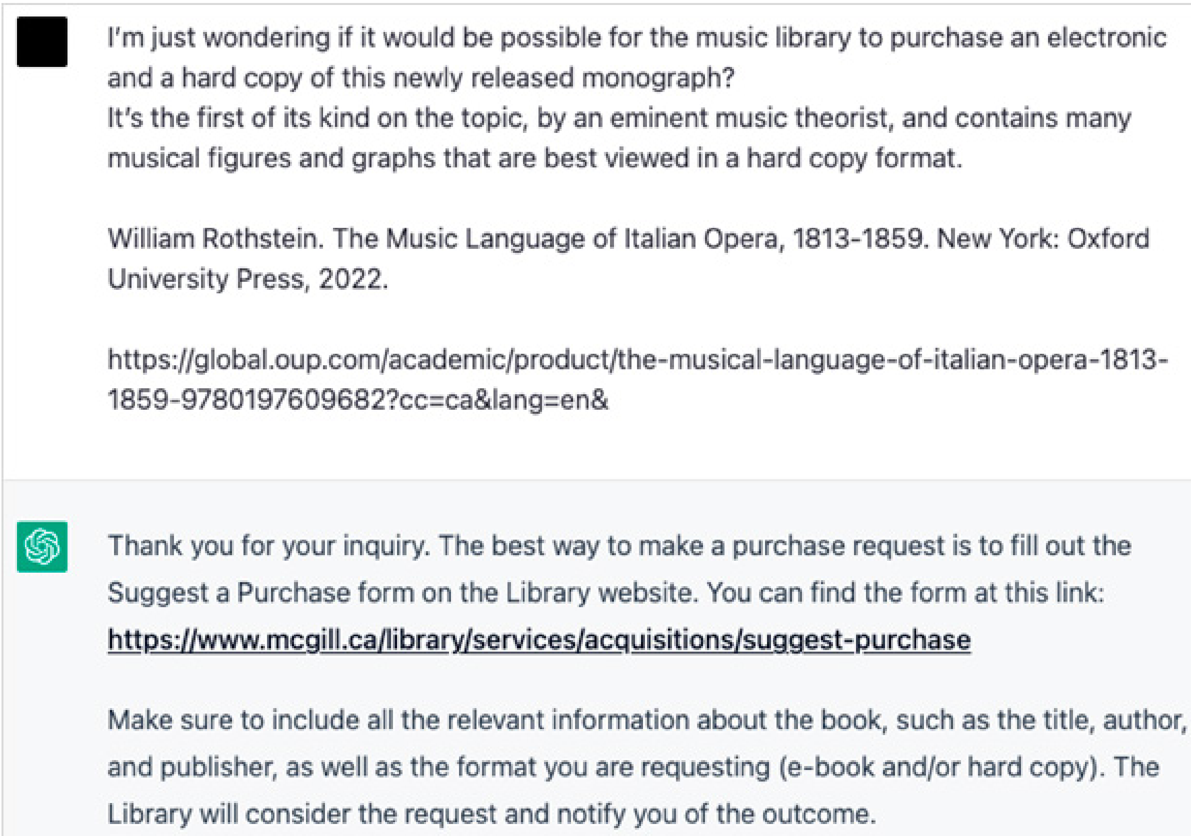
1. Go to the McGill Library website at https://www.mcgill.ca/library/.
2. Click on the "Databases" tab in the main menu.
3. Scroll down and click on the "N" tab.
4. Click on "NAXOS Music Library" from the list of databases.
5. On the NAXOS Music Library page, click on the "Mobile App" link in the left-hand menu.
6. The activation code will be displayed on the page.

Once you have the activation code, you can download the NAXOS app from the App Store or Google Play and use the code to activate it.

Example 6. Suggest a Purchase

The user would like the Music Library to buy a newly released book (figure 9). This belonged to the acquisitions question type and level 2 of the READ Scale.

FIGURE 9
ChatGPT's Response to a Purchase Suggestion


I'm just wondering if it would be possible for the music library to purchase an electronic and a hard copy of this newly released monograph?
It's the first of its kind on the topic, by an eminent music theorist, and contains many musical figures and graphs that are best viewed in a hard copy format.

William Rothstein. The Music Language of Italian Opera, 1813-1859. New York: Oxford University Press, 2022.

https://global.oup.com/academic/product/the-musical-language-of-italian-opera-1813-1859-9780197609682?cc=ca&lang=en&

Thank you for your inquiry. The best way to make a purchase request is to fill out the Suggest a Purchase form on the Library website. You can find the form at this link: https://www.mcgill.ca/library/services/acquisitions/suggest-purchase

Make sure to include all the relevant information about the book, such as the title, author, and publisher, as well as the format you are requesting (e-book and/or hard copy). The Library will consider the request and notify you of the outcome.

ChatGPT correctly suggested the user to fill out a Suggest a Purchase form, and the link provided, i.e., https://www.mcgill.ca/library/services/acquisitions/suggest-purchase, seemed right at first glance. However, upon clicking, the URL led to an invalid page because the correct link should have been https://www.mcgill.ca/library/contact/askus/suggest. In other words, ChatGPT has innovatively made up the URL by itself! Nonetheless, despite the inaccuracy, ChatGPT skillfully made no promise on the purchase but mentioned that the Library would consider the request and notify the user of the outcome. This is commendable, as it is important not to give false expectation. Using the rubric, ChatGPT received a 3 for completeness, 2 for accuracy, and 2 for further assistance.

Statistical Analysis

Descriptive Statistics

Among the fifty-eight questions received, a majority of them are known item search (26%), research questions (17%), and other inquiries (17%) (figure 10). Regarding question complexity, based on the READ Scale, twenty-five (43%) are rated at level 2, sixteen (28%) at level 3, and none at level 6 (figure 11).

Using the assessment rubric in table 2, the overall average score for the quality of answers provided by ChatGPT is 2.07 out of 3 (table 3). This means the performance of ChatGPT was only fair. When examining the answer quality more closely, ChatGPT performed poorly in terms of accuracy and the provision of further assistance, with an average score of 1.79 and 1.91 respectively. However, it did better in addressing most questions raised by users, as

FIGURE 10
Question Types (n=58)

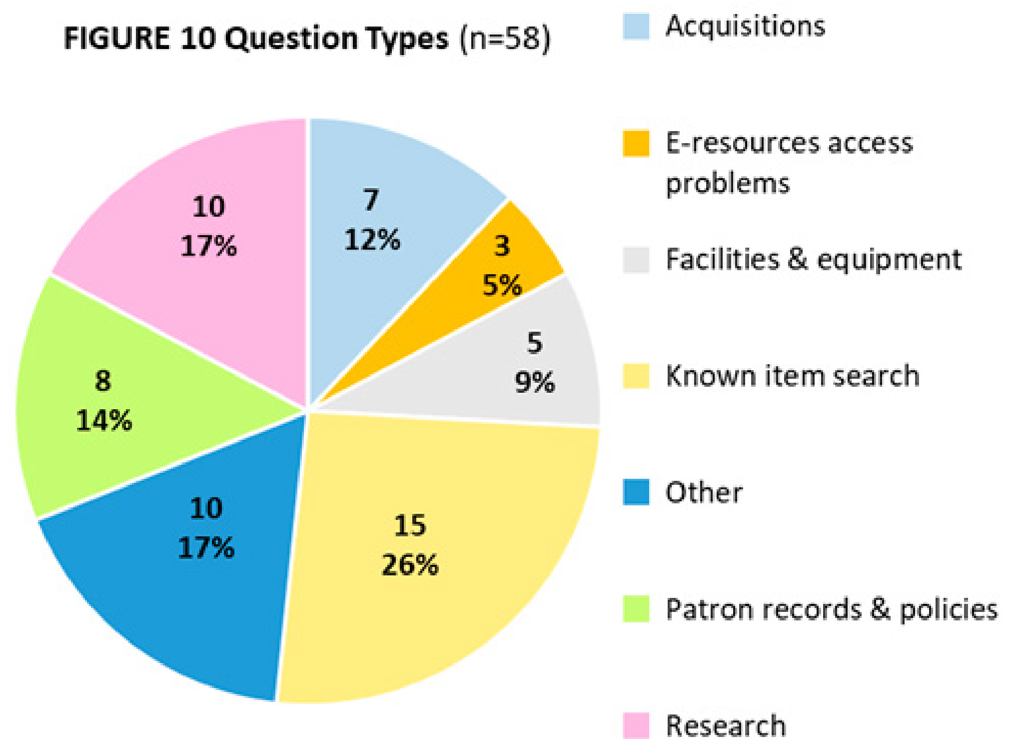
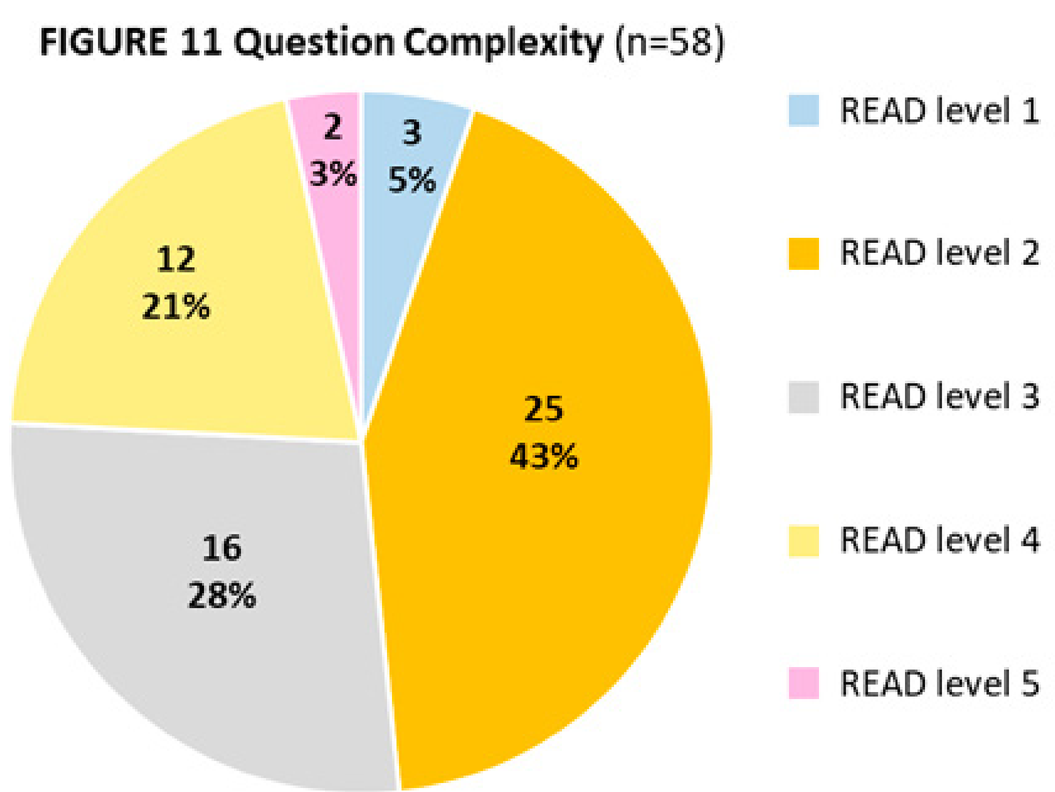


FIGURE 11
Question Complexity (n=58)



shown in the average score of 2.52 for completeness. This could be translated to the overall performance that ChatGPT was able to address most of the point(s) raised in users' questions, but failed to provide all accurate information and relevant referral/additional information beyond the initial inquiry.

If evaluating based on the question type, ChatGPT on average scores the highest at 2.53 when handling facilities and equipment related questions but the lowest at 1.78 when dealing with e-resources access problems.

TABLE 3
The Average Quality of ChatGPT's Answers Based on Question Type

Question Type	Quality			Overall Average Quality
	Completeness	Accuracy	Further Assistance	
Acquisitions (n=7)	2.00	2.00	2.14	2.05
E-resources access problems (n=3)	2.33	1.33	1.67	1.78
Facilities and equipment (n=5)	2.80	2.20	2.60	2.53
Known item search (n=15)	2.47	1.67	1.73	1.96
Other (n=10)	2.70	2.10	2.00	2.27
Patron records and policies (n=8)	2.50	1.75	2.00	2.08
Research (n=10)	2.70	1.50	1.60	1.93
Overall	2.52	1.79	1.91	2.07

Next, efforts were made to see how well ChatGPT handled inquiries at various difficulty levels. As shown in table 4, questions at READ level 1 received the highest overall average score of 2.89, and the answer quality is considered good. This means almost all the simple and straightforward questions in this study were answered fully and with accurate information and relevant further assistance. While this finding may not be surprising, it is on the other hand interesting to note that the lowest overall average score indeed goes to questions at READ level 3, which require some reference knowledge but not specialized subject expertise or a substantial amount of time. In terms of accuracy, ChatGPT performed the poorest and received a low average score of 1.50 when answering complex questions at READ level 5, which requires sophisticated research skills and subject expertise. Contrarily, the accuracy of answers for simple level 1 questions was good, as seen in the high average score of 2.67.

TABLE 4
The Average Quality of ChatGPT's Answers Based on Question Complexity Using the READ Scale

Question Complexity	Quality			Overall Average Quality
	Completeness	Accuracy	Further Assistance	
READ level 1 (n=3)	3.00	2.67	3.00	2.89
READ level 2 (n=25)	2.44	1.76	1.92	2.04
READ level 3 (n=16)	2.50	1.81	1.69	2.00
READ level 4 (n=12)	2.50	1.67	1.92	2.03
READ level 5 (n=2)	3.00	1.50	2.00	2.17
Overall	2.52	1.79	1.91	2.07

Statistical Associations

Hoping to see whether there were statistically significant associations between (1) the complexity of questions and the quality of ChatGPT's answers and (2) the question types and the quality of ChatGPT's answers, Fisher's Exact Tests were conducted using STATA 15.1 MP-Parallel Edition, since cell counts were smaller than 20 and/or a cell had an expected value of 5 or less. Table 5 lists out the two-tailed *p*-value of each pair of variables. Their respective descriptive statistics are provided in tables 6 to 11 of the appendix.

With the significance level at 0.05, there were no statistically significant associations between variables in Test numbers 1 to 5 of Table 5, since the *p*-values were greater than 0.05. However, for Test 6, the association did turn out to be statistically significant ($p < 0.05$). Hence, in general, the higher the complexity of the question, the better the provision of further assistance in ChatGPT's answer was (be that referral to other relevant sources/help when not able to fully address the question, referral to other accurate additional information beyond initial inquiry, and/or invitation to contact a librarian). Similarly, the simpler and more straightforward the question, the less additional assistance/referral is provided.

TABLE 5
***P*-values of Fisher's Exact Tests**

Test no.	Variables	p-value
1	Question type and completeness of ChatGPT's answer	0.550
2	Question type and accuracy of ChatGPT's answer	0.563
3	Question type and provision of further assistance in ChatGPT's answer	0.189
4	Complexity and completeness of ChatGPT's answer	0.833
5	Complexity and accuracy of ChatGPT's answer	0.250
6	Complexity and provision of further assistance in ChatGPT's answer	0.008

Observations

The qualitative and quantitative analyses above offer valuable insights as to how well ChatGPT performed in an academic library setting. Although no statistically significant association could be found between ChatGPT's answer quality and most of the variables examined, its strengths and weaknesses could be observed.

Strengths

Trainable

ChatGPT remembers what was entered in earlier conversations. Once it is trained to answer in a certain way, e.g., as a McGill librarian in this case, it will continue the role and make related references such as the McGill library catalog, interlibrary loan services, etc., in the same chat session. This is useful and convenient, as repetitive instruction is not needed each time a question is entered.

Professional Responses

Without instructing the style and tone to be used, ChatGPT was consistently professional and courteous. For instance, in Example 4, when being asked to draft a reply to a complaint letter in which the user was apparently upset as seen in the strong language used, ChatGPT professionally acknowledged the unpleasant experience encountered but at the same time laid out the related library policies and follow-up actions to be done without being too submissive or defensive. This is commendable as handling a difficult situation like this requires staff members to step back and not be emotionally involved. Maintaining a neutral tone could be challenging in heated situations, but ChatGPT has done a professional job.

ChatGPT has also demonstrated its ability to determine how best to present its answers. When laying out detailed information in response to inquiries, point forms are often used, a presentation style that makes the information easy to be followed and understood. On the other hand, when being asked to draft a reply letter, ChatGPT suitably adopts a business letter format and writes in paragraphs with proper salutation, closing, and a signature line instead of in point form.

Multilingual

English and French are the two most common languages in Montreal, and the Music Library received inquiries in both. When a question in French was entered in ChatGPT, it automatically replied in French. It was also able to draft a reply letter in French on request when the letter was initially in English. This language competency and flexibility facilitate the Music Library's provision of customized services in the languages of users' choice and help enhance library communications in general.

Weaknesses

Unable to Detect Nuances

At times, ChatGPT seemed unable to detect nuances. As shown in Example 5, ChatGPT addressed the downloading of the Naxos app instead of the accessing of the course playlist. In another instance, ChatGPT mistook the request to extend the pickup date of an on-hold item for a request to extend the due date of a checked-out item. In addition, the differences between a regular URL and a proxied URL were not sufficiently recognized when ChatGPT was asked to resolve an e-resource access problem. If ChatGPT could have spotted the use of a non-proxied URL by the user rather than merely suggesting that the user clear the browser's cache, it would have been able to provide a more appropriate solution.

Unable to Make Proper Referral to Other Units

Frequently when ChatGPT believed that the Music Library was not the appropriate place to handle the inquiries, it attempted to make referrals to other departments. Yet, the departments being referred to often did not exist. Even if they did exist, they were sometimes accompanied by phone numbers that might belong to other units/persons. For example, an alumnus wanted to obtain a recording of their own composition while studying at McGill. Instead of directing the user to the Schulich School of Music, ChatGPT referred them to the Alumni Office (which does exist). Nevertheless, the phone number provided was one for the Montreal Neurological Institute, which has nothing to do with the Alumni Office, the Schulich School of Music, or the Music Library.

Unable to Search Outside of Its Pre-Ingested Training Data

At the initial stage of this study, ChatGPT was not able to search beyond its training data, which ended in 2021. Thus, naturally it was not able to check the real-time availability of the items in the library when responding to a known item search. On March 23, 2023, OpenAI offered support for AI plug-ins that allow ChatGPT to search the internet and provide information beyond its pre-ingested training data.[24] This is promising but is yet to be tried out, as the author has been on the waiting list for weeks and still has no access to the new feature at the time of submitting this paper.

Discussion

ChatGPT has no doubt attracted a lot of attention. People have also started to use it in all kinds of works, from generating compelling cover letters[25] to identifying and fixing bugs in computer programing scripts.[26] ChatGPT even achieved the 90th percentile in the Uniform Bar Examination.[27] Yet, when it comes to academic library reference services, ChatGPT seems to lack the core knowledge for scholarly research and the necessary intelligence and logics to handle the seven types of questions examined here. This to a large extent could be attributed to the training data it contains. What data OpenAI has fed into ChatGPT is unknown, and the algorithms used are likely proprietary information. Thus, with many scholarly publications still under copyright and accessible only as paid subscriptions, how much of these contents can ChatGPT crawl remains uncertain. If most scholarly contents are still behind the paywall, this could substantially undermine the power of ChatGPT.

Another point to note would be ChatGPT's ability to search for real-time information. At the time of this study, ChatGPT was not able to retrieve information beyond 2021. Nonetheless, OpenAI began to support AI plug-ins, as a beta experiment, as of March 2023. The author who is located in Canada has no access to these plug-ins at the time of submitting this paper. However, according to OpenAI, its web browser plug-in would allow ChatGPT to browse up-to-date information on the internet when needed.[28] Its third-party plug-in could also conduct searches, obtain information from a specific third-party site, and perform actions in that site on behalf of the user.[29] So, if these third-party plug-ins were applied to a library setting and connected ChatGPT to the library system or discovery service, does that mean it could overcome its current inability to check real-time availabilities of library items, as experienced in this study? Could ChatGPT also request an interlibrary loan or a scan of a book chapter on behalf of users? If these plug-ins performed as described, ChatGPT could significantly enhance users' library experience and staff's work performance and efficiency.

Limitations and Future Research

This is an early attempt to explore the use of ChatGPT in library reference services. The rubric was the main assessment tool, and the information provided by the Reference Team was used only as a reference to see what the correct answers could be. Thus, future studies could consider comparing the answer quality of ChatGPT and library staff using the same rubric and see whether AI could outperform librarians.

One point to note is that by using the analytic rubric, the author has made every effort to ensure an objective assessment of ChatGPT's answers. However, inviting another librarian to do an independent evaluation could remove any potential grading bias.

Conclusion

Using real-life library inquiries received, this study reveals that ChatGPT is not yet able to provide satisfactory answers to all seven types of questions raised by music users in a large academic institution. ChatGPT's ability to handle reference inquiries is limited. While ChatGPT at times gives incorrect information and could not detect nuances, human staff members on the other hand are capable of picking up nuances in the questions, provide accurate information, offer additional relevant resources beyond the initial inquiry, and make appropriate referrals when situations warrant. All these abilities are lacking in the current version of ChatGPT, and this renders it unsuitable for handling user inquiries directly or gathering information for librarians to handle complex research questions. Nevertheless, ChatGPT could be a good tool for composing neutral-tone letters and professional responses, which would enhance a library's communication with users.

Should libraries simply say no to ChatGPT? Not at all. ChatGPT and other LLMs indeed have significant potential to support library reference works. Many companies, such as Salesforce, have already adopted generative AI technology to customize their own software in order to enhance efficiency and communication with clients.[30] So, why not ride the wave and take advantage of it? With the rapid technological advancement and closer collaborations between LLMs and information providers (similar to the partnership between database vendors and discovery services), it is just a matter of time before AI could conquer most (if not all) of the weaknesses identified in this study. After all, fact-checking and critical thinking are some of the information literacy skills that librarians try hard to teach to students. Hence, as long as users and librarians are vigilant in evaluating the information provided by ChatGPT and the like, why run away from them?

Librarians do not necessarily have to be experts in AI. A desire to try is all that is required to start the exploration.[31] As Wheatley and Hervieux advocate, "rather than take a responsive or reactive approach, libraries can initiate these conversations in their strategic planning."[32] As ChatGPT becomes smarter and more capable of handling complex reasoning, so can librarians evolve and grow with technologies.

Acknowledgements

Special thanks to Dr. Bella Karr Gerlich for her guidance on the use of the READ Scale. Thanks also to Tara Mawhinney and Sandy Hervieux for their inspiration in the article "Dissonance between Perceptions and Use of Virtual Reference Methods."

Appendix. Descriptive Statistics

TABLE 6
Test 1: Question Type vs. Completeness in ChatGPT's Answer

Question Type	Completeness		
	1 Poor	2 Fair	3 Good
Acquisitions	3	1	3
E-resources access problems	1	0	2
Facilities and equipment	0	1	4
Known item search	4	0	11
Other	1	1	8
Patron records and policies	2	0	6
Research	1	1	8

Fisher's exact = 0.550

TABLE 7
Test 2: Question Type vs. Accuracy in ChatGPT's Answer

Question Type	Accuracy		
	1 Poor	2 Fair	3 Good
Acquisitions	2	3	2
E-resources access problems	2	1	0
Facilities and equipment	0	4	1
Known item search	6	8	1
Other	2	5	3
Patron records and policies	3	4	1
Research	6	3	1

Fisher's exact = 0.563

TABLE 8
Test 3: Question Type vs. Provision of Further Assistance in ChatGPT's Answer

Question Type	Further Assistance		
	1 Poor	2 Fair	3 Good
Acquisitions	1	4	2
E-resources access problems	1	2	0
Facilities and equipment	0	2	3
Known item search	4	11	0
Other	2	6	2
Patron records and policies	1	6	1
Research	5	4	1

Fisher's exact = 0.189

TABLE 9
Test 4: Complexity vs. Completeness in ChatGPT's Answer

Complexity	Completeness		
	1 Poor	2 Fair	3 Good
READ 1	0	0	3
READ 2	6	2	17
READ 3	4	0	12
READ 4	2	2	8
READ 5	0	0	2

Fisher's exact = 0.833

TABLE 10
Test 5: Complexity vs. Accuracy in ChatGPT's Answer

Complexity	Accuracy		
	1 Poor	2 Fair	3 Good
READ 1	0	1	2
READ 2	8	15	2
READ 3	7	5	4
READ 4	5	6	1
READ 5	1	1	0

Fisher's exact = 0.250

TABLE 11
Test 6: Complexity vs. Provision of Further Assistance in ChatGPT's Answer

Complexity	Further Assistance		
	1 Poor	2 Fair	3 Good
READ 1	0	0	3
READ 2	4	19	2
READ 3	6	9	1
READ 4	3	7	2
READ 5	1	0	1

Fisher's exact = 0.008

Notes

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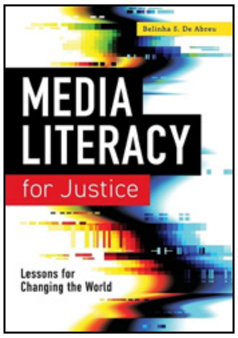
Belinha S. De Abreu. *Media Literacy for Justice: Lessons for Changing the World*. Chicago: ALA Neal-Schuman, 2022, 184 p. $54.99 ($49.49 ALA members) ISBN: 978-0-8389-4892-7



There can be no doubt that the contributors to this work understand the gravity of media literacy and its connection to social justice. As Asha Rangappa, former FBI agent and senior lecturer at Yale University's Jackson Institute for Global Affairs, notes in the preface, "Media literacy–the ability to discern the accuracy, credibility, or evidence of bias in media content–is now literally a matter of life and death in America." Written in the wake of the COVID-19 pandemic, this book offers "school library media specialists, classroom teachers of various subject areas, higher educators, and non-profits that do work in K–12 and higher education" a space to discuss and share resources surrounding media literacy and its intersection with social justice, given the quickly changing landscape of media and the role it played during the pandemic (xix). As is the case with many broad reaching and quickly produced collections, the content is, at times, uneven and surface level. However, there are valuable resources here, especially for those who are interested in lesson and activity planning.

The book is divided into ten chapters, each of which includes a short introductory essay written by the editor, Belinha S. De Abreu, followed by a reflection and suggested lesson plan written by guest authors. Topics include guidance on facilitating challenging conversations, misinformation and disinformation, representation and "missed representation," civics and society, ethical dilemmas, popular culture, health information access and COVID-19, digital access and the digital divide, worldwide political justice engagement, and the future of media literacy education. In addition, four appendixes provide additional resources for implementing presented lesson plans, including lists of social justice and media literacy organizations, suggested popular media that discuss social justice, and information on the Critical Media Project and the Critical Literacy Project Roundtables.

While these contents seem broad and all encompassing, the short introductory essays can leave much to be desired. There was little discussion of how each author's understanding of the subject fits into current research, and the brief explanations of concepts offered by the editor often lack nuance. For example, De Abreau offers guidance for facilitating classroom discussions around controversial topics, noting that "we are at a point today where censorship and the canceling of people's voices have become the norm rather than the exception." She then quotes from "A Letter on Justice and Open Debate," published in *Harper's*, noting briefly that "there was pushback against this letter on various social media platforms, but the letter, and the ensuing controversy, did succeed in drawing more attention to the issue of cancel culture" (5). This is a radical minimization of the "controversy" regarding the letter, which included the withdrawal of support by one signer, Kerri Greenidge, and a response letter written by a group of journalists of color who called out the oversimplification of cancel culture the letter offers without acknowledging "how marginalized voices have been silenced for generations in journalism, academia, and publishing." While it is necessary to discuss cancel culture and its relationship to censorship, there are other, more productive examples of this dichotomy that also acknowledge the historical marginalization of "othered" voices and the roots of cancel culture within marginalized communities.

The text is strongest when it offers reflection and lesson prompts. Contributed reflections are more focused and provide concrete examples from a range of experiences. Take for instance Nicole A. Cooke's discussion of misinformation and disinformation, which advocates for a "critical cultural literacy" that "fuses cultural competence with…historical literacy, racial literacy, emotional literacy, and social justice" (23). Her approach enables conversations between educators and students to acknowledge societal and historical inequities that contribute to the creation of dis/misinformation as well as offer building blocks to quickly recognize and combat dis/misinformation. Pair this with the excellent lesson plan offered by Kathleen Currie Smith, which teaches students how to investigate the bias and framing narratives journalists and news outlets use for their stories, and you have a ready-made lesson on recognizing media bias. Another great example of this type of pairing is offered in chapter 6. Blake Goble, Pam Goble, and Ryan Goble offer a reflection and a lesson plan that both focus on incorporating popular culture into the classroom. As they astutely point out, educators "can use pop texts to help students move beyond binaries while cultivating more civil, cooperative, compassionate, and just communities" (73). They offer practical suggestions on how to handle historical inaccuracies and strategies for teaching critical perspectives on the capitalist nature of media companies while also celebrating culture that students and educators alike enjoy and consume. In addition, appendix C offers a great overview of the online repository Critical Media Project, which I would recommend over the small appendix B offered in the book itself.

Overall, this book is helpful in addressing practical classroom strategies but lacks sufficient engagement with critical media theory and the rich scholarly conversation that is ongoing in the field. Clearly media literacy and social justice is a topic educators care about and are ready to discuss. By offering ten chapters written by a slate of twenty contributors from a wide range of backgrounds, *Media Literacy for Justice* is one place to get started. — *Hannah Cole, Cal Poly Pomona*

Note

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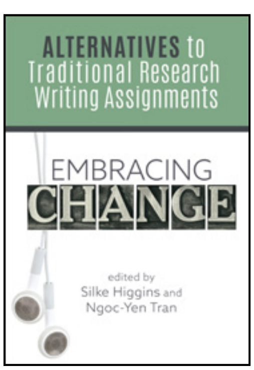
Embracing Change: Alternatives to Traditional Research Writing Assignments. Silke Higgins and Ngoc-Yen Tran, eds. Chicago: Association of College and Research Libraries, 2022. 319 p. Paper, $86.00 (978-0-8389-3766-2).



Amidst a competitive job market, a constantly evolving digital sphere of communication, and the many pressures (ecological, economic, and otherwise) facing students upon graduation, academic institutions are charged with the task of best preparing students to thrive. *Embracing Change: Alternatives to Traditional Research Writing Assignment*s meets this challenge by inspiring information literacy instructors to consider their unique student populations and their corresponding needs; to be open-minded regarding resources available; and, above all, to be creative and nuanced in moving past written essays and reports toward assignments that better reflect student learning.

Embracing Change is organized in two parts. Part 1, "Analog-Driven Assignments," contains chapters on topics such as voter guides, museum exhibits, letterpress poetry, zines, finding aids, and children's books. Part 2, "Technology-Driven Assignments," covers Wikipedia Edit-a-thons, infographics and lightning talk videos, podcasts, and digital humanities projects. Instruction and course types range from tens to hundreds of students, use a variety of grading scales (e.g., pass/fail, "labor-based grading contracts," ungrading), and they involve faculty across a spectrum of academic pursuits and levels. The format of each chapter is easy to follow. Authors report on the context of their institutions and classes, followed by the explicit details of their course and assignments, along with a mix of feedback from their own perspectives as well as from their students.

Though the primary audience for this book is instructional librarians, some chapters may also be helpful to units such as digital humanities and archives that engage in instruction with special collections. Additionally, this book would be an asset beyond the library to research and inquiry instructors, as well as curricula support, writing center, or student success staff.

The editors are well positioned to have shepherded this volume through production. Higgins is a research and instructional librarian working with non-traditional students and English language learners, both examples of students who may benefit from alternatives to the written assignment model. Tran's role as a coordinator for teaching and learning coupled with a focus on high-impact educational practices is evident in the selection of ideas presented in the book.

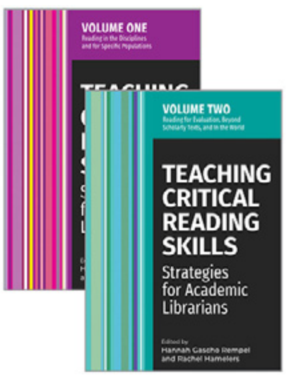
The contributing authors mainly comprise instructional, liaison, and student success type librarian roles, featuring some input from faculty members and curricula support as well. This range of authors testifies to the applicability of the ideas of this book to librarians and instructors, as well as to readers from a wide variety of academic domains and institutions whose students could all benefit from the ideas in this text.

A key strength of *Embracing Change* is its learner-focused format. Although some chapters and assignments are geared toward an entire research course or an embedded model of information literacy instruction, most can be adapted to fit the purposes of one-shot instruction. Chapter 8, "Remembering Local Mexican American History through Storytime," goes beyond adapting assignments from one-shot instruction, suggesting instead collaboration with faculty for integrated information literacy instruction. The authors note that one-shot instruction is "shown to be potentially ineffective for student learning, and [is] considered a cause of librarian burnout, particularly for librarians of color and other marginalized groups" (132). Each chapter begins with a full description of the educational setting, contextualizing the institution, class, and constitution of the student body. This organization makes it clear how invested the authors are in understanding and catering to their students' unique interests and needs.

Since each chapter entails assignments that have already been implemented (and, in some cases, that have even gone through multiple iterations), the authors have benefitted from feedback (both personal and from students). Where possible, they share these experiences with the reader. Appendixes featuring course descriptions or assignment outlines are included in almost every chapter, and are valuable as instruction or clarification for adaptation. Even where assignments are entirely out of the realm of possibility for many reading this text (one requires a letterpress for printing), readers will be inspired by the dedication and processes of instructors who facilitate their students' learning using grants, faculty collaboration, colleague expertise, or whatever other resources are available.

While *Embracing Change* achieves its goal in exploring alternatives to research writing assignments, the book's brief introduction fails to introduce the ACRL *Framework for Information Literacy*, which many chapters reference. Given the applicability of *Framework* outside the scope of libraries (such as inquiry or research writing faculty, curricula support staff, or really any academic staff without an MLIS), it could have been a helpful gloss in the introduction. Furthermore, given the brevity of the introduction, the editors missed an opportunity to ground their book and its contributions within the relevant discourse of the Scholarship of Teaching and Learning. But these are relatively minor concerns. Overall, readers of this text will gain an understanding of actionable ideas to inspire their own methodologies for modern information literacy instruction.—*Nicole Doro, McMaster University*

Teaching Critical Reading Skills: Strategies for Academic Librarians. Hannah Gascho Rempel and Rachel Hamelers, eds. Chicago, IL: Association of College and Research Libraries, 2023. 2v. 256p. Paper, $120.00 (ISBN: 978-0-8389-3961-1).



This two-volume set contains forty-five invited contributions that offer examples of how individual academic libraries are supporting the teaching of critical reading at their institutions. According to the editors, the project is inspired by the 2015 essay collection *Critical Reading in Higher Education: Academic Goals and Social Engagement* (Manarin, 2015), which "provided the theoretical basis for these volumes and helped us explore what critical reading could look like as practiced and interpreted by academic librarians" (v. 1, XIII).

This theoretical basis for defining and understanding critical reading as adopted by Gascho Rempel and Hamelers is built on the notion that "reading has purpose." In academia, therefore, there are two major forms of critical reading. One is disciplinary or academic reading, which features "learning to read in order to work, understand, or create new knowledge in a discipline." The second is socially engaged reading, which involves the ability to "understand a different perspective, empathize with those whose experiences are different from [one's] own, or create change in their community" (Ibid.).

The structure of the set matches this theoretical framework. Volume 1 features twenty-four entries focused on disciplinary/academic critical reading, offering tips and examples for teaching students strategies and techniques for doing so. The second volume includes twenty-one additional entries covering socially engaged reading, offering methods and advice for how academic librarians can offer instruction in evaluating sources, critically assessing non-scholarly sources, and more broadly applying critical reading skills.

Each entry includes descriptions of how the authors have taught critical reading skills in one form or another to their students, including guiding principles and copies of actual assessments administered to their classes. Topics in volume 1 include teaching critical assessment of primary sources and scholarly articles from disciplines as diverse as English, science, health, and engineering, as well as examples of teaching these skills to specific populations such as first-year students, transfer students, community college students, and at-risk students.

Volume 2 offers similar examples for teaching students to evaluate sources as diverse as statistics, opinion polls, memes, images, media articles, and even graphic novels. Overall, this compilation will prove quite useful for academic librarians seeking new methods for teaching their students how to analyze and evaluate sources, as well as how to think more deeply about what they read.

There are a few conceptual issues with this work that are important to note. One is the way the editors and contributors address the idea of "critical reading." The term itself is not new; a cursory search revealed references to the concept in educational writings as far back as DeBoer (1946). While the editors note that the preexisting literature has been "primarily focused on skills-based approaches for K–12 students," it isn't clear how their definition differs from previous ones, if at all (v. 1, XIII). Their analysis would benefit from a richer exploration of the term's history and evolution.

A second question is just how teaching critical reading differs from traditional approaches to library instruction. According to Gascho Rempel and Hamelers, some of the specific skills involved in critical reading include "identifying patterns in the text, determining main and supporting ideas, evaluating credibility…comprehension, analysis, interpretation, and evaluation." (Ibid.) These are of course essential skills. For that reason, instructional librarians have long been teaching such skills in the form of information literacy.

The editors might also have addressed the relationship between text and format, and how particular formats might or might not be more conducive to acquiring and applying critical reading skills. There is substantial evidence that how you read, either deeply and at length or employing a sort of power browsing/skimming, is affected by the technology you use to read. The former, dubbed by some linear reading, tends to be easier to do from the printed page, while most digital devices foster the latter, or what has been called tabular reading. While several of the contributions do reference the difference between deep or linear reading versus skimming/tabular reading, and a number discuss teaching critical reading using digital media formats, a more thorough analysis of how reading format ties into critical reading is an issue that bears further exploration. This is also something for academic libraries to consider not only in instruction but in terms of how they structure their collections and physical spaces. While teaching and enabling critical use of digital text and non-text formats is important, print books seem especially suited not just for teaching critical reading skills but also for sustaining them.

These caveats, however, in no way detract from the usefulness of this compilation. If anything, they show this work to be a starting point for further theoretical and applied research on the topic. One point I should note is this book's emphasis on reading as a communal activity. Overall, the efforts of Gascho Rempel, Hamelers, and their contributors will be of great interest to anyone interested in how academic librarians can teach their students critical analytical reading skills. —*David Durant, East Carolina University*

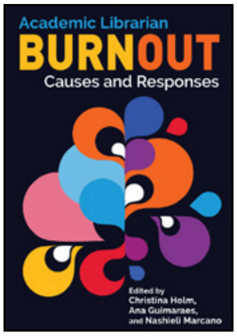
Works Cited

DeBoer, J. J. (1946, October). Teaching Critical Reading. *The Elementary English Review, 23*(6), 251–4.

Manarin, K., M. Carey, M. Rathburn, and G. Ryland. (2015). *Critical Reading in Higher Education: Academic Goals and Social Engagement.* Bloomington: Indiana University Press.

Academic Librarian Burnout: Causes and Responses. Christina Holm, Ana Guimaraes, and Nashieli Marcano, eds. Chicago, IL: ACRL, 2022. 370p. Paper, $98 (ISBN: 978-0-8389-4856-9).

Like other "helping" professions at this time in history, librarians live and work in a context of diminishing resources, vanishing support systems, challenges to our profession's values,



perpetual violence, and a lingering sense of doom due to continuous catastrophes and political instability. We are expected to continue to work and maintain normalcy while all of this happens around us, with a frequency sufficient to produce exhaustion and stress. Add to these factors ever-increasing workloads, constant role ambiguity, financial precarity, and the emotional labor required of professions like ours, and librarians are particularly prone to burnout. Are academic librarians unique in this regard? Not necessarily. That we have plenty of company should contribute to a greater sense of solidarity with all who are fatigued and overloaded by sagging systems. What we learn as we are responding to our own crises and strengthening our own networks is that we do have the power to empathize with and work toward improving conditions for all. Academic Librarian Burnout investigates the potential causes of the problem and works to identify strategies for interventions in this process.

Editors Christina Holm, Ana Guimaraes, and Nashieli Marcano have thoughtfully compiled a volume that examines the conditions that create, magnify, and potentially ease burnout among academic librarians. They call on those working in this field to challenge assumptions about our workload and levels of support, and to interrogate the systems that fail us. In highly personal testimonies, the editors encourage library workers to move past individual behaviors that uphold existing working conditions and lead to burnout. These include doing more with less and maintaining a culture that defers to teaching faculty. However, there is enough evidence to prove that the systems built around workers enable these issues--the budget cuts, the shrinking staff directories, and the ever-increasing number of services we aim to provide.

The phenomenon of burnout in academic libraries began appearing in library literature in the 1970s and 1980s as these institutions started experiencing economic scarcity and technological changes that sped up and expanded library work, factors that will be deeply familiar to contemporary academic library workers. In addition, libraries are continuously asked to offer additional functions to patrons without receiving support, financial or otherwise, to do so. This book builds on the existing literature and research and offers updated information addressing the COVID-19 pandemic, intensifying funding cuts, and the challenges posed to BIPOC library workers in academic libraries that are steeped in whiteness.

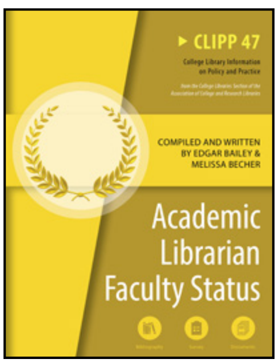
Multiple chapters discuss the inadequacy of individual solutions and the need for structural and systemic changes. Courtney Dean and Angel Diaz discuss the reliance on contingent labor in archives. Lora Del Rio, Juliet Kerico Gray, and Lis Pankl connect absent leadership, poor management, and continual downsizing to a culture of overwork. Courtney Stine and Sarah K. Kantor describe the additional expectations of scholarship and service for many academic librarians, adding fuel to the burnout fire.

Burnout is compounded by discriminatory treatment of people with conditions and identities that are already marginalized. Vivian Bynoe and Kay Coates write about the experiences of Black women librarians, particularly during pandemic-induced lockdown and simultaneous protests against police brutality, and the need to address inclusivity when mediating workplace stress. In her chapter about chronic illness and disability, Mary Snyder Broussard sheds light on ableism in workplaces and the ways that changes in environment can add to workplace stress, which can also cause flare-ups or worsen symptoms. Other chapters address challenges faced by academic librarians who are also parents and administrators attempting to hold on to feminist values in patriarchal institutions.

The second half of the book focuses on both individual and organizational solutions to create better working conditions. Carolyn M. Caffrey and Joanna Messer Kimmitt's chapter on their organizing efforts breathes new life into the reader and spreads hope with their description of collective action. Sarah Fancher provides practical advice for acting relationally when looking to improve conditions for all employees using radical empathy as a touchstone. Better onboarding and building transformational leadership models are also discussed.

Academic Librarian Burnout offers varying perspectives on burnout, but overwhelmingly these chapters speak of shared struggle and exhaustion. Academic librarians will likely recognize the experiences of workers on the brink in the unsustainable systems described in these pages, and they may find inspiration in the proposed individual and organizational responses to burnout. Though this book is specifically focused on academic libraries, it could benefit from additional context regarding the burnout that other professionals are also experiencing, and how they are responding to it. —*Joanna Gadsby, University of Maryland, Baltimore County*

Academic Librarian Faculty Status. Compiled and written by Edgar Bailey and Melissa Becher. Chicago, IL: Association of College and Research Libraries, 2022. 163 pp. Paperback, $52.00 (978-0-8389-3664-1)



The very concept of tenure is currently under fire across the nation as several states have proposed or passed legislation that severely weakens or eliminates tenure. Beyond tenure, faculty rights, including shared governance and academic freedom, are also under attack. Whether librarians should have faculty status, rank, or tenure has been controversial for decades, further complicated by these conditions in higher education. The topic is the focus of *Academic Librarian Faculty Status*, #47 in the CLIPP series, a publishing program under the auspices of the ACRL College Libraries Section that provides college and small university libraries with analysis and examples of library practices and procedures (vii).

This interesting and practical work was compiled and authored by Edgar Bailey, an instructor at the University of Rhode Island library school, and Melissa Becher, Associate Director of Research, Teaching, and Learning at American University Library. It presents the results of a survey of librarian status at small and medium-sized academic libraries and includes samples of policies and procedures related to librarian faculty status from several types of institutions.

The CLIPP survey was distributed to all 1,063 library directors with membership in ACRL. A low response rate prevented the results from being statistically significant or generalizable to all similarly sized libraries. However, the authors state that "the data…provide a useful indication of librarian status in a cohort that has not been widely studied in previous literature", i.e., small and medium-sized academic libraries (29). Readers should note that survey respondents were primarily from private institutions (133 private versus 38 public), contributing to the lack of generalizability.

Approximately 40 percent of this slim volume comprises the literature review, study results, and data analysis. The remaining pages document policies about librarian faculty status submitted by participating institutions. The volume lacks an index.

The extensive literature review has nearly 150 references, primarily from the last twenty years. The review covers the varying opinions about and attitudes toward faculty status for librarians; the availability of research support for tenure-stream librarians; national, regional, and state surveys about tenure and faculty status; eligibility for sabbaticals across institutions; and more. One valuable resource cited is the WordPress site *Academic Librarian Status* (https://academiclibrarianstatus.wordpress.com), created by Lewis (n.d.) and now maintained by author Melissa Becher. This website offers a list of academic institutions sorted by the professional status of their librarians. Some include links to their tenure and promotion documents.

Respondents were asked if any full-time librarians on their staff were tenure-eligible or had faculty status, followed by a series of questions about how their process matched the ACRL Standards for Faculty Status (https://www.ala.org/acrl/standards/standardsfaculty). The analysis and discussion section of the survey results is long and detailed, with graphs presenting the results for each question. Unfortunately, there is no abstract or conclusion section. A concise summary of the findings or conclusions would be helpful, as the data from individual questions is quite granular and difficult to synthesize. Notable findings include the following:

- Only 30 percent of the responding institutions reported employing tenure-eligible librarians.
- Tax status (public versus private) was a better predictor of whether librarians were tenure-eligible than student FTEs (33). Responses indicate that private institutions are much less likely to offer tenure to librarians; 102 of the 133 (77%) private institutions represented have no full-time librarians eligible for tenure, compared to 45 percent of public institutions.
- Of the institutions granting librarians faculty status, 28 percent reported a challenge to that status in the last twenty years (43). Respondents' comments indicate that these challenges tend to come from higher-level university administrators like the provost or a vice president. Thirty-two percent of participants from institutions where librarians are not faculty reported attempts to obtain faculty status in the last twenty years. In either case, the support of the teaching faculty is often the most significant factor influencing the outcome. However, "comments revealed that efforts to obtain or extend faculty status for librarians almost always originate with the library and fail most of the time" (44).

Policy documents are included from two private secular and four private religious institutions, alongside four public institutions. There is also a position paper supporting faculty appointments for librarians from an institution with the name redacted. The following elements appear in most of the documents:

- Detailed criteria for promotion, rank, or tenure
- Definitions of what activities are acceptable such as teaching, scholarship, service, and librarianship
- Descriptions of the evaluation process and the makeup of tenure and promotion committees
- Enumeration and definition of ranks
- What is considered the terminal degree, and whether an additional degree is required for promotion or tenure
- Ability to participate in shared governance
- Policies regarding eligibility for sabbaticals
- Impact of promotion or tenure on contract length, availability of a grievance process, academic freedom, and other issues
- Information about post-tenure review

Librarians researching scholarship on faculty status or tenure eligibility should find the literature review and data analysis informative. The promotion and tenure policies may greatly help anyone developing their own tenure policies or proposing that librarians gain faculty status or tenure eligibility at their institution. — *MaryAlice Wade, Fort Hays State University*