College & Research Libraries

CRL

November 2026 • Volume 87 • Number 6

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Association of College and Research Libraries

COLLEGE & RESEARCH LIBRARIES

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ISSN 0010-0870

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Editorial

Introducing *C&RL's* Managing Editors

Michelle Demeter

With the arrival of autumn and our new members of the *College & Research Libraries* Editorial Board, this feels like a fitting time to pause and reflect on the past year, as well as what lies ahead. In my inaugural editorial last September, I asked readers to bear with me as I took time to gather information and better understand how the journal was functioning. As I became more familiar with the journal's processes and idiosyncrasies, I identified a few key opportunities for immediate improvement, which the Board actively addressed throughout the year. These efforts led to a key structural recommendation to appoint two Managing Editors.

It is therefore my great pleasure to introduce and welcome *C&RL*'s newly appointed Managing Editors: Tessa Withorn and Matty Johnson. In their roles, Tessa and Matty will assist me in assigning incoming submissions, working with peer reviewers to ensure timely evaluations of manuscripts, and helping to facilitate editorial workflows and projects. Both candidates bring a range of research and editorial experience, as well as strong project management skills. Their accomplishments include published books and journal articles, equipping them with critical knowledge and understanding of diverse publishing formats and processes. I am confident their passion and drive will bring fresh perspectives to improving our workflows and operations as we work with the Editorial Board to move *C&RL* in new directions.

Tessa is the Science Librarian and an Assistant Professor at the University of Louisville, where she also serves as the Data Services Coordinator, focusing on research data management and open science. Although she is new to the *C&RL* Editorial Board, Tessa brings a range of experience as an author and a reviewer from other publications, which will provide a refreshing perspective on the journal. Tessa proposed ways that *C&RL* might consider and eventually incorporate various models of open scholarship, including open peer review, open data, and equitable publishing practices. During her interview, Tessa spoke extensively about exploring ways to increase the visibility of academic librarianship outside of the profession by seeking platforms for sharing our work as professionals through a form of public scholarship.

Matty is the Director of Research and Instruction at the University of South Florida, has served as *C&RL*'s Social Media Editor for the past three years, and will continue in this role with the added responsibilities of Managing Editor. Matty brings extensive methodological expertise due to their doctoral studies and personal research. Matty is eager to explore the motivations librarians have for publishing and how they impact the publishing field, as well as working toward improving transparency around *C&RL*'s publishing timelines and processes. Like Tessa, Matty is interested in exploring open peer review models, which aligns with goals shared by many Editorial Board members.

The decision to recruit managing editors grew out of my early observations as Editor-Designate, when I began to more fully appreciate the volume of work managed by former

Editor Kristen Totleben. It became clear that there was a need to develop a more sustainable model to ensure the journal's long-term success. Once I officially began my tenure as Editor, trying to keep pace with all of the journal's responsibilities felt like digging my way out of an avalanche with a plastic teaspoon. For context, *College & Research Libraries* received 295 submissions in 2025, accepting 68 for a 23% acceptance rate. To efficiently shepherd so many submissions through the system, I raised the issue with the Editorial Board, who supported expanding *C&RL*'s editorial structure.

In early Spring 2026, a working group identified responsibilities for a new editorial role and developed a position description. Then, throughout the summer, a search committee convened to interview candidates and select a Managing Editor. Given the strength of the candidate pool and the amount of work at hand, the committee decided to appoint two Managing Editors. I would like to thank Editorial Board members Adrian Ho, Teresa Schultz, and Megan Hodge for their contributions in successfully completing this project, as well as David Free, our ACRL liaison and Editor-in-Chief of *C&RL News*/Senior Communications and Membership Strategist, for promoting the role and coordinating the appointment process.

The appointment of Managing Editors is the most recent and most visible change implemented by the Editorial Board this past year, but it is only one of many changes underway within the journal's editorial leadership. *C&RL*'s Board largely functions as an advisory body, and this past year, members identified and addressed several areas for improvement. Now meeting monthly during the fall and spring semesters, the Editorial Board has more time to discuss and advance important projects. For instance, the Board's Peer Review Working Group offered numerous recommendations that have led to drafts of peer review guidelines and a revised review form, while also reopening conversations regarding the development of an open peer-review model. I look forward to working with Tessa, Matty, and the Editorial Board to bring these initiatives (and more) to fruition in the coming years.

Thus, while spring is traditionally celebrated as a season of renewal, this fall brings a crisp wind of transformation, signaling a fresh chapter and direction for *C&RL*. I look forward to building on the momentum of my first year as I onboard *C&RL*'s new editors and implement workflows that incorporate their expertise and experience. With our Managing Editors in place alongside a dedicated Editorial Board, the journal is well positioned to make meaningful progress on our existing and emerging initiatives.

Tag, You're It: How Metadata Practices Impact the Discoverability and Use of LibGuides

Stephanie M. Luke, Evie Cordell, Nathan Jeffery, Kate Meyrick, and Thea Soter*

This article discusses the impact that metadata has on the discoverability and usage of Springshare LibGuides at the University of Illinois Urbana-Champaign Library. Using robust linear regression analysis, the authors found that subjects and tags are essential for the discoverability of LibGuides. Guides with more subjects and high-quality tags consistently received greater usage, while the addition of low-quality tags has an overall negative effect on guide visits. These findings highlight the critical role of metadata in resource discovery. The article concludes by recommending the implementation of best practices for LibGuide metadata creation and maintenance. This includes the mandatory use of subjects and tags by guide creators and the standardization of spelling, capitalization, and punctuation in tag creation. The implementation of these practices will help to ensure that LibGuides function as effective, accessible tools for research and instruction.

Introduction

Springshare LibGuides are a popular content management system specifically designed for libraries and educational institutions. LibGuides allow librarians to create, organize, and share customizable resources that support research, learning, and teaching. LibGuides typically include curated materials such as databases, books, articles, websites, videos, and other resources. They aim to provide information on specific courses, subjects, and various research topics. LibGuides are simple to create, easy to use, and act as a central hub for information about the library and university. Additionally, they lower the barriers to sharing resources.

While LibGuides can be a powerful tool for sharing information, several challenges may impact their effectiveness. LibGuides are not static resources, and they require

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consistent maintenance as information can quickly become outdated. Proper maintenance is time-intensive and includes updating content, checking links, and ensuring that guides meet evolving accessibility standards. Other challenges include inconsistent quality of guides (in both content and design), insufficient or excessive volume of content, duplication of content, and issues of usability and accessibility (Kamela & Higgins, 2024).

The University of Illinois Urbana-Champaign Library (University Library) is located at a major R1 land-grant institution with multiple libraries throughout campus. The library employs approximately 400 staff, including tenured and tenure-track librarians, academic professionals, civil service employees, graduate students, and undergraduates. In 2023, librarians at the University Library began the process of developing a plan for a thorough review of the library's LibGuides. As of October 2024, when the authors undertook the work described in this article, the University Library had 82 unit accounts and 2,329 guides, including 1,154 published guides, 820 unpublished guides, and 355 private guides.

The review of LibGuides focused on various aspects of revision but also sought to determine the best use of limited resources, particularly the capacity of librarians to enact suggested changes. An area of interest for the authors (a metadata librarian, eLearning librarian, data scientist, and two MSLIS graduate students) was the use of metadata in LibGuides. This was a crucial part of the larger review of LibGuides at the University Library as metadata can affect the discoverability and use of these resources. Upon the initial review of the data from Springshare, the authors noticed that many guides lacked subjects and tags or that the quality of metadata was less than ideal. As a part of this large-scale review of guides, the authors designed and conducted an audit of LibGuide metadata to determine whether review and revision work on legacy guides should focus on improving metadata use or if effort would be better spent focusing on another dimension of improvement.

While past literature on the topic of LibGuide quality has focused primarily on usability testing of the content and appearance of guides (e.g., layout, organization, clutter, and accessibility), there is less research on exploring issues of discovery and access. Springshare's LibGuide platform functions primarily on full-text searching of guides. It also employs subjects and tags, which are designed to expand the discoverability of and access to these resources. In this article, the authors refer to subjects and tags collectively as "metadata," as these are additional, descriptive access points that creators employ to characterize the content of the guides and facilitate discovery. This article shares the findings of the metadata audit, which was designed to assess the use and quality of metadata in LibGuides at the University Library. The project evaluated two dimensions of guide metadata: first, the quantity of metadata and its effects on guide usage (as measured by the number of page views), and, second, the quality of metadata and how the content of tags might be improved to further facilitate discovery. The authors evaluated the quality of tags by reviewing and noting characteristics that would negatively affect their searchability. These characteristics pose a challenge for discoverability (i.e., the degree to which users can locate content in their research) and reuse (i.e., the extent to which tags can be replicated across resources) (Somerville et al., 2012; FAIR GO, 2016). The presence of those characteristics that negatively affected searchability and filtering indicated low-quality metadata. The absence of these characteristics indicated high-quality metadata.

This article describes the methodology of the audit, the statistical analysis of the gathered data, and the findings of this research. The authors conducted a statistical analysis using a robust linear regression model, which allowed them to determine relationships between

multiple explanatory variables and understand how these variables might impact guide usage. They determined that, overall, metadata quantity has a positive relationship to guide usage. In other words, guides with more subjects and high-quality tags tended to have more usage, measured by guide visits. In contrast, the use of low-quality tags has an overall negative effect on guide visits.

Through the evaluation of this data and a discussion of these findings, the authors argue that best practices for LibGuides should include guidelines for metadata use and reuse. Since adopting Springshare in 2007, the University Library has never established practices for the creation and use of metadata in its LibGuides. The findings of this audit and the statistical analysis of the gathered data clearly indicate that ensuring consistent use of quality metadata should be a priority for librarians creating and maintaining guides. This article further discusses the initiative to create these best practices and ensure their implementation across the University Library.

Literature Review

Studies have found that, despite the sheer quantity of LibGuides created by academic libraries, student engagement with these resources is low (Castro-Gessner et al., 2013; Burchfield & Possinger, 2023). Low student use may be the result of several factors, including usability (Dalton & Pan, 2014; Fagerheim et al., 2017), accessibility (Greene, 2020; Hopper, 2021), and discoverability (Sittler & Dobbs, 2016; Reeb & Gibbons, 2004) of LibGuides.

Research on Springshare's LibGuides has extensively explored the learning tool's usability affordances and limitations. The term "usability" has been used broadly to refer to vastly different aspects of use across studies (Neuhaus et al., 2021; Staley, 2007; Burchfield & Possinger, 2023; Almeida & Tidal, 2017; Sonsteby & DeJonghe, 2013; Ray, 2025; Chan et al., 2019; Conerton & Goldenstein, 2017; Bergstrom-Lynch, 2019; Pratt et al., 2004; Pittsley & Memmott, 2012). For instance, one study defines usability as navigation, finding that students prefer side navigation to top navigation and two columns of information (Thorngate & Hoden, 2017). Another study found that students defined usability to include how the information was relayed, preferring multimedia LibGuides and interactive content over plain text (Almeida & Tidal, 2017). Additionally, LibGuide literature has determined that consistency of guides across an institution is integral to student use (Alverson et al., 2015; Fritch & E. Pitts, 2016; Cox, 1996; Vileno, 2007; Sittler & Dobbs, 2016; Duncan et al., 2015). Consistency refers not only to the same color and font choices but also to consistent language use across the platform (Thorngate & Hoden, 2017; Fritch & Pitts, 2016).

Past research has found that students do not browse LibGuides intentionally but rather locate them through using course management systems, entering the guide address, or searching on the library website or through Google (Conrad & Stevens, 2019; Nielsen, 2001; Carey et al., 2020; Griffin & Taylor, 2018; Brush, 2022). As Brush (2022) writes, "To improve discoverability, all guides needed to include metadata like guide and page descriptions, subjects, tags, and 'friendly' URLs. ... These options had always been available in the LibGuides software, but many guide authors had ignored them because they were not thinking in terms of SEO" (p. 193). Springshare's tagging mechanism (in which a creator assigns subjects and tags) seems to be underutilized by guide creators (Hennesy & Adams, 2021; Brush, 2022). Much of library metadata practice has traditionally centered on providing a structured, taxonomic approach to organizing information through shared, community standards (Park, 2009; Park et al.,

2015; Riley, 2017; Zeng & Qin, 2020; Lubas et al., 2013). In contrast, LibGuide creators assign metadata with few (if any) guidelines about how to use tags, subjects, and descriptions, all of which may improve the discovery of these resources. Thus, LibGuide metadata functions more as a folksonomy than a metadata standard. Unlike defined metadata standards, which rely on consistent frameworks, folksonomies depend on user-generated descriptions (Noruzi, 2007; Lund & Hansen, 2011). While folksonomies offer a lower barrier method of metadata creation than traditional taxonomies, they present many challenges to search and discovery, including ambiguity, synonymy, and differences in granularity of terms (Bullard, 2018; Golder & Huberman, 2006; Trant, 2009).

Springshare Content Management System (CMS) provides a LibGuide that outlines a set of standards, best practices, and fundamental usability "ideas" for creating usable guides. The broader ideas are "less is more, fewer clicks, less text, readability, and consistency" (Springshare CMS, 2025). Although Springshare provides these examples of best practices for implementing its LibGuide software, libraries are not required to adopt them; rather, Springshare suggests that libraries use its examples as a template for making their own. Springshare's suggestions include web design elements like branding, color, text, font, and page design, as well as accessibility practices such as headings, hyperlinks, alternate text, textual description, captions, and documentation. Ideally, each library would create similar categories of best practices; however, the literature suggests that many libraries neither create their own set of best practices nor require the implementation of said best practices (Logan & Spence, 2021). Other studies have noted the problem of consistent rules and application of best practices (Logan & Spence, 2021; Fritch & Pitts, 2016; Del Bosque & Morris, 2021). Past literature has indicated that there is not a universal consensus on what best practices should be followed, which contributes to vastly different design practices across academic libraries.

Methodology

The authors began this project by gathering all University Library LibGuide data through Springshare. The authors collected data from August 2023 to October 2024. They chose these dates to include data for an entire academic year, including the summer semester. They also included the two months of the fall 2024 semester when they began planning the project. This period allowed them to capture data from various semesters and gain a complete understanding of how LibGuides were being utilized at their institution. The reports included statistics, general information (e.g., creation date, owner, etc.), status (i.e., published, unpublished, private), and metadata (i.e., subjects and tags). After running the reports, the authors merged the LibGuide statistics (i.e., usage stats and names of guides) with the information report (i.e., creation date, latest update, owner, type of guide, and name of guide). The merging of this information allowed the authors to compare salient data points and identify trends in guides and usage. Some of the data the authors considered was the number of guides, the age of guides, and the status (i.e., published, unpublished, or private).

The authors sought to determine both quantitative and qualitative relationships from this data. First, was there a relationship between the use of subjects and tags and the overall usage (defined as the number of user visits to guides)? Second, was there a relationship between the quality of tags and overall guide usage? The authors focused their quantitative analysis on published guides, meaning those guides that were available to the public. Of the 2,329 guides that existed at the time of analysis, 49.5% were published, leading to a total of

1,154 (N) guides. Notably, the number of guides fluctuates with the creation and deletion of guides, so this dataset represents a snapshot of one point in time; between the time when the data was analyzed and this manuscript was finished, approximately 400 guides had been deleted or significantly edited as part of a larger movement of ensuring the quality of guides and increasing their accessibility.

The authors also pulled data on the metadata (i.e., subjects and tags) used in the University Library's LibGuides. They first focused on data for the use of subjects across guides. Subjects are predetermined by LibGuide administrators and are meant to represent broad subject headings like history, African American studies, math, and global studies. LibGuide creators at the University Library are not required to choose any of the 73 subjects; however, they can assign one or more subjects to their guides. On the library's LibGuide landing page, guides are arranged by subject. Thus, if a creator does not assign a subject, the guide can only be discovered through searching.

The authors then focused on the data for tag use across guides. Like subjects, tags are not required for guide creation. In contrast to subjects, however, tags are creator-supplied and free-text rather than a controlled vocabulary set by administrators; thus, tags have more variation in their creation, use, and reuse. Guide creators add tags to improve searching and provide additional access points for keywords that may not appear in the body of the guide. The authors pulled data on the tags that appear across all guides and created a spreadsheet for the specific qualitative analysis of this metadata. For their analysis, they identified several key aspects to analyze and compiled the data into a spreadsheet (see Figure 1). To ensure the reliability of the data, two of the authors gathered and organized the data and two other authors reviewed the data separately and checked the results against each other. Any errors that were discovered were checked against the original data to ensure accuracy. Any disagreements between reviewers over the assignment of tag characteristics resulted in a separate review by the authors who originally organized the data.

The authors noted several characteristics of tags in their review. These included orphan tags, tags with duplicative content, tags that introduced additional characters that affected searchability, and tags with misspellings (see Table 1). The latter two of these data points—the introduction of additional characters and misspellings—were used to indicate "low-quality" metadata. While there is no single definition of what constitutes "quality metadata," Park (2009) writes that "Quality metadata reflect the degree to which the metadata in question perform the core bibliographic functions of discovery, use, provenance, currency, authentication, and administration" (p. 213). The first two of these aspects of quality—discovery and use—are applicable to LibGuide subjects and tags. Quality metadata is important to the discussion of all digital objects, including LibGuides, because, as Luke et al. (2024) note, metadata "is the primary means through which digital objects are discovered... [and] without quality metadata,

ID	Name	Count	Orphans	Duplicative	Characters	Misspellings
256321	disertations	1	☐	☑	☐	☑
256195	dissertation	2	☐	☑	☐	☐
319955	dissertations	4	☐	☑	☐	☐
256270	dissertations_and_theses	2	☐	☑	☑	☐

Figure 1. A Snapshot of the Spreadsheet the Authors Used to Evaluate the LibGuide Tags.

TABLE 1
Examples of Common Tagging Issues in Guides

Tag Issue	Definition	Example
Orphan tags	Tags that appear in zero active public guides or are remnants from previously deleted guides.	Bibliometrics
Duplicative content	Tags that are variations that seek to convey the same content.	language learning language_learning language learnings
Introduction of additional characters*	Tags that introduce characters that affect their searchability.	asian_american_studies (use of underscores) anti-discrimination (use of hyphens) Asia-Pacific; Japanese Studies; History (use of semicolons) hero's journey (rendering error)
Misspellings*	Tags that contain misspellings.	coronoa virus

Note. Asterisks (*) indicate those tag issues that the authors defined as low-quality tags.

digital objects are lost in a sea of content" (p. 149). As this is the first study (that the authors are aware of) that investigates LibGuide metadata in this way, it is not possible to compare the validity of the current approach to existing measures of metadata quality in these resources. However, future analyses could investigate the effect of duplicative tags or other dimensions of metadata quality on guide usage.

The authors explored the effects of metadata quality on LibGuide usage in two ways. First, by including "high-quality" and "low-quality" tags separately in a linear regression model, they sought to determine if there was a difference in the overall usage of guides based upon the number of high-quality tags (defined as those tags that did not introduce additional characters or have misspellings) versus the number of low-quality tags (defined as tags with these issues). Second, as previously mentioned, the authors performed a qualitative analysis of tags to identify the problems that could affect their searchability and reuse across guides (see Figure 1; Table 1).

The authors used this data first to run an ordinary least squares (OLS) regression model to estimate the effects of type, subject, and tags on the usage of a LibGuide. The model can be expressed by the following equation:

$$Usage = \beta_0 + \beta_1 TypeSubject + \beta_2 TypeCourse + \beta_3 Subjects + \beta_4 HQTags + \beta_5 LQTags + \epsilon$$

Where β_0 is the intercept, the β_i coefficients indicate the effects of each of our predictor variables on the usage of a guide, and ϵ is the error term. In this model, the authors collapsed type into three categories (subject, course, and other) expressed by the two dummy variables, *TypeSubject* and *TypeCourse*. Tags are split into "high-quality" tags (*HQTags*) and "low-quality" tags (*LQTags*) based on the authors' previous discussion of tag quality.

After running the OLS regression, however, the authors found that this regression did not fit the data especially well. Particularly, the overall F-test was nonsignificant, and the diagnostic plots showed that outliers strongly influenced the model estimates. Therefore, they then ran a robust regression on the same variables using Tukey's bisquare estimation, which

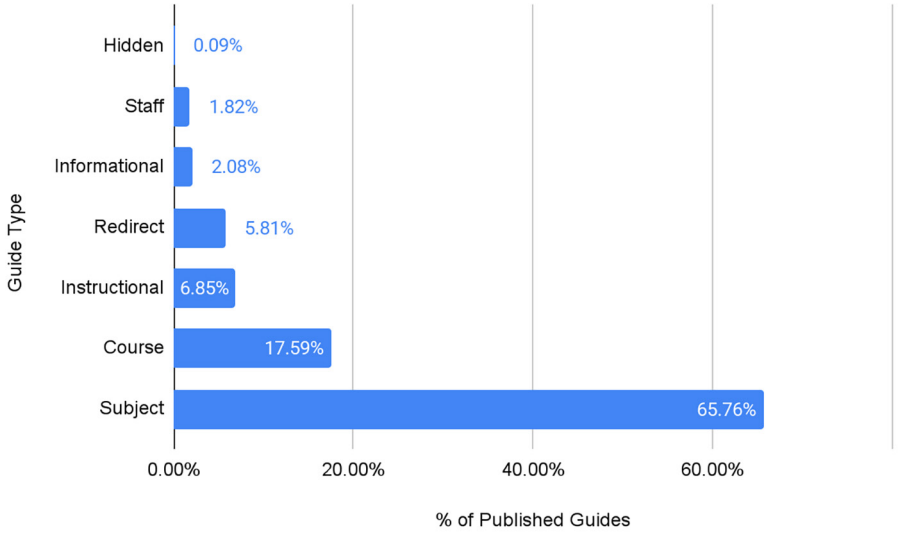


Figure 2. Prevalence of Guide Types Among Published Guides.

decreases the influence of outliers and corrects for the non-normality of the data. The results section includes a discussion of both the OLS regression and the robust regression.

Results

The authors first determined the prevalence of each type of guide (see Figure 2). This was an important step in the statistical analysis because the findings could be used to set priorities for the revision of existing guides, as there are limited resources in the University Library to conduct this work. The LibGuides at the University Library are one of seven types: hidden, staff, informational, redirect, instructional, course, and subject. Hidden guides (0.09% of all guides) are published guides that have been hidden from search and are only available if a user has the URL. Staff guides (1.82%) are intended to be used by University Library staff and often detail internal workflows. Informational guides (2.08%) provide information on an event, specifically exhibits, workshops, conferences, panels, etc. Redirect guides (5.81%) have no content and redirect the user to another guide or webpage. Instructional guides (6.85%) provide instructional frameworks for a specific topic. Course guides (17.59%) are designed for a course that is taught at the University. Finally, subject guides (65.76%) are a general list of resources centering on a specific subject or topic.

In addition to guide type, the authors reviewed tag usage. The limitations of the Springshare report system only allowed them to review guides that had tags. In their review of the tags, the authors noted that there were 2,808 unique tags used 6,032 times across all guides. The average number of times a tag was used was 2.14, but the median and mode of tag use were both one (see Table 2). The outlier of tag usage is "history," which appears across 159 guides.

The authors also made note of tag reuse. Reuse of metadata is important as it facilitates greater discoverability and access across resources. While there is flexibility in creating tags, they function best when

TABLE 2
Data on Tag Use and Reuse

Data Point	Number
Number of unique tags	2,808
Number of times tags are used	6,032
Average times a tag is used	2.14
Median number of tags usage	1
Mode number of tags usage	1

they are reused across multiple guides. The data indicates that creators are largely not reusing tags or are using tags that are similar but not identical. Of the 2,808 unique tags used across all guides, 9% are orphan tags used zero times (likely from deleted guides), 59% of tags are used only one time, 29% of tags are used between two and nine times, and 3% of tags are used 10 or more times.

TABLE 3
Examples of Tags with Duplicative Content

Term 1	Term 2	Term 3
Arms Control	brain_injury	consumer
arms control	traumatic_brain_injury	consumer information
arms_control	ABI	consumerism
	Acquired brain injury	consumers

Because tags are uncontrolled, creators enter similar phrasing into the system, which renders the tags unique. In reviewing tag metadata, the authors noted duplicative tags, where the definition or content of the tag was similar but the tag was phrased differently by creators. The authors found that 919 tags, or 32.7% of all tags, had duplicative content. Table 3 highlights terms that are similar in content but appear as different tags across guides. This has an impact on tag reuse across guides, as duplicative content affects the searchability of the tag and the ability of these tags to be faceted and indexed in the system.

Two of the variables the authors included in the regression analysis related to the quality of tags: misspellings and the introduction of additional characters. The presence of either of these issues in tags characterized the tag as "low-quality." The authors discovered 24 tags included misspellings (e.g., coronoa virus, research proprosal, muisic, and sholarly support). They also discovered that 693 tags introduced additional characters (e.g., hyphens, underscores, ampersands, rendering errors, and semicolons). Thus, more than 25% of all tags were "low-quality," a significant number that could affect the searchability of these tags and the discoverability of their associated guides. The presence of these quality issues also affects the reuse of tags across guides. For instance, if a user selects a tag "arms control," the tags "arms_control," "arms-control," and the misspelled "amrs control" may not appear as a search return. Furthermore, the tags will facet differently in the "filter by tag" feature of Springshare's search system.

Table 4 presents the descriptive statistics for the main variables of interest. Type is described separately in Figure 2.

The presence of outliers, or a few LibGuides that differed significantly from the majority of other LibGuides, had a significant effect on the means and standard deviations of all variables in the model. For all variables in Table 4, the standard deviations are larger than the mean, and the mean is noticeably greater than the median. Even before running the regression model, these descriptive statistics alerted the authors to possible violations of the core assumptions of linear regression, such as the normality of residuals.

TABLE 4
Descriptive Statistics for Variables in the Regression Analysis

Variable	Mean	SD	Median	Min	Max
Usage	1,546.74	15,029.88	272.5	0	498,051
Subjects	1.16	1.69	1	0	30
HQ Tags	2.69	3.27	2	0	37
LQ Tags	0.71	1.34	0	0	10

After the authors ran the linear regression, diagnostic plots (see Figure 3) confirmed that the outliers had a disproportionate effect on the regression estimates. Specifically, all three plots identified the "Anime and Manga" LibGuide as an outlier, and the Cook's distance plot also identified the "Finding Images" LibGuide as an outlier (N.B. In the plots in Figure 3, "Anime and Manga" is the point marked "5" because it was the fifth row in our dataset; "Finding Images" is the point marked "166"). The "Anime and Manga" guide, which has 498,051 views and zero tags and is listed in six subjects, is a notable outlier as this topic is popular. Users may also use the guide relatively easily through subject and full-text search as this is the only guide on this topic on the University Library LibGuides platform. Moreover, the guide seems to garner significant traffic from Google, as it is the first result in a search using the terms "library anime manga." The "Finding Images" guide, which has 1,392 views and 11 tags and is listed in 30 subjects, seems to be receiving significant traffic because it includes the highest number of subjects across all the University Library's guides, approximately 40% of the 73 choices of subjects. Both are legitimate data points that should not be omitted from the dataset, but they should not have such a strong effect on the results.

To better handle the outliers, the authors then ran a robust regression with Tukey's bisquare estimation, which weights observations to lessen the influence of outliers without excluding them entirely. This approach reduces the influence of observations that fall far

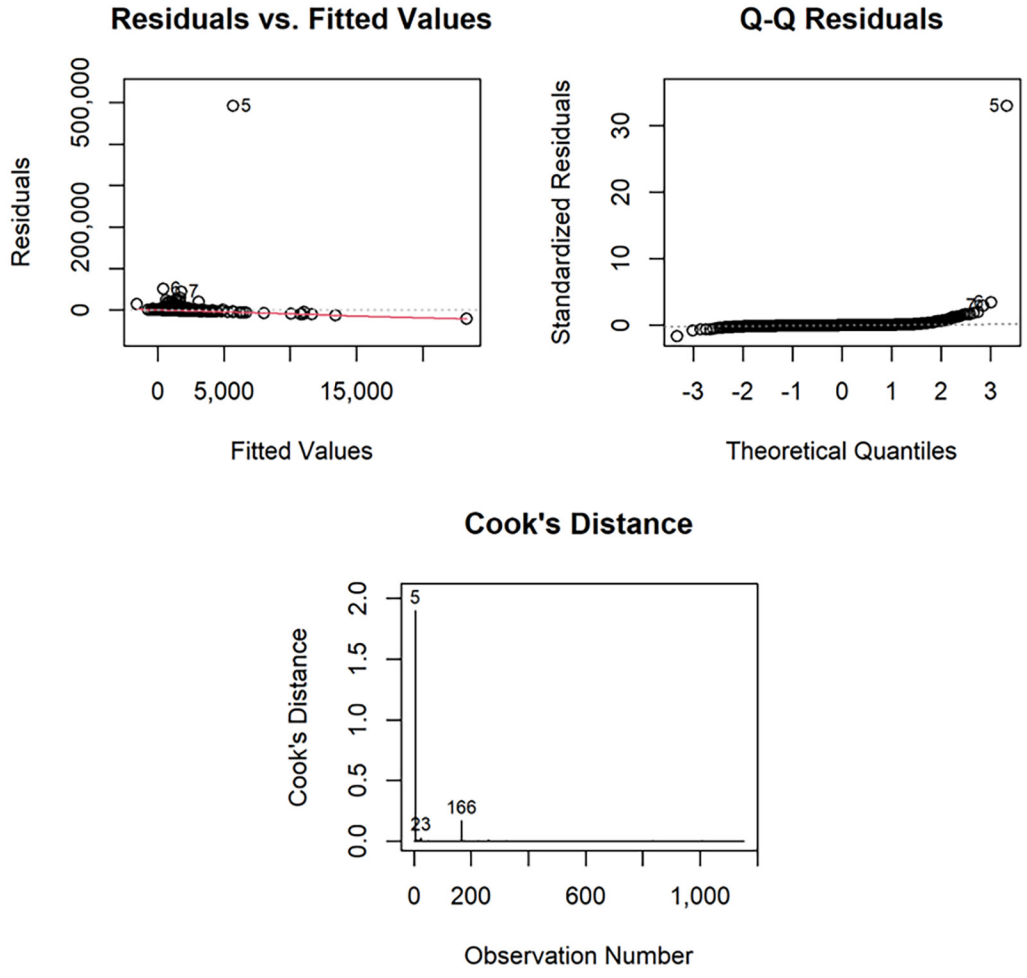


Figure 3. OLS Regression Diagnostic Plots.

TABLE 5
OLS and Robust Regression Results for LibGuide Usage

Variable	OLS Estimate (SE)	Robust Estimate (SE)
Type	–	–
Subject	86.07 (1216.26)	167.77*** (19.96)
Course	-953.22 (1520.43)	64.91** (21.58)
Subjects	769.36** (259.65)	36.75*** (4.53)
Tags	–	–
High quality	-104.44 (140.64)	13.15** (4.27)
Low quality	44.96 (335.45)	-15.34** (5.23)
Observations	1,154	1,154
Adjusted R-squared	0.004	0.185
Test statistic[†]	1.832	180.59***

***p <0.01, **p <0.05, *p <0.1
[†]The OLS regression uses an F statistic; the robust regression uses a chi-squared statistic.

outside the range of most data points and corrects for the non-normality of the data. The robust regression was conducted using the robustbase package in R, which provides appropriate standard errors and significance tests for this method. The robust estimates are provided alongside the OLS estimates in Table 5, and the R code is included in the Appendix.

The OLS regression was not significant overall ($F_{5,1148}$=1.83, p = 0.104), likely due to the outliers discussed above. In other words, the information provided by a LibGuide's metadata did *not* make it possible to predict the usage of that LibGuide any more accurately than could be done using just the mean value of LibGuide usage.

In contrast, the robust regression model was significant overall (χ^2_5 = 180.59, $p < 0.001$), meaning that this model fit the data well. Moreover, all variables in the robust model were significant predictors of LibGuide usage, and all variables except LQTags had positive coefficients, indicating that higher quantities of metadata were associated with more LibGuide usage. When looking at the type of a LibGuide, "subject" and "course" type LibGuides both had higher usage on average than other types of LibGuides.

In the robust model, the coefficient for subjects was 36.75, indicating that adding a subject to a LibGuide is predicted to increase the usage of that guide by roughly 37 views. For tags, each additional high-quality tag was predicted to increase the usage of a guide by 13.15 views, whereas adding a low-quality tag was predicted to decrease the usage by 15.34 views. While unstandardized coefficients in a regression model cannot normally be compared directly, the amount of time it takes to add a subject is comparable to the amount of time it takes to add a tag. Therefore, where practical, adding subjects to LibGuides is predicted to have a larger impact than adding tags.

Discussion

In analyzing guide metadata and usage, the authors discovered that LibGuide creators do not always add metadata to guides or that they format the metadata in a way that does not optimize the searchability of these terms; both are factors that affect how easily these resources can be discovered. Creators are also inconsistently using subjects and tags, which

has a notable impact on the discoverability of guides, sometimes making them difficult to find. While LibGuides are a valuable resource, they are only effective if users can locate them.

The findings of the robust regression model (which fit the data better) supported the authors' hypothesis that a higher quantity of metadata would lead to higher LibGuide usage. As previously mentioned, the robust regression model found that the addition of a subject resulted in an average of 36.75 more views of a guide, while the addition of a high-quality tag resulted in an average of 13.15 more views. In consideration of the limited resources of most libraries, librarians working with LibGuides may want to prioritize remediating subject usage in their guides. This can be accomplished by reviewing existing guides and adding one or more relevant subjects. The addition of subjects is significant to discovery, as guides are most often sorted by subject on the main LibGuides page. This creates notable access points for guides and guides without subjects are discoverable only through search.

Based on the findings of the robust regression analysis, the quality of tags also affected guide usage. As previously mentioned, the addition of a high-quality tag resulted in, on average, an increase of 13.15 guide views. The addition of a low-quality tag had the opposite effect, resulting in, on average, 15.34 fewer guide views. Both results were statistically significant and indicate the importance of considerations of metadata quality in addition to metadata quantity. If a low-quality tag were removed and replaced with a high-quality tag, the result would be an estimated increase of 28.49 views, which is closer to, but still less impactful than, adding a subject. If a library has to prioritize adding subjects or tags, the data suggests that remediating subjects will have a greater effect overall and thus should be addressed first. The authors suggest that librarians first prioritize formalizing workflows for tag use in new guide creation and then later focus on returning to existing guides and remediating and expanding the use of tags.

The authors did an extensive evaluation of how the unique rendering of tags affects their searchability. For misspelled tags, unless a user also misspells a term in their search, these will return zero search results because of the limitations of Springshare's discovery system and the lack of fuzzy searching (or approximate string matching), a search technique that will return results for concepts similar but not exact to a search query (Murty & Biswas, 2004). As mentioned, the presence of additional characters can affect the searchability of the tag as well as its reuse across guides. While two tags may contain the same word, the introduction of additional characters affects the search returns for the phrase. Furthermore, tags with additional characters facet differently in the "filter by tag" feature of Springshare's search features. From communication with Springshare, the authors also learned that hyphens function differently in searches than underscores or spaces. In searching, hyphens function as the Boolean operator "not." Thus, the creator of a guide may input the tag for the course Biology 201 as "biology-201," but searching this exact hyphenated term on the platform will remove all references to 201 from the results.

This study highlights the need for future research that gauges the effect on guide usage of revising low-quality tags to make them high-quality; however, the work of remediating tags is much more time-intensive than subject remediation. The limitations of Springshare's system make the large-scale cleanup of tags challenging. Batch editing tags would allow the authors to make these changes, but this function is currently limited. Batch editing could also assist in the merging of duplicative tags, which may also have a positive impact on the reuse

of tags across guides. The authors can currently only edit tags either through the editing of individual guides or through remediating tag by tag. In the case of the latter, however, many edits, such as merging tags and removing additional characters like hyphens and underscores, were not allowed by the system. The authors intend to request additional search functionality in the Springshare platform. Springshare's lack of fuzzy searching, advanced searching, and controlled vocabularies diminish the discoverability of guides.

While LibGuides are often among the most used and extensive forward-facing publications for a library, there is a lack of consistent peer review in their development (Logan & Spence, 2021). The results of this analysis show that the lack of shared best practices in creating LibGuides metadata is a significant obstacle to their discovery. These issues underscore the need for establishing best practices in metadata creation and providing training for guide creators on optimal subject and tag use. The LibGuide team housed within the Teaching, Learning, and Academic Support (TLAS) unit is responsible for LibGuide maintenance and training at the University Library. Based on the findings of this metadata analysis, the team is developing a comprehensive plan to improve LibGuide organization and discoverability. The TLAS unit will review and revise its existing best practices and current LibGuide instruction workshops. The unit is also planning to collaborate with the metadata librarian to create standardized metadata requirements for all new guides, including mandatory use of subjects and tags, along with consistent capitalization and punctuation rules. These standards will help reduce duplicative content, encourage tag reuse, and enhance the discoverability of similar guides across the library's collection.

To implement these changes across the library, the LibGuide team plans to establish a peer-review process for guides and will implement the publishing workflow feature in Springshare. The team is also developing an accessibility and quality control checklist that all guides will need to meet before they can be published. When the publishing workflow feature in Springshare is activated, all unpublished guides are sent to designated reviewers before they are published. Reviewers will assess the guides to ensure they meet each of the requirements. If all the requirements are met, then the guide will be published. If they are not, the guides are sent back to the creator with a detailed description of what needs to be corrected for publication.

Setting up the peer review process will not only improve metadata and increase the discoverability of LibGuides but will also help meet recently expanded Title II requirements and updated web content accessibility guidelines (W3C, 2024; University of Illinois Urbana Champaign Office of the Provost, 2024). Compliance with these guidelines will influence best practices for creating and revising LibGuides. The TLAS unit will collaborate with library departments to revise and update existing guides. This process will involve addressing issues related to subject and tag usage. These efforts will ensure that future guides comply with all Title II requirements while also improving their discoverability.

Conclusion

While metadata in LibGuides may seem like a minor consideration, it plays a significant role in guide discoverability. By creating and implementing best practices around subject use and tagging, libraries can ensure that users discover relevant resources when searching their websites. Moving forward, the authors intend to establish clear guidelines for metadata practices, including developing a database and integrating it into LibGuide instruction sessions.

Providing this will ensure that LibGuide creators are consistent in their naming practices. Future research will assess the impact of these improvements through user testing.

The authors also found LibGuides data difficult to manage because they are not static. As previously mentioned, the LibGuides platform at the University of Illinois Urbana-Champaign Library is constantly changing, with multiple librarians across 82 departmental accounts adding, deleting, and editing guides at any time. While the data in this article was collected in October 2024, there has since been a focused effort to review existing LibGuides in preparation for a large-scale Title II review for compliance. As a result, about 400 guides have been deleted or merged with others. The authors plan to gather data on LibGuides before starting both the formal work for accessibility compliance and the implementation of best practices for LibGuide creation that are currently under review.

The authors recognize that these findings are specific to their institution. Future research could involve analyzing these variables using data from other universities to see if their results are consistent elsewhere. They have included an Appendix, which they used for data analysis, and encourage others to explore this topic as well.

Roles from CRediT

Stephanie M. Luke: conceptualization, data curation, investigation, methodology, formal analysis, writing - original draft preparation, writing - reviewing and editing. Evie Cordell: conceptualization, data curation, investigation, methodology, formal analysis, writing - original draft preparation, writing - reviewing and editing. Nathan Jeffrey: methodology, formal analysis, writing - reviewing and editing. Kate Meyrick: data curation. Thea Soter: data curation.

References

Almeida, N., & Tidal, J. (2017). Mixed methods not mixed messages: Improving LibGuides with student usability data. *Evidence-Based Library and Information Practice, 12*(4): 62–77. https://doi.org/10.18438/B8CD4T

Alverson, J., Schwartz, J., Brunskill, A., & Lefager, J. (2015). Creating audience and environment-friendly research guides: Findings from a user study. *Association of College and Research Libraries 2015 Conference*, 125–133. http://hdl.handle.net/11213/17841

Bergstrom-Lynch, Y. (2019). LibGuides by design: Using instructional design principles and user-centered studies to develop best practices. *Public Services Quarterly, 15*(3), 205–223. https://doi.org/10.1080/15228959.2019.1632245

Bullard, J. (2018). Curated folksonomies: Three implementations of structure through human judgment. *Knowledge Organization, 45*(8), 643–652. https://doi.org/10.5771/0943-7444-2018-8-643

Burchfield, J., & Possinger, M. (2023). Managing your library's LibGuides: Conducting a usability study to determine student preference for LibGuide design. *Information Technology & Libraries, 42*(4), 1–18. https://doi.org/10.5860/ital.v42i4.16473

Brush, D. (2022). Case study: Does following best practices increase LibGuides usage? *Journal of Web Librarianship, 16*(4), 189–199. https://doi.org/10.1080/19322909.2022.2112798

Castro-Gessner, G., Wilcox, W., & Chandler, A. (2013). Hidden patterns of LibGuides usage: Another facet of usability.

Carey, J., Pathak, A., & Johnson, S. C. (2020). Use, perceptions, and awareness of LibGuides among undergraduate and graduate health professions students. *Evidence Based Library and Information Practice*, *15*(3), 157–172. https://doi.org/10.18438/eblip29653

Conerton, K., & Goldenstein, C. (2017). Making LibGuides work: Student interviews and usability tests. *Internet Reference Services Quarterly, 22*(1), 43–54. https://doi.org/10.1080/10875301.2017.1290002

Conrad, S., & Stevens, C, (2019). 'Am I on the library website?': A LibGuides usability study. *Information Technology and Libraries, 38*(3): 49–81. https://doi.org/10.6017/ital.v38i3.10977

Cox, A. (1996). Hypermedia library guides for academic libraries on the world wide web. *Program, 30*(1), 39–50. https://doi.org/10.1108/eb047216

Dalton, M., & Pan, R. (2014). Snakes or ladders? Evaluating a LibGuides pilot at UCD Library. *The Journal of Academic Librarianship*, *40*(5), 515–520. https://doi.org/10.1016/j.acalib.2014.05.006

Del Bosque, D., & Morris, S. E. (2021). LibGuide standards: Loose regulations and lax enforcement. *The Reference Librarian, 62*(1), 1–22. https://doi.org/10.1080/02763877.2020.1862022

Duncan, V., Lucky, S., & McLean, J. (2015). Implementing LibGuides 2: An academic case study. *Journal of Electronic Resources Librarianship, 27*(4), 248–258. https://doi.org/10.1080/1941126X.2015.1092351

Fagerheim, B., Lundstrom, K., Davis, E., & Cochran, D. (2017). Extending our reach: Automatic integration of course and subject guides. *RUSQ: A Journal of Reference and User Experience*, *56*(3), Article 3. https://doi.org/10.5860/rusq.56n3.180

Fritch, M., & Pitts, J. E. (2016). Adding bite to the bark: Using LibGuides2 migration as impetus to introduce strong content standards. *Journal of Electronic Resources Librarianship, 28*(3), 159–171. https://doi.org/10.1080/1941126X.2016.1200926

GO FAIR (2016). Fair Principles. https://www.go-fair.org/fair-principles

Golder, S. A., & Huberman, B. A. (2006). Usage patterns of collaborative tagging systems. *Journal of Information Science, 32*(2), 198–208. https://doi.org/10.1177/0165551506062337

Greene, K. (2020). Accessibility nuts and bolts: A case study of how a health sciences library boosted its LibGuide accessibility score from 60% to 96%. *Serials Review*, *46*(2), 125–136. https://doi.org/10.1080/00987913.2020.1782628

Griffin, M., & Taylor, T. I. (2018). Employing analytics to guide a data-driven review of LibGuides. *Journal of Web Librarianship, 12*(3), 147–159. https://doi.org/10.1080/19322909.2018.1487191

Hennesy, C., & Adams, A. L. (2021). Measuring actual practices: A computational analysis of LibGuides in academic libraries. *Journal of Web Librarianship, 15*(4): 219–242. https://doi.org/10.1080/19322909.2021.1964014

Hopper, T. L. (2021). Accessibility and LibGuides in academic libraries. *The Southeastern Librarian*, *68*(4). https://doi.org/10.62915/0038-3686.1904

Kamela, M., & Higgins, A. (2024) Tips and trends: Optimize your guides: Creating and maintaining user-friendly LibGuides. ACRL's Instruction Section Website. https://acrl.ala.org/IS/tips-and-trends-optimize-your-guides-creating-and-maintaining-user-friendly-libguides

Logan, J., & Spence, M. (2021). Content strategy in LibGuides: An exploratory study. *The Journal of Academic Librarianship, 47*(1), 102282. https://doi.org/10.1016/j.acalib.2020.102282

Lubas R., Jackson A., & Schneider I. (2013). *The metadata manual: A practical handbook*. Chandos Publishing.

Luke, S. M., Han, M.-J., & Stratton, T. (2024). Changes in digital collections and their metadata: A longitudinal study of UIUC digital library. *Journal of Library Metadata, 24*(3), 147–164. https://doi.org/10.1080/19386389.2024.2338015

Lund, W. B., & Hansen, C. (2011). You can lead them to water, but you can't make them drink: Using crowd sourcing to lead library patrons to extended library services relevant to their search criteria. *ACRL Conference Proceedings*, 504–512.

Murty, S. G. K., & Biswas, R. N. (2004). A fuzzy logic based search technique for digital libraries. *DESIDOC Bulletin of Information Technology, 24*(6), 3–10. https://doi.org/10.14429/dbit.24.6.3640

Nielsen, J. (2001). *Search: Visible and simple*. Jakob Nielsen's Alertbox.

Neuhaus, C., Cox, A., Gruber, A. M., Kelly, J., Koh, H., Bowling, C., & Bunz, G. (2021). Ubiquitous LibGuides: Variations in presence, production, application, and convention. *Journal of Web Librarianship*, *15*(3), 107–127. https://doi.org/10.1080/19322909.2021.1946457

Park, J. R. (2009). Metadata quality in digital repositories: A survey of the current state of the art. *Cataloging & Classification Quarterly, 47*(3–4), 213–228. https://doi.org/10.1080/01639370902737240

Park, J. R., Brenza, A., & Lu, C. (2015). A comparative analysis of metadata best practices and guidelines: Issues and implications. *International Journal of Metadata, Semantics and Ontologies*, *10*(4), 240–260. https://doi.org/10.1504/IJMSO.2015.074751

Pittsley, K. A., & Memmott, S. (2012). Improving independent student navigation of complex educational web sites: An analysis of two navigation design changes in LibGuides. *Information Technology and Libraries*, *31*(3), Article 3. https://doi.org/10.6017/ital.v31i3.1880

Pratt, J. A., Mills, R. J., & Kim, Y. (2004). The effects of navigational orientation and user experience on user task efficiency and frustration levels. *The Journal of Computer Information Systems*, *44*(4), 93–100.

Ray, T. (2025). Usability, visibility, and style: LibGuides usability testing to support students' needs. *The Southeastern Librarian, 72*(4). https://doi.org/10.62915/0038-3686.2108

Reeb, B., & Gibbons, S. (2004). Students, librarians, and subject guides: Improving a poor rate of return. *portal: Libraries and the Academy*, *4*(1), 123–130.

Riley, J. (2017). *Understanding metadata*. Washington DC, United States: National Information Standards Organization. http://www.niso.org/publications/press/UnderstandingMetadata.pdf

Sittler, R. L., & Dobbs, A. W. (2016) *Innovative LibGuides applications: Real world examples*. Rowman & Littlefield.

Somerville, M. M., Schader, B. J., & Sack, J. (2012) Improving the discoverability of scholarly content in the twenty-first century: Collaboration opportunities for librarians, publishers, and vendors, A SAGE White Paper. SAGE Publications Ltd.

Sonsteby, A., & DeJonghe, J. (2013). Usability testing, user-centered design, and LibGuides subject guides: A case study. *Journal of Web Librarianship, 7*(1), 83–94. https://doi.org/10.1080/19322909.2013.747366

Staley, S. M. (2007). Academic subject guides: A case study of use at San José State University. *College & Research Libraries, 68*(2), Article 2. https://doi.org/10.5860/crl.68.2.119

Thorngate, A., & Hoden, A. (2017) Exploratory usability testing of user interface options in LibGuides 2. *College & Research Libraries, 78*(6). https://doi.org/10.5860/crl.78.6.844

Trant, J. (2009). Studying social tagging and folksonomy: A review and framework. *Journal of Digital Information, 10*(1), 1–44.

University of Illinois Urbana Champaign Office of the Provost. (2024). Digital Accessibility and Excellence Steering Committee. https://provost.illinois.edu/about/committees/education-2/digital-accessibility-and-excellence-advisory-committee

Vileno, L. (2007). From paper to electronic, the evolution of pathfinders: A review of the literature. *Reference Services Review, 35*(3), 434–451. https://doi.org/10.1108/00907320710774300

W3C. (2024). Web content accessibility guidelines (WCAG) 2.2. https://www.w3.org/TR/2024/REC-WCAG22-20241212

Zeng, M. L., & Qin, J. (2020). *Metadata*. American Library Association.

Appendix

R code

```
# Load R libraries
library(ggplot2)
library(dplyr)
library(stringr)
# Load the data ————————-
libguides <- readxl::read_excel(
 'Libguide Metadata Spreadsheet.xlsx'
)
tags <- readr::read_tsv(
 "Libguides Tags Redundancies.tsv",
)

# Data cleaning ————————
## for Type, compare 'Subject' and 'Course' to all other types
libguides$TypeSubject <- libguides$Type == 'Subject'
libguides$TypeCourse <- libguides$Type == 'Course'
## for `tags` data: filter out Orphan, create 'Low' and 'High' quality tag categories
tagsdata <- tags |>
 filter(Orphan == FALSE)
tagsdata$Quality <- if_else(
 tagsdata$Characters | tagsdata$Misspellings,
 'Low',
 'High',
 missing = NA
)
## remove whitespace
tagsdata$Name <- str_squish(tagsdata$Name)
## use tags data to classify the 'Tag Names' column in libguides data
## into 'High Quality' and 'Low Quality' tags
## initialize new variables
libguides$LowQualityTags <- 0
libguides$HighQualityTags <- 0
## Split the 'Tag Names' field into separate entries and remove whitespace
libguides$TagNameList <- str_split(libguides$`Tag Names`, ', ')
libguides$TagNameList <- purrr::map(libguides$TagNameList, ~purrr::map_chr(.x,
str_squish))
## Loop through the 'tagsdata' table.
## (note: this loop takes ~1 min to run)
for (tag in 1:nrow(tagsdata)) {
 # For each tag in `tagsdata`, count the entries in `Tag Names` that match
 matches <- purrr::map_vec(
  libguides$TagNameList,
  ~sum(
   as.numeric(
    str_equal(.x, tagsdata$Name[tag])
   )
  )
 )
```

```
 # set NA's to 0 for easier addition
 matches[is.na(matches)] <- 0
 # Add the matches to LQ tags
 if (tagsdata$Quality[tag] == "Low") {
  libguides$LowQualityTags <- libguides$LowQualityTags + matches
 }
}
# all other tags are defined as high quality
libguides$HighQualityTags = libguides$Tags - libguides$LowQualityTags

# Exploring the data ———————-
## Descriptive stats
psych::describe(libguides$Usage, fast = TRUE)
psych::describe(libguides$Subjects, fast = TRUE)
psych::describe(libguides$HighQualityTags, fast = TRUE)
psych::describe(libguides$LowQualityTags, fast = TRUE)
table(libguides$Type)
## Bar chart for Type ——
libguides |>
 count(Type) |>
 # Calculate percent
 mutate(Percent = round(n / sum(n) * 100, 2)) |>
 # Bar chart
ggplot(
 aes(x = Percent, y = Type, fill = Type)
) +
 geom_col() +
 geom_text(
  aes(x = Percent / 2 + 2, label = paste0(Percent, '%')
  )
 ) +
 theme_minimal() +
 scale_x_continuous(labels = ~scales::percent(.x, scale = 1)) +
 scale_color_discrete() +
 labs(x = "", y = "") +
 theme(
  legend.position = "none",
  panel.grid.minor = element_blank(),
  panel.grid.major.y = element_blank(),
 )
ggsave(
 "types-of-libguides.png",
 width = 6,
 height = 4,
 units = "in"
)

# Regression ———————-
## Linear regression
model1 <- lm(Usage ~ TypeSubject + TypeCourse + Subjects + Tags, data = libguides)
summary(model1)
### Diagnostic plots
```

```
png(
 'OLS-diagnostic-plots.png',
 height = 6,
 width = 6,
 units = "in",
 res = 320
)
par(mfrow = c(2, 2))
plot(model1, 1) # Residuals vs fitted: shows outliers
plot(model1, 2) # Q-Q plot: shows non-normality
plot(model1, 4) # Cook's distance: shows influential observations
dev.off()
### look at the outliers
libguides[c(5,166), ] |> View()
## Robust regression
library(robustbase)
model2 <- lmrob(Usage ~ TypeSubject + TypeCourse + Subjects + Tags,
 data = libguides)
summary(model2)

# Chi-square test for model fit
model2_null <- lmrob(Usage ~ 1, data = libguides)
anova(model2, model2_null, test = "Deviance")
```

Against the Metric Tide: A Bibliometric Corpus Study on the Marginalization of Non-English and Non-Western Research by Global Impact Metrics

Diana Florea*

In the globalized yet uneven landscape of academic publishing, research impact is increasingly assessed through citation-based metrics, including the H-index, journal impact factors, and global rankings. This study concentrates on a comparative analysis of scholarly output from specific Global North and Global South countries and investigates how global citation metrics contribute to the systemic exclusion of non-English and non-Western academic research from mainstream scholarly visibility. Using a corpus-based bibliometric approach, this study examines the publication and citation patterns of major indexing platforms, such as Scopus and Web of Science, highlighting disparities in citation frequency, journal inclusion, language representation, and impact factor distributions. The study finds that the current metrics system favors the hegemony of English-language journals from the Global North and a diminished exposure of regionally oriented non-English publications. These findings further suggest that metrics reflect, impact, and perpetuate global academic hierarchies, thereby compromising knowledge diversity and epistemic justice. Finally, this study advocates for the development of alternative, multilingual bibliometric systems—regional citation indexes, language-sensitive impact indicators, and locally contextualized evaluation criteria—that can embrace a broader yet more inclusive view of global knowledge creation and influence.

Introduction

In the current global academic environment, bibliometric parameters, such as citation mentions, journal impact factors, and author H-indexes, are becoming increasingly influential in determining the visibility and impact of research. While designed to provide impartial measures of scholarly quality and productivity, these indicators may often reproduce geopolitical, linguistic, and epistemic disparities. Since English is the principal language of academic communication—as most high-impact journals are headquartered in the United Kingdom, the United States, and Western Europe—the status, visibility, and recognition of non-English research in global databases are redefining the new landscape of academic knowledge dissemination. Therefore, this study examines the role of global citation metrics in the systemic exclusion and marginalization of non-English and non-Western scholarship

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from the international dissemination of scholarly knowledge. The analysis concentrates on the comparative bibliometric and discursive attributes of two datasets (corpora): one consisting of English-language journals from the Global North and the other comprising non-English-language journals from the Global South.

The study aims to address three main research objectives: first, it examines the extent to which non-English and Global South research is represented in major citation indexes (i.e., Web of Science and Scopus). Second, it compares citation frequencies and indexation probabilities across linguistic and geographic datasets to identify measurable disparities in scholarly visibility. Thirdly, it explores the existing nexus between publication origin, language of dissemination, and access to global impact metrics. Taken together, all these objectives facilitate an understanding of how language and geopolitical hierarchies can influence academic recognition and guide the development of more equitable evaluation practices. For this analysis, the terms "Global North" and "Global South" will be employed not as geographical descriptors but as socioeconomic and epistemic categories. They demonstrate imbalanced dynamics of academic production, distribution, and power within the global research ecosystem, dynamics that often perpetuate historical and structural imbalances between the centers and peripheries of knowledge transfer. The current research also pursues a corpus-linguistic approach that rests on the analysis of large text datasets to identify linguistic patterns such as co-occurrences, frequencies and key-word-in-context (KWIC) correlations that are apt to illustrate the framing and mobilization of academic communication. By adopting corpus-linguistic and bibliometric perspectives, the present study seeks to interrogate how quantitative citation regimes intersect with qualitative linguistic patterns to either sustain or challenge the existing hegemonies of global scholarship. Finally, it sets out to inform—both empirically and methodologically—ongoing debates on bibliometric equity, multilingualism in research, and the democratization of global academic exposure.

Literature Review

In general, citation metrics are designed to provide objective assessments of academic productivity and influence; however, they persistently draw scrutiny for perpetuating structural disparities in the production of global knowledge (Hammarfelt & Rushforth, 2017; Marginson, 2018; John & Rempala, 2024). While many researchers maintain that evaluation should prioritize the research process over the outcome to encourage behaviors that promote open and reproducible science (Frankenhuis & Nettle, 2018; Dougherty et al., 2019; Smaldino & McElreath, 2016), other scholars argue that citation data and impact factors are downright limited in evaluating scientists and their research output, dismissing them as inconsistent and often false predictors of research quality (Aksnes et al., 2019, Dougherty & Horne, 2022; Hicks et al., 2015). The fact that English remains the primary language of research discourse has recently sparked additional concerns over the epistemic inclusivity of academic assessment regimes (Canagarajah, 2002; Meneghini & Packer, 2007; Gobbo & Russo, 2019). In this context, major citation databases like Web of Science (WoS) and Scopus, while focusing mostly on English-language journals from Western countries, have been found to overlook high-quality research from non-Western countries or in languages other than English (Mongeon & Paul-Hus, 2015; Walpole, 2019). Indeed, an overwhelming number of journals indexed in WoS are in the United States, the United Kingdom, and Western Europe; however, fewer than 20% are published in non-English languages (Archambault et al., 2002; Mongeon & Paul-Hus, 2015; Yoon et al.,

2023). Such an apparent indexing mismatch points to the marginalization of Global South researchers who are frequently faced with language and economic obstacles that collectively impede their capacity to publish in peer-reviewed international journals (Beigel, 2014; Liu, 2016). Recently, many universities and research institutions have adopted policies that favor publications in high-impact English-language journals to enhance global visibility and university rankings (Salager-Meyer, 2014; Sugimoto et al., 2017). However, as English-language research articles reach a broader audience, they tend to attract more citations (Liang et al., 2013; Di Bitetti & Ferreras, 2017; Yoon et al., 2023), thereby reinforcing visibility disparities (Connell, 2007; Grosfoguel, 2013).

A wide variety of recent bibliometric analyses have increasingly highlighted linguistic and geographic biases (Cash-Gibson et al., 2018; Haelewaters et al., 2021) in scholarly publication (Moskaleva & Akoev, 2019) focusing on the inadequacy of contemporary evaluation metrics as predictors of global impact (Huang et al., 2025). Most of these studies have primarily addressed discipline patterns neglecting corpus-based comparative methods apt to facilitate a better understanding of how exclusion operates on both textual and systemic levels (Vessuri et al., 2013; Busse et al., 2022). This study's analysis fills this gap by offering a corpus-based bibliometric examination of publication and citation trends across a contrasting Global North/English-language and Global South/non-English-language group of journals. The purpose is to provide empirical evidence of indexing imbalances, citation disparities, and their epistemic implications, scrutinizing the reliability and fairness of current bibliometric systems and advocating for a reevaluation of scholarly impact assessment in a progressively multilingual and multipolar context.

Methodology

Three interrelated research concerns underpin this study:

1. To determine the representation of non-English language research within the leading worldwide citation databases (Scopus and WoS).
2. To evaluate the citation frequencies and explore the discrepancies between English-language versus non-English-language contributions within similar disciplinary fields.
3. Establish the correlation between the geographic origin of journals and the probability of their inclusion in high-impact indexing systems.

The representation of non-English research across leading worldwide citation databases (Scopus and WoS) represents this study's primary research question. Therefore, the need to look more closely into the average citation frequencies of English-language versus non-English-language contributions within similar disciplinary fields allows the author to explore discrepancies in citation performance. The third research direction seeks to establish the correlation between the geographic origin of journals and the probability of their inclusion in high impact indexing systems, thereby emphasizing the current structural differences, if any, between publication venues in the Global North and Global South. The complex assessment of the dynamics of global citation metrics is facilitated by a mixed-methods bibliometric analysis—quantitative citation analysis and corpus linguistics techniques—to clarify the representation, citation practices, and linguistic characteristics of academic publications from both Global North/English-language and Global South/non-English-language articles and to empirically assess potential disparities in discursive legitimacy, indexing, and citation visibility across linguistic and geographic divides.

Two balanced datasets were developed to facilitate comparative bibliometric and corpus-linguistic analysis. A criterion-based purposive sampling was used in three steps: defining the discipline, choosing the journals, and choosing the articles. Thus, Scopus ASJC and WoS classifications were used to find journals in the fields of education, social sciences, and public health. The sampling procedure was non-probabilistic but intentionally balanced to capture representative patterns within comparable disciplinary and linguistic contexts. Corpus A was bundled as a collection of 250 peer-reviewed research articles published in high-impact English-language journals with Q1/Q2 ranking—indexed in both WoS and Scopus—from the Global North between 2015 and 2024. Corpus B comprises 250 peer-reviewed articles that were published in Spanish, Portuguese, Mandarin, Romanian, and Arabic. These articles were published in journals from Latin America, Africa, Asia, and Eastern Europe. The periodicals were chosen for their local relevance and disciplinary comparability, and they were sourced from regional databases,[1] such as SciELO, RedALyC, CNKI, AJOL, and from national open-access repositories. The following bibliometric metadata were systematically extracted for each article in both datasets (A and B): publication year, journal title, language, country of origin, citation count, and indexing classification (WoS/Scopus inclusion). The analytical tools utilized were AntConc and Sketch Engine for corpus processing, VOSviewer for citation network mapping, and R (Bibliometrix package) for statistical modeling.

The study's established goal was to highlight corpora disparities in citation frequency, journal inclusion, language representation, and impact factor distributions. In this study, citation frequency refers to the total number of citations received by each article as recorded in WoS and Scopus at the time of data collection. No temporal or disciplinary normalization was applied; therefore, the comparison reflects raw citation counts rather than citation rates. As well, the analysis process had explicit inquiries regarding the correlation between impact factors, citation mentions, as well as research quality metrics. Nonetheless, the study's examinations remained exploratory in nature, which is why subsequent reliability was tested by modifying model parameters and prior decisions, incorporating or excluding various determinants and group-level implications, and generating alternative distributional assumptions (e.g., the indexing disparity mapping by region). Thus, even though the citation metrics analysis, indexing disparity mapping, and linguistic corpus analysis were reported throughout the study, the primary focus remained quantifying the extent of the effects, rather than making binary assessments regarding their statistical significance. Furthermore, and despite this analysis revealing distinct quantitative differences in citation visibility and indexing inclusion, it nonetheless refrains from employing inferential statistical tests to evaluate significance. The approach is thus both descriptive and exploratory, as it is aimed at delineating the dimensions of systemic inequality rather than testing specific hypotheses. Future research informed by comprehensive citation-level datasets and longitudinal metadata could further enhance this

[1]SciELO (Scientific Electronic Library Online) is a cooperative open-access platform hosting peer-reviewed journals from Latin America, Portugal, Spain, and South Africa. RedALyC (Red de Revistas Científicas de América Latina y el Caribe, España y Portugal) functions as an open-access network of Ibero-American scientific journals promoting regional visibility and bibliometric independence. CNKI (China National Knowledge Infrastructure) is the largest national academic publishing and citation database in China, providing access to scholarly output in Chinese and English. AJOL (African Journals Online) is a digital platform aggregating peer-reviewed African journals to enhance discoverability and dissemination of research from the continent.

study by using formal significance testing and regression-based modeling to validate and expand the current findings.

Results

Citation Metrics

The examination of citation metrics demonstrates significant asymmetries between the two data sets (see Table 1). Table 1 shows that all journals in Corpus A (Global North / English-language, hereinafter referred to as A-journals) were indexed in both WoS and Scopus, displaying a 100% inclusion rate. This 100% inclusion rate is not surprising but serves as a baseline for comparison with Corpus B, whose lower indexing levels underscore the structural imbalance between regions. By contrast, only 43% of journals in Corpus B (Global South / non-English-language, hereinafter referred to as B-journals) were found to be included in Scopus and 16% in WoS. Furthermore, citation density-wise, A-journals exhibited a significantly higher total citation count and mean citations per corpus, with an average of 22.6 citations per article, in contrast to B-journals, which had an average of 4.3 citations per article. This preliminary finding showed a consistent citation rate for A-publications versus a sporadic citation activity for B-articles.

Somewhat expectedly, quartile-wise, the study's analysis found A-journals to be within the high quartile rankings (Q1/Q2) of their respective disciplines, whereas most B-journals appeared in lower quartiles when indexed (see Table 2).

Looking further into potential structural asymmetries in global scholarly recognition, the author found a way to isolate and quantify disparities in citation performance. The study's methodological approach—which allowed for a fairer comparison of typical citation performance between the two datasets—was premised on the central role that citation metrics play in shaping perceptions of research quality, impact, and authority within academia. Although

TABLE 1
Corpus Summary and Indexing Status

Corpus	Articles	Languages	Indexed in Scopus (%)	Indexed in WoS (%)	Average Citations
A (Global North / English)	250	English	100%	100%	22.6
B (Global South / Non-English)	250	Spanish, Portuguese, Mandarin, Arabic, Romanian	43%	16%	4.3

TABLE 2
Journal-Level Impact Factor by Quartile and Corpus

Quartile	Corpus A (Global North / English)	Corpus B (Global South / Non-English)
Q1	62%	7%
Q2	28%	12%
Q3	10%	22%
Q4	0%	14%
No Impact Factor	0%	45%

citations are frequently used as proxies for scholarly influence in evaluations of researchers, journals, and institutions, these metrics remain highly sensitive to systemic factors, such as language, geographic origin, and database coverage, which can bias assessments against scholarship produced outside the Anglophone, Global North context. Instrumentally, the median citation rate was chosen as a reliable measure of central tendency that is less affected by the typical bias of citation distributions compared to the mean (see Figure 1). As Figure 1 shows, for A-journals, analysis yielded a median of 20.5 citations per article, indicating that half of the articles received more than 20.5 citations and half received fewer. The citation distribution is thus positively biased, with an extended upper tail that represents a group of highly cited publications that raise the overall average.

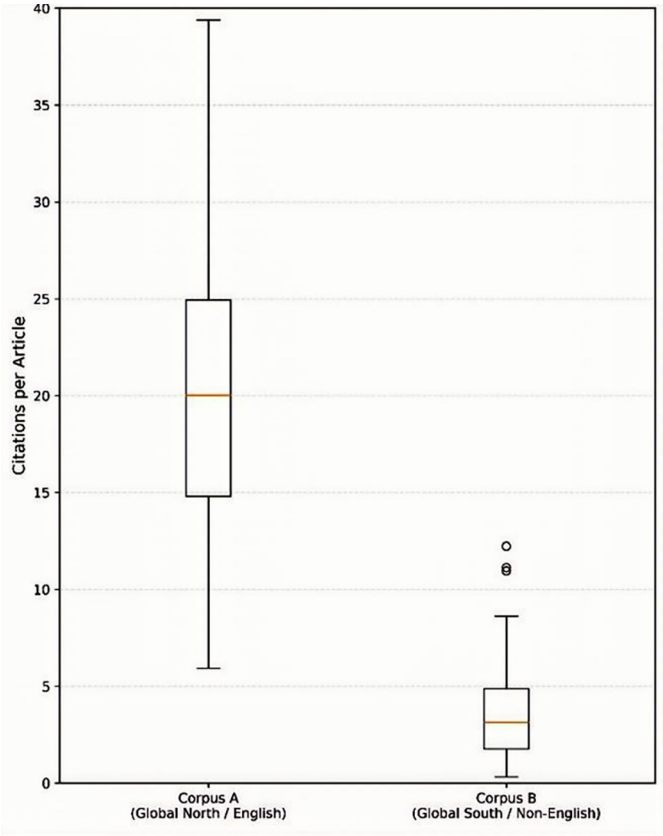


Figure 1. Citation Distribution Comparison.

An additional analysis of the citation network (see Table 3) showed the significance of English-language journals in international scholarly communication networks. Specifically, the position of the node in the network, indicative of the extent to which it facilitates the exchange of information between other journals, allowed the author to identify the journals that were being connected by citation relationships. Using the metric of betweenness centrality, the author could thus measure how well a node serves as a bridge between the shortest pathways between other pairs of nodes. In the case of this study, the betweenness centrality score for a journal was computed as the percentage of the shortest citation paths between all pairs of journals that go through it. In optimal scholarly communication, journals with high betweenness centrality can maximize the transfer of information between regions of the network that are otherwise unconnected. To reveal this, the author first calculated the betweenness centrality score by means of VOSviewer (a useful bibliometric mapping utility) per language-region groupings (e.g., Mandarin: China; Spanish: Latin America; English: US/UK/Canada) and determined the average centrality score for each category. Then, to further establish the concentration of influential journals within each region/language group, the author determined the percentage of nodes in the top 10% of the centrality distribution

TABLE 3
Citation Network Centrality Scores

Region/Language	Average Betweenness Centrality	Percentage of Nodes in Top 10%
English (US/UK/Canada)	0.482	63%
Spanish (LATAM)	0.119	9%
Mandarin (China)	0.097	7%
Portuguese (Brazil)	0.081	5%
Arabic/Romanian	<0.05	<1%

(see Table 3). The results presented in Table 4 indicate that 63% of the nodes in the top 10% by betweenness centrality were English-language nodes, primarily from the United States, the United Kingdom, and Canada, as a reflection of their epistemic centrality. In contrast, journals in Arabic, Portuguese (Brazil), Mandarin (China), Spanish (Latin America), and Romanian occupied more peripheral network positions and reported lower centrality metrics.

Indexing Disparity

The geographical distribution of indexing density provided further information about potential asymmetries in the inclusion of journals across world regions in major citation databases like Scopus and WoS. Figure 2 maps this geographical distribution of indexing density, highlighting a stark contrast between near-universal indexing coverage for A-journals and the relative exclusion of B-journals.

Discursive Structures

For all their bibliometric worth, citation counts and network centrality scores provide insight into patterns of visibility and influence; however, they do not disclose the ideological positioning, contextualization, or framing of knowledge within published research. To maximize and validate this study's findings, it was imperative to incorporate a qualitative keyword-in-context (KWIC) analysis into the analysis to enable the author to investigate the discursive structures that influence scholarly communication in the Global North and Global South, rather than relying solely on quantitative citation metrics. The comparison across datasets—enabled by the AntConc and Sketch Engine tools—generated concordance lines, analyzed patterns of co-text, and retrieved instances of key thematic terms along with their immediate left and right contexts, facilitating both frequency counts and qualitative interpretation. The KWIC analysis (see Figure 3) provided a fine-grained textual examination of the epistemic orientations and rhetorical strategies that are characteristic of various academic cultures.

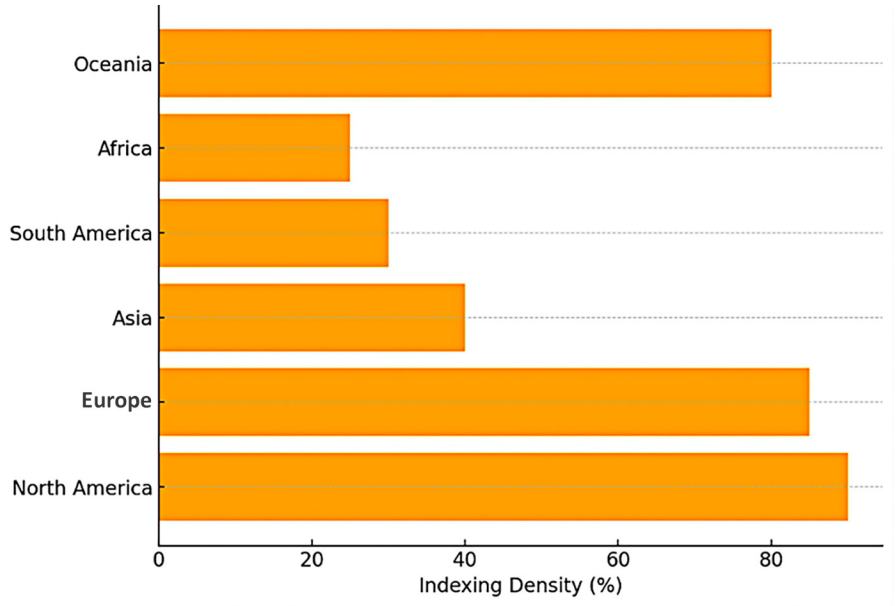


Figure 2. Indexing Disparity by Region.

Discussion

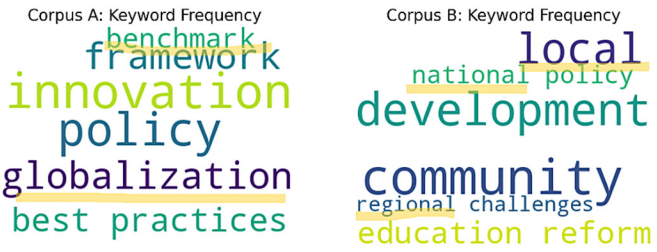


Figure 3. Keyword Frequency by Corpus.

Based on the results presented, a clearer picture of the landscape of academic publishing is shaping. Firstly, the indexing status results reveal a distinct variation disparity in database coverage between the two datasets. While Corpus A (Global North / English) has a complete representation, with 100% of journals indexed in both Scopus and WoS, Corpus B (Global South / Non-English) shows considerably lower inclusion rates of 43% in Scopus and only 16% in WoS. This contrast shows a structural imbalance of global indexing systems, with a Scopus database that demonstrates comparatively greater inclusiveness toward regional and non-English journals but where overall accessibility remains heavily skewed toward Anglophone, Global North publications. Such uneven representation directly affects research exposure, citation potential, and the global circulation of non-Western knowledge. More to the point, the fact that A-journals were predominantly located in the upper quartiles of their respective disciplinary rankings (i.e., Q1/Q2 according to *Journal Citation Reports*) is indicative of their perceived prestige and prominence within the international academic community. Journals such as *Educational Researcher* (impact factor ≈ 7.4, Q1 in the field of education) and *Social Science & Medicine* (impact factor 5.9, Q1 in the field of public health) are such examples of English-language publications in Global North high-impact publishing.

In contrast, B-journals when indexed were often placed in the lower quartiles (Q3/Q4) or did not have an official impact factor; this finding suggests a restricted international reach despite their perceived regional significance. For instance, *Revista Brasileira de Educação* and *Educación y Sociedad*, which are highly regarded in Latin America and indexed in regional databases such as SciELO and RedALyC, were either absent from the WoS database or ranked in the lower quartiles when they were present. Similar patterns were observed for Chinese-language journals listed in CNKI and Arabic-language journals indexed in regional repositories but absent from global rankings. Eastern European journals meet comparable barriers. For instance, *Revista Română de Sociologie* (*Romanian Journal of Sociology*), a key publication in Romania's national sociological community, published under the aegis of the Romanian Academy, is infrequently indexed in Scopus and absent from WoS, with no assigned impact factor, despite its disciplinary relevance in Eastern Europe. Similarly, the *Romanian Journal of Political Science*, although included in *Scopus* and the *Social Sciences Citation Index*, holds an impact factor of just 0.1 and is classified as Q4 in *Journal Citation Reports.* These discrepancies demonstrate a trend in which global indexing and ranking systems systematically relegate regionally significant but non-Anglophone journals to the periphery, thereby reproducing entrenched epistemic hierarchies that favor English-language, Global North publications.

In terms of citation distribution, the results (see Figure 1) indicate that, while citation performance varies within the Global North corpus, structural advantages such as full indexing coverage, higher journal impact factors, and wider international circulation support consistently higher citation visibility. B-journals, on the other hand, with a median citation rate of 3.1, demonstrate that non-English, Global South articles were minimally cited, even when the disciplinary fields and time periods were the same. This compressed distribution

featuring a reduced central tendency and a considerable number of minimally cited articles points to how non-English-language regionally focused research is pushed to the periphery of global citation networks. This study's findings further confirm that the systemic underrepresentation of Global South scholarship in international impact metrics is sustained by current indexing practices and language barriers that reproduce entrenched epistemic hierarchies in academic knowledge production. By way of comparative analysis, the importance of critically reassessing the global reliance on citation-based metrics is intertwined with the need for more equitable and inclusive measures of scholarly impact.

Concerning citation network centrality (see Table 3), the structural inclusion of English-language journals into global citation networks offsets the markedly low presence of such B-journals among the most significant nodes. This, in turn, sustains inequalities in visibility, authority, and impact in the production and distribution of academic knowledge. Likewise, such a network setup suggests that scholarly research communication is hardly a neutral system but rather one that reinforces current geopolitical and linguistic hierarchies within a system that places English-language journals at the center of global knowledge flows and non-English-language journals at the margins.

Emerging from the indexing disparity mapping presented in Figure 2, the reduced discoverability, citation potential, and general global visibility of scholarship from the Global South point to sustaining cumulative advantage processes that favor Anglophone research outputs. The indexing status of Oceania (in particular Australia and New Zealand) differs widely from other regions, being comparable to that of Europe and North America. This is largely attributed to its strong integration into Anglophone academic networks, substantial public investment in research infrastructure, and the prevalence of English as the primary language of publication. All these features determine a higher indexing status for Oceania and an integration into the prominent indexing systems that favor English-language, high-output journals. Australia, especially, possesses a robust and globally competitive higher education and research sector that prioritizes publication in indexed journals, many of which already collaborate with international academic publishers (e.g., Springer Nature or Taylor & Francis) and which have similar technical and editorial standards required for inclusion in global indexing databases. For example, the journal *Higher Education Research & Development* (published in English and situated in Australia) is widely cited in international education research (i.e., Scopus and WoS), enjoying both the quality of its editorial processes and the structural advantages conferred by its collaboration with Taylor & Francis, as well as its location in a well-resourced, English-speaking academic system. Consequently, Oceania's indexing status is not anomalous; rather, it represents the consequence of cultural, linguistic, and structural alignment with the requirements and oversight mechanisms of the Global North.

Regardless of this justified exception, the low indexing densities of B-journals are evident, particularly for those located on the African, South American, and Asian continents. This study's findings sustain the main argument that global citation systems generally favor knowledge generated in English-centric academic settings disregarding research from a variety of linguistic and geographical contexts. Moreover, these findings suggest that scholars and journals from underrepresented non-English regions in Africa, South America, and Asia tend to cluster within comparatively low impact metric ranges, not necessarily as a reflection of research quality but as a consequence of structural constraints, such as limited database inclusion, reduced international visibility, and linguistic barriers that restrict their integration

into global citation networks. Language itself functions as a distinct structural impediment to citation, in addition to database inclusion. Scholars are significantly less inclined to discover, read, and cite research published in languages in which they lack proficiency, regardless of its indexing status. This dynamic is further exacerbated by the decreasing expectations for foreign language proficiency in English-centric academic systems, which suggests that current citation asymmetries are indicative of the transformation of scholarly practices that favor monolingual research contexts, in addition to bibliometric structures.

Emerging from these linguistic analysis results, shown in Figure 3, noticeable discursive asymmetries exist between the two datasets. In the English-language research of A-journals, the terms "best practices" and "global benchmarks" are consistently embedded in universalizing frames and appear with a high frequency. Such frames imply that knowledge generated in well-funded, English-speaking academic settings represents the norm and that findings can transcend national boundaries. For example, articles in A-journals about education often address policies in terms of "global benchmarks," "international standards," and "evidence-based practices," maximizing the portability and superiority of these models across regions and beyond local settings. B-journals non-English-language scholarship, on the other hand, exhibits a significantly distinct discourse pattern in which such keywords as "education reform," "local development," and "community" are used to emphasize regional policy challenges, culturally specific practices and a generally situated nature of knowledge production.

More specifically, articles from Latin American journals discuss, for instance, education reform relative to indigenous communities, while Romanian and Chinese journal articles generally anchor development discourse in national, regional, and historical contexts. This asymmetry indicates that scholarly discourse from the Global North tends to universalize notions by disregarding place and context, while scholarly discourse from the Global South regularly aligns global concepts with specific sociohistorical and cultural realities. Furthermore, such dominant discourse type shows another critical aspect, which is that academic communication is not just about language—it can be also profoundly ideological. While Global North publications use a rhetoric of generalizability that fits with their structural position at the epistemic center of global academia, Global South research is highly contextualized, which reflects its marginal position in global knowledge hierarchies. It is also important to acknowledge that research framed around broadly transferable or internationally comparable themes may naturally attract wider citation audiences due to its perceived applicability across contexts; however, the capacity of certain topics to be recognized as "global" rather than "local" is itself shaped by the structural and linguistic positioning of journals within dominant citation networks. This study's KWIC results show discourse itself to be yet another hegemonic contributor to the reproduction of epistemic inequalities, counterbalancing a dominant language of Global North universality with a peripheral Global South "local" knowledge.

Conclusions and Recommendations

The stated purpose of this study was to examine whether the non-English Global South academic research was excluded by global citation metrics from mainstream scholarly exposure. Beyond its linguistic and bibliometric dimensions, this study contributes to ongoing discussions in academic librarianship and research evaluation by providing empirically grounded evidence that can inform responsible metrics policies, collection development strategies, and more equitable assessment frameworks. The findings demonstrate that English-language,

Global North journals are favored by citation-based impact metrics and that Global South journals are marginalized within a dynamic process that is supported by current indexing techniques, structural global citation networks, and dominant discursive norms that favor abstract, universal frameworks over contextually specific and local epistemologies. Such a disproportionate academic exposure and research acknowledgment call for a critical reassessment of the definition and evaluation of scholarly influence in the global academic arena.

Within the contemporary landscape of academia, which aims to achieve epistemic inclusiveness and fairness, diversification and adjustment to bibliometric infrastructures represent technical and ethical necessities addressing the intellectual contributions of researchers operating in diverse contexts and languages. Consequently, and considering this study's findings, the establishment of alternative, multilingual bibliometric systems can be more pluralistic and inclusive in their approach to global knowledge production. In this sense, a potential avenue for reform may represent the development of regionally sensitive bibliometric indicators that are apt to more accurately reflect the diversity of global scholarly ecosystems, thereby providing a more equitable basis for evaluating the impact of research. Technically, this is achievable by regional citation normalization, which develops baseline citation frequencies for specific regions and compares citation performance to these local benchmarks instead of utilizing a worldwide standard based on Anglophone citation patterns. Then, to maximize and recognize the importance of citations from reputable regional databases, including SciELO, RedALyC, CNKI, and AJOL, weighting procedures could be further developed to ensure that regional scholarship will not be structurally excluded from prominent global indexes, such as Scopus and WoS. Another direction concerns several alternative measures that could be made to operate as more inclusive to encompass regional effect indicators and local-language involvement. Impact-wise, the extent to which research influences national policy, supports regional development initiatives, or is incorporated into the educational curriculum may serve as supplementary indicators of effect, reflecting aspects of academic influence that are not represented by global citation metrics. Therefore, establishing regional impact rankings and metrics that are aligned with local epistemic values and research agendas would contribute to a fairer assessment and acknowledgment of journals (and articles) that largely address regional specificity and audiences. Additionally, co-authorship networks and research partnerships could be successfully integrated into evaluative frameworks within regions in the form of collaboration metrics that would sustain resilient regional research communities. Simultaneously, the establishment of multilingual alternative metrics (altmetrics) aggregators would optimize the visibility of non-English scholarship, providing a more comprehensive and inclusive representation of research impact and engagement. Taken together, all these reforms can operate against research underrepresentation within an epistemic framework of bibliometric evaluation that promotes a more context-sensitive, pluralistic, and equitable model of scholarly assessment in regional and international contexts.

Supported by the considerations discussed, the current study also makes way for a variety of future research directions including (1) the methodological development of regional citation metrics into global knowledge frameworks, (2) citation behaviors and practices of scholars in underrepresented regions, (3) standardization of citation counts across linguistic and geographic contexts, and (4) inquiries into how to facilitate equitable comparisons of scholarly influence to reflect the broader societal and policy implications of locally situated research. With these future research directions in mind, global knowledge metrics can be

adjusted to operate as egalitarian and more reflective of the full spectrum of scholarly research worldwide; thus, the revision of bibliometric methods becomes indispensable for the fair evaluation of the impact of research and the establishment of a truly global intellectual community in which all knowledge creators are actively engaged.

Acknowledgment

Project financed by Lucian Blaga University of Sibiu through the research grant LBUS-IRG-2023.

References

Aksnes, D. W., Langfeldt, L., & Wouters, P. (2019). Citations, citation indicators, and research quality: An overview of basic concepts and theories. *Sage Open*, *9*(1). https://doi.org/10.1177/2158244019829575

Alatas, S. F. (2003). Academic dependency and the global division of labour in the social sciences. *Current Sociology*, *51*(6), 599–613.https://doi.org/10.1177/00113921030516003

Archambault, É., Vignola-Gagné, É., Côté, G., Larivière, V., & Gingrasb, Y. (2006). Benchmarking scientific output in the social sciences and humanities: The limits of existing databases. *Scientometrics*, *68*(3), 329–342. https://doi.org/10.1007/s11192-006-0115-z

Beigel, F. (2014). Publishing from the periphery: Structural heterogeneity and segmented circuits. the evaluation of scientific publications for tenure in Argentina's CONICET. *Current Sociology*, *62*(5), 743–765. https://doi.org/10.1177/0011392114533977

Busse, C. E., Anderson, E. W., Endale, T., Smith, Y. R., Kaniecki, M., Shannon, C., & August, E. T. (2022). Strengthening research capacity: A systematic review of manuscript writing and publishing interventions for researchers in low-income and middle-income countries. *BMJ Global Health*, *7*(2). https://doi.org/10.1136/bmjgh-2021-008059

Canagarajah, A. S. (2002). *A geopolitics of academic writing*. University of Pittsburgh Press.

Cash-Gibson, L., Rojas-Gualdrón, D. F., Pericàs, J. M., & Benach, J. (2018). Inequalities in global health inequalities research: A 50-year bibliometric analysis (1966-2015). *PLOS ONE*, *13*(1). https://doi.org/10.1371/journal.pone.0191901

Connell, R. (2007). *Southern theory: The global dynamics of knowledge in social science*. Polity Press.

Di Bitetti, M. S., & Ferreras, J. A. (2017). Publish (in English) or perish: The effect on citation rate of using languages other than English in scientific publications. *Ambio*, *46*, 121–127. https://doi.org/10.1007/s13280-016-0820-7

Dougherty, M. R., & Horne, Z. (2022). Citation counts and journal impact factors do not capture some indicators of research quality in the behavioural and brain sciences. *Royal Society Open Science*, *9*(8). https://doi.org/10.1098/rsos.220334

Dougherty, M. R., Slevc, L. R., & Grand, J. A. (2019). Making research evaluation more transparent: Aligning research philosophy, institutional values, and reporting. *Perspectives on Psychological Science*, *14*(3), 361–375. https://doi.org/10.1177/1745691618810693

Frankenhuis, W. E., & Nettle, D. (2018). Open science is liberating and can foster creativity. *Perspectives on Psychological Science*, *13*(4), 439–447. https://doi.org/10.1177/1745691618767878

Gobbo, F., & Russo, F. (2019). Epistemic diversity and the question of lingua franca in science and philosophy. *Foundations of Science*, *25*(1), 185–207. https://doi.org/10.1007/s10699-019-09631-6

Grosfoguel, R. (2013). The structure of knowledge in Westernized universities. *Human Architecture: Journal of the Sociology of Self-Knowledge*, *11*(1), 73–90.

Haelewaters, D., Hofmann, T. A., & Romero-Olivares, A. L. (2021). Ten simple rules for global north researchers to stop perpetuating helicopter research in the Global South. *PLOS Computational Biology*, *17*(8). https://doi.org/10.1371/journal.pcbi.1009277

Hammarfelt, B., & Rushforth, A. D. (2017). Indicators as judgment devices: An empirical study of citizen bibliometrics in research evaluation. *Research Evaluation*, *26*(3), 169–180. https://doi.org/10.1093/reseval/rvx018

Hicks, D., Wouters, P., Waltman, L., de Rijcke, S., & Rafols, I. (2015). Bibliometrics: The Leiden manifesto for research metrics. *Nature*, *520*(7548), 429–431. https://doi.org/10.1038/520429a

Huang, T.-Y., Li, L., & Meng, P. (2025). Journal internationalization of non-English-speaking countries: Indicator framework design and influencing factor analysis. *Journal of Infometrics*, *19*(3), 101671. https://doi.org/10.1016/j.joi.2025.101671

John, L., & Rempala, K. (2024). The ethics of knowledge production and the problem of global knowledge inequality. *Philosophy & Social Criticism*. https://doi.org/10.1177/01914537241239096

Liang, L., Rousseau, R., & Zhong, Z. (2013). Non-English journals and papers in physics and chemistry: Bias in citations? *Scientometrics*, 95(1), 333–350. https://doi.org/10.1007/s11192-012-0828-0

Lillis, T., & Curry, M. J. (2010). *Academic writing in a global context: The politics and practices of publishing in English*. Routledge.

Liu, W. (2016). The changing role of non-English papers in scholarly communication: Evidence from Web of Science's three journal citation indexes. *Learned Publishing*, *30*(2), 115–123. https://doi.org/10.1002/leap.1089

Marginson, S. (2018). The new geo-politics of higher education. *Higher Education*, *80*, 120–140.

Meneghini, R., & Packer, A. L. (2007). Is there science beyond English? *EMBO Reports*, *8*(2), 112–116. https://doi.org/10.1038/sj.embor.7400906

Mongeon, P., & Paul-Hus, A. (2015). The journal coverage of Web of Science and Scopus: A comparative analysis. *Scientometrics*, *106*(1), 213–228. https://doi.org/10.1007/s11192-015-1765-5

Moskaleva, O., & Akoev, M. (2019). Non-English language publications in citation indexes—Quantity and quality. *17th International Conference on Scientometrics and Informetrics, ISSI 2019. Proceedings*, 35–46. https://doi.org/https://doi.org/10.48550/arXiv.1907.06499

Salager-Meyer, F. (2014). Writing and publishing in peripheral scholarly journals: How to enhance the global influence of multilingual scholars? *Journal of English for Academic Purposes*, *13*, 78–82. https://doi.org/10.1016/j.jeap.2013.11.003

Smaldino, P. E., & McElreath, R. (2016). The natural selection of bad science. *Royal Society Open Science*, *3*(9), 160384. https://doi.org/10.1098/rsos.160384

Sugimoto, C. R., Robinson-Garcia, N., Murray, D. S., Yegros-Yegros, A., Costas, R., & Larivière, V. (2017). Scientists have most impact when they're free to move. *Nature*, *550*(7674), 29–31. https://doi.org/10.1038/550029a

Vessuri, H., Guédon, J.-C., & Cetto, A. M. (2013). Excellence or quality?: Impact of the current competition regime on science and scientific publishing in Latin America and its implications for development. *Current Sociology*, *62*(5), 647–665. https://doi.org/10.1177/0011392113512839

Walpole, S. C. (2019). Including papers in languages other than English in systematic reviews: Important, feasible, yet often omitted. *Journal of Clinical Epidemiology*, *111*, 127–134. https://doi.org/10.1016/j.jclinepi.2019.03.004

Yoon, J., Kim, N., & Chung, E. (2023). Characteristics of scholarly journals published in non-English-speaking countries: An analysis of library and information science Scopus journals. *Learned Publishing*, *36*(1), 14–24. https://doi.org/10.1002/leap.1520

Exploring the Impact: After-hours Programming and Strategies for Enhancing Academic Library Community Involvement

Ruthann E. Mowry and Janis J. Shearer*

Public programming is an essential strategy for academic libraries to engage communities and highlight their services. This study examines after-hours programming (i.e., after 5 p.m. and/or on a weekend) and whether it draws larger attendance. Drawing on data from various departments within a university library system, the research identifies attendance patterns and examines how scheduling influences attendance. By comparing after-hours and traditional workday programs (i.e., Monday to Friday, 9 a.m. to 5 p.m.), the study explores how flexible programming can enhance access and engagement. The findings offer insights into how timing adjustments can maximize library impact and better serve patrons, contributing to the discussion on innovative public programming.

Introduction

Exploring the impact of after-hours programming is essential, as it offers academic libraries opportunities to enhance access, increase participation, and engage with individuals who are unable to participate during traditional hours. By examining such programming, libraries open the door to enriching the flexibility, inclusivity, and accessibility of library services. While formal community engagement in higher education often refers to reciprocal, institution-wide partnerships with external communities, academic libraries also play a crucial role in fostering inclusive participation and accessibility through program design. This study focuses on how after-hours programming can extend that ethos of access and responsiveness, even when the intended audience remains primarily campus-based. Academic libraries offer a variety of public programming that covers topics relating to educational, recreational, and social activities. Public programming now plays an increasingly prominent role in shaping the user experience. These programs range from educational workshops to social and cultural events, offering meaningful engagement for students, staff, and faculty alike. Although not always designed to reach beyond campus borders, many of these events intersect with broader goals of accessibility and user-centered service design.

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This study addresses a critical gap in understanding how academic libraries can optimize their public programming strategies through evidence-based scheduling and delivery formats. Many communities increasingly recognize libraries as vital knowledge hubs. The authors' empirical research demonstrates that both virtual offerings and weekend scheduling significantly enhance attendance across demographic groups, particularly among those facing traditional access barriers. By examining after-hours programs and alternative formats across multiple library units at a major university, this research provides valuable insights into the relationship between program accessibility and community engagement. The findings reveal that after-hours programming significantly increases attendance through enhanced flexibility and enables broader participation. These results can directly inform strategic decision-making by library administrators and program coordinators, ultimately leading to more inclusive and impactful community outreach efforts in higher education institutions. The study's emphasis on both temporal and modal accessibility represents an important contribution to the growing body of literature on academic library outreach and community engagement.

Public programming represents a structured and organized occurrence where individuals convene for a defined purpose or activity. Programs can differ widely in their scale and intent, spanning from intimate gatherings with few attendees to expansive festivals. Core elements that define a library program include its specific purpose, the participants involved, and the activities undertaken. Library programming serves diverse functions and contributes to the library's mission of community engagement. This study defines after-hours programs as gatherings held outside of traditional hours, specifically those happening beyond the 9 a.m. to 5 p.m., Monday through Friday time frame. These programs may occur during the evening or night, and program coordinators typically design these occurrences to offer a more informal atmosphere. After-hours programming can be social, educational, or entertainment-oriented, often targeting a broader or different audience than daytime programming. Libraries frequently employ this type of scheduling to create inclusive experiences, catering to individuals who may be unable to attend during regular operational hours.

Literature Review

A review of the literature reveals a variety of outreach efforts by academic libraries with a shared emphasis on fostering collaboration and increasing awareness of library resources across diverse academic communities. Notably, many of these programs took place during evenings or weekends, strategically planned to accommodate participants' schedules and maximize accessibility and engagement. Effective library outreach evolves to meet the changing needs of academic and local communities, with several strategies emerging as central to increasing engagement. Libraries are embracing innovative tools such as virtual workshops, social media campaigns, and interactive digital exhibits to reach audiences in fresh ways. By aligning promotion and delivery methods with technology and emerging trends, libraries remain relevant and dynamic in an increasingly online academic environment. Highly sought after and culturally relevant programming highlights a need for more intentional, impact-driven outreach efforts that balance trendiness with meaningful outcomes and documented evidence of success (Carter & Seaman, 2011; Diaz, 2019). Leveraging these programming methods attracts patrons by making activities appealing and accessible.

Weekend and evening programs are increasingly important as libraries strive to meet the unique needs of individuals with busy or non-traditional schedules, including both students

and the community who are balancing work and personal commitments. Offering programming at various times acknowledges the demands of student parents (Hung-Chu et al., 2021), first-generation students (Hodge, 2022; Stocking, Bucy & Ramirez-Reyes, 2024), and underrepresented students (Bucy, 2021; Long, 2011). Acknowledging that many students, faculty, and community members are unavailable during regular weekday hours, libraries have begun to strategically schedule events, workshops, and often office hours during evenings and weekends. This flexibility allows library resources and support to be more accessible to a wider community. Catalano et al. (2017), Strittmatter (2008), Wagner and Cho (2019), and Wallace et al. (2021) all illustrate the strategic use of evening or weekend events by academic libraries to foster engagement and collaboration. Catalano et al.'s weekend event for artists designed to teach health maintenance and prevent physical strain took place outside regular hours to accommodate participants' busy schedules, resulting in a higher-than-expected turnout. Similarly, Strittmayer highlights a 2008 evening cocktail reception which aimed to build social connections with new faculty while providing library services, an approach more effective than traditional daytime outreach methods. Wagner and Cho's 2017 series of focus groups to identify desirable student services prior to and during finals played a crucial role in implementing programming for late night library usage. Wallace et al.'s study of a 2015 annual evening showcase event for faculty achievements echoes the success, showing how after-hours events allowed for networking and collaboration while raising awareness of library resources. These examples underscore the effectiveness of hosting library outreach events during the evenings or weekends, thereby offering both flexibility for attendees and the benefit of cultivating informal settings to enhance engagement. Innovative outreach efforts aimed at specific user groups highlight a shift toward strategic, relational approaches. By moving beyond programming during traditional hours, these initiatives create more meaningful, relevant, and user-centered experiences that foster stronger connections.

Methodology

Libraries use public programming as an opportunity to share what libraries do and engage with the community in meaningful ways. By focusing on public programming at the University of Illinois Urbana-Champaign Library (University Library), this study aims to identify how the timing of programming influences attendance.

Data Collection

This study uses data from August 1, 2022, to August 31, 2024, comprising 1,173 unique recorded library programs, including lectures, workshops, open houses, and social events. These occurrences span multiple departments and formats, offering a robust dataset for examining patterns in attendance and scheduling. The authors drew data from Springshare LibInsight, an assessment tool used by all units within the University Library to log event statistics. The study excludes Savvy Researcher workshops, information literacy instruction (ILI) sessions, and staff trainings, as these constitute instruction-based programming. All three fall outside the public programming scope of this study. This exclusion ensures that the study focuses solely on programming designed for broader community engagement. The authors analyzed attendance data by calculating the average number of participants and divided each attendee category, such as intended audience, to understand participation trends. The authors segmented the data into three primary categories: multi-day programming (i.e., programming that

spans more than one calendar day), programming held after hours, and programming held during traditional hours. Multi-day programming is a distinct third category because these events often span evenings and weekends and lack a single start time. The authors analyzed them as their own category, counted in overall results, and not reassigned to after-hours or traditional hours for the time-of-day comparison. The authors then compared these categories to determine any significant differences in attendance.

Variables and Key Data Points

The study extracted several key data points for analysis: program time, attendee count, intended audience, and type of programming. It is important to note that LibInsight's data reflects only the status of the intended audience, not the status of the actual attendees. The dataset includes the date as well as the start and end times. The authors analyzed attendance data by calculating the average number of participants and categorizing intended attendees to reveal participation patterns. Analysis is descriptive and the authors report means, medians, and distributed summaries. The authors did not perform hypothesis tests, so differences should be interpreted as associations rather than statistically validated effects. To classify programs as after-hours, the authors manually reviewed each entry, marking those that fell outside the traditional workweek hours of Monday to Friday, 9 a.m. to 5 p.m. The classification process included a 30-minute buffer, placing programs ending between 5 p.m. and 5:30 p.m. as within traditional hours, based upon the assumption that participants could not realistically leave work and attend an event that ended shortly after business hours. Additionally, the authors noted programming held on weekends, as well as after 5:30 p.m., and combined them to determine which occurrences were labeled as after-hours. Attendance counts, as recorded by individual University Library personnel into LibInsight, represent raw headcounts and were not altered by the authors. Intended audience categories are standardized from the original dataset into five distinct groups: "All Groups," "Campus Community," "K-12," "Non-Affiliated and/or Non-Local Users," and "Non-Affiliated Community Members." Definitions for each audience type can be found in Table 1.

Limitations

The analysis revealed several limitations. First, some program records lacked completeness. Of the 1,173 unique programs, the authors marked 72 "unknown" because the original data entry did not include a program time, which made it impossible to classify these occurrences

TABLE 1
Intended Audience Categories

All Groups	Programming open to everyone, regardless of affiliation
Campus Community	Programming specifically targeted toward university affiliates, including students, faculty, and staff
K-12	Programs aimed at kindergarten through high school senior students, whether on campus or in the local community
Non-Affiliated and/or Non-Local Visitors	Programs directed toward participants who may be visiting from outside the local area and/or who are not affiliated with the university
Local Non-Affiliated Community Members	Programming aimed at local community members with no formal ties to the university

as multi-day, after-hours, or traditional hours. Another limitation is promotional variability across different campus libraries. Library locations differ in how intensively they promote programs; thus, higher attendance at certain programs may partially reflect stronger marketing rather than timing alone. LibInsight does not track this data. Future assessment should capture these fields to model their effects alongside time of day. Finally, the authors encountered significant taxonomic challenges when categorizing activities. Library workers use an online, self-reporting mechanism; thus, completeness and accuracy can vary, particularly because of the lack of formal definitions to categorize program types and the ability to select multiple categories for programs. This ambiguity does not determine the time-of-day variable, but it does affect which records are included as public programming. The LibInsight system requires staff to select from ten programming types without providing clear definitions. This absence of precise definitions necessitated researcher intervention to establish meaningful definitions. The complexity emerged from substantial categorical overlaps, making systematic classification difficult. By developing nuanced definitions for each programming type, the authors discovered that seemingly straightforward categorizations in fact mask underlying methodological complexities and heterogeneous interpretation by the library's many contributors. Because the LibInsight administrators in the University Library do not provide any category definitions as a guide, there is inconsistent use of labeling across the library. By rigorously examining the scheduling, intended audience, and attendance data, this study seeks to provide insights into how flexible scheduling shows a positive association with attendance. The methodology ensures that the analysis focuses on relevant public programming while accounting for key factors, such as timing and intended audience type.

Discussion and Analysis

This study analyzes the association between time of day and attendance for public programming. Program types are used to define the analytic set and to present descriptive counts; however, the timing comparison does not model differences by type. Using start time to define timing, after-hours programming averaged 72 participants, compared to an average of 45 for programs held during traditional hours. A detailed audience distribution shows that "Campus Community" programs constituted the largest portion of total attendance

The dataset analyzed encompasses a wide range of program categories, each serving a specific role in promoting engagement, education, and information sharing. This study categorizes the types of public programming offered at the library, for which the authors developed operational definitions, including general events (97), exhibits (57), lectures (616), on-site visits (516), online exhibits (7), other miscellaneous events (65), tours (185), and workshops (201). The total number of programs is higher than the number of unique programs because library workers can select more than one category when inputting information. The categorization emphasizes lectures and on-site visits, reflecting the library's strategy of combining educational and interactive engagement within its programming. The breakdown of these types, along with definitions for each identified category, can be found in Table 2.

This distribution of program categories provides a comprehensive view of the types of programming analyzed, each contributing unique insights into the reach and impact of public programming efforts within the academic library context. Lectures are the most frequently tagged (616 records; 52.5% of programs), followed by on-site visits (516 records; 44.0% of programs). Tours (185 records; 15.8% of programs) and exhibits (57 records; 4.9% of

TABLE 2
Program Categories

Event	Classified as general "events," these 97 occurrences encompass various types of gatherings not specified within other categories. This broad category may include meetings, informal gatherings, or events designed for social interaction and networking.
Exhibit	The 57 exhibits recorded in this category display curated collections of artifacts, documents, or thematic presentations, often with an educational or cultural focus. Exhibits offer passive engagement, are typically open to the public, and can range from historical artifacts to thematic presentations relevant to current library programming.
Lecture	This category, representing the largest portion with 616 recorded occurrences, involves presentations where speakers deliver structured information on a particular subject. Lectures are often designed to educate, inspire, or inform an audience on topics relevant to the library's mission.
On-Site Visit	The 516 on-site visits consist of group tours or organized visits where participants explore library facilities or special collections. These visits offer an opportunity to engage directly with library resources in a hands-on environment, fostering a deeper connection with the institution as well as the material. This category was named by LibInsight administrators and does not reflect a dichotomy between virtual and in-person programs.
Online Exhibit	This smaller category, with seven entries, represents exhibits available exclusively online. Online exhibits allow for digital engagement with library collections, reaching audiences who may not be able to visit in person, thus expanding access to library resources.
Other	The "other" category, with 65 occurrences, includes activities that do not fit into the predefined categories. This group captures a range of miscellaneous programming that supports the library's mission but does not align directly with other specific categories.
Tour	The 185 occurrences categorized as tours involve guided exploration of library spaces, resources, and special collections. Tours provide a curated look at library offerings, allowing visitors to gain insight into the library's structure and function.
Workshop	With 201 workshops recorded, this category comprises interactive sessions where participants actively engage in skill-building activities. Workshops often emphasize practical, hands-on learning experiences, allowing attendees to develop new skills or knowledge in a collaborative setting.

programs) appear less often. Because categories are non-exclusive, percentages sum to more than 100%. Taken together, this distribution indicates a programming emphasis on education engagement (e.g., lectures and visits), supplemented by smaller volumes of tours, exhibits, and other formats.

The analysis involved a system filtering process to refine the dataset and focus on after-hours attendance patterns in public programming. An analysis of programming distribution by time reveals that a small, but notable portion of the dataset—71 or approximately 6% of the total—lacks recorded dates or times, which reflects potential gaps in data entry by the initial recorders. Therefore, the analysis excluded any programs with unknown timing (whether after-hours, traditional hours, or multi-day) to clarify attendance trends based on established time categories. Multi-day programming constitutes 103 entries and accounts for 9% of the total. After-hours programs include 153 events, representing 13% of the total. Traditional

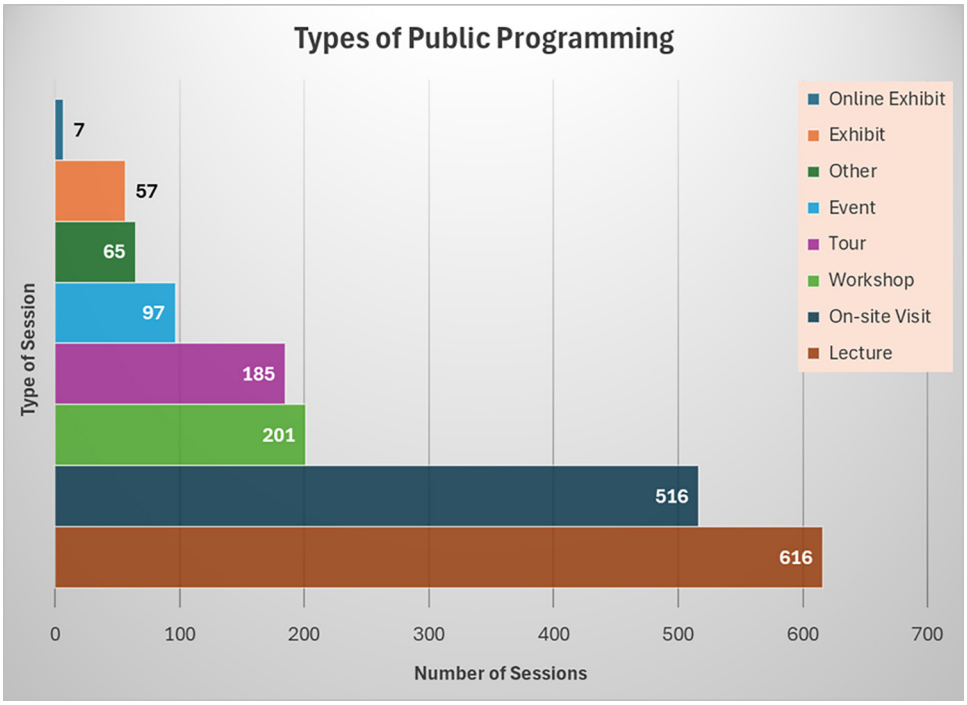


Figure 1. Types of Public Programming.

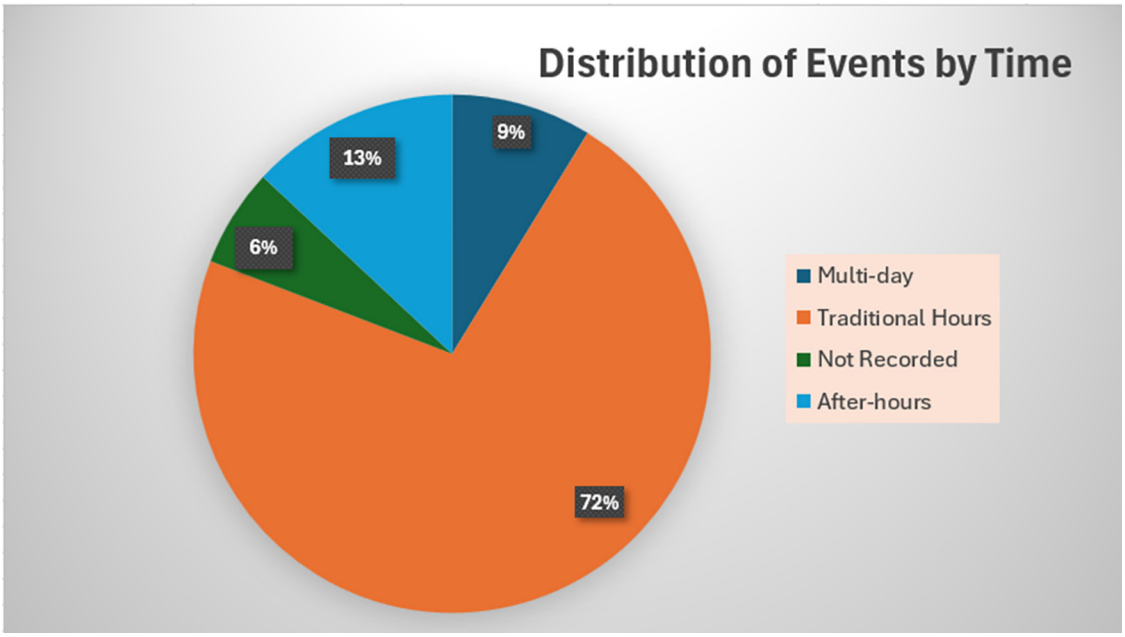


Figure 2. Distribution of Events by Time.

hours program types dominate the dataset with 845 occurrences, making up a significant 72% of all recorded occurrences.

Across 1,173 unique programs, the dataset records 37,667 total attendees engaged in public programming at the University Library. By timing category, after-hours programs accounted for 153 events (13%) and attracted 8,204 attendees (22% of all participants), reflecting interest in programming outside of traditional operating hours. Multi-day programs accounted for

103 events (9%) and drew 4,310 attendees (11% of all participants), indicating participation across extended event durations. Unknown timing accounted for 72 programs (6%) and 1,761 attendees (5% of all participants). Traditional hours programming accounted for 845 events (72%) and attracted the largest portion of attendees with 23,392 (62% of all participants). On a per-event basis, average attendance was 53.6 for after-hours, 27.7 for traditional hours, and 41.8 for multi-day, indicating higher attendance per occurrence for after-hours despite the programs being less frequent. To contextualize these totals, attendance is summarized by intended audience type within each timing category. For all intended audience types, it is important to note that multi-day programs tend to skew with more attendees because the program itself lasts longer with more opportunities for people to participate.

All Groups

This audience type encompasses both campus affiliates and the public. Overall, this audience type was the focus of 89 events; Table 3 shows the attendance distribution. These findings indicate that after-hours events for a broad audience foster higher average attendance than traditional hours. This suggests that a general audience of participants is more likely to participate during the after-hours timeframe.

Campus Community

Programming aimed at university faculty, staff, and students exclusively. This audience type had 443 events; the attendance patterns for this group can be found in Table 4. The substantial attendance difference between after-hours and traditional hours suggests that after-hours programming particularly benefits campus community members, who likely prefer the flexibility beyond regular work or study hours.

Non-Affiliated International and/or Non-Local Users

Public programming designed specifically for international or non-local visitors is a distinct audience group. The averages for this group, over a total of 40 events, can be found in Table 5.

TABLE 3
All Groups Attendance

	Number of Events	Average Attendance	Minimum of Attendance	Maximum of Attendance	Median of Attendance
Multi-Day	9	87	10	344	55
After-Hours	31	71	4	320	40
Traditional Hours	49	55	2	412	68

TABLE 4
Campus Community Attendance

	Number of Events	Average Attendance	Minimum of Attendance	Maximum of Attendance	Median of Attendance
Multi-Day	66	42	1	400	60
After-Hours	47	69	2	724	45
Traditional Hours	330	26	1	1,003	72

TABLE 5
Non-Affiliated International and/or Non-Local Users Attendance

	Number of Events	Average Attendance	Minimum of Attendance	Maximum of Attendance	Median of Attendance
Multi-Day	5	42	2	100	38
After-Hours	2	31	2	60	28
Traditional Hours	33	12	1	146	48

While the average attendance is generally lower for this group, after-hours events still reflect a significant increase compared to traditional hours, emphasizing the positive association of after-hours timing on participation.

Non-Affiliated Community Members

The attendance distribution for public programming designed for local community members who are not affiliated with the university, representing more than 46 events, can be found in Table 6. The marked average attendance difference between after-hours and traditional hours (91 vs. 25) supports the hypothesis that after-hours programming enhances engagement with the local community, maximizing accessibility and attendance.

Taken together, the data shows a consistent descriptive pattern. Although traditional hours programs make up the majority of programs (845 of 1,173; 72%), after-hours programs account for a disproportionate share of total attendance (8,204 attendees; 22%) relative to their frequency (153 of 1,173; 13%). On a per-event basis, after-hours programs draw larger attendance (mean 53.6; median 24) than traditional hours (mean 27.7; median 20), with multi-day in between (mean 41.8; median 20). In practical terms, a modest reallocation of programs into evening or weekend time slots is associated with higher attendance per event. Analyses are descriptive, with means and medians only, and do not assess statistical significance, so differences should be interpreted as associations rather than causal effects. These findings suggest that strategic scheduling, which includes after-hours programming, can increase community involvement and accessibility in academic library settings.

Next Steps

In exploring the future of after-hours programming, several key steps could provide valuable insights that would enhance the reach and impact of library public programming. A first step could involve conducting surveys or focus groups with patrons to understand their demographics, interests, and motivations that drive attendance at after-hours programs.

TABLE 6
Non-Affiliated Community Members Attendance

	Number of Events	Average Attendance	Minimum of Attendance	Maximum of Attendance	Median of Attendance
Multi-Day	1	9	9	9	43
After-Hours	13	91	2	595	33
Traditional Hours	32	25	1	380	53

This audience analysis would help identify factors that attract a broader audience outside traditional hours and guide targeted outreach efforts. Another area for investigation could focus on analyzing the timing of programs, assessing how different times of day influence attendance and participation. This research may identify specific time slots where engagement is highest and suggest opportunities for alternative scheduling that cater to audience preferences. Expanding the dataset to include additional years or comparative data from other university libraries would also offer valuable insights into whether observed attendance trends hold across time and institutions. Such longitudinal data could reveal consistent patterns or changes in attendance, which would help refine after-hours programming over time. In addition to quantitative data, examining community partnerships associated with after-hours programming would help measure the impact of these occurrences on relationships with local organizations. By fostering greater accessibility, after-hours programs could strengthen community ties and pave the way for sustained and mutually beneficial partnerships.

Recommendations based on findings from this expanded analysis could further support after-hours programming by highlighting its benefits in community outreach, library visibility, and public accessibility. Investigating which program types and formats (e.g., hybrid, asynchronous, synchronous) resonate best with after-hours attendees could inform future programming decisions and provide insights into whether workshops, social gatherings, or collaborative projects generate the most engagement outside of traditional hours. Engagement metrics could go beyond attendance to include visitor feedback, repeat attendance, and active participation, offering a nuanced understanding of how after-hours programming enhances user experience. Establishing a variety of collaborative partnerships with other departments or community organizations offers another promising avenue for expanding after-hours programming. Partnerships have the potential to not only expand the audience base but also enrich event offerings, making them more diverse and impactful. By measuring the impact of such collaborations, through pre- and post-event surveys, attendance data comparisons, partner interviews, and cost-benefit analyses, organizers could demonstrate the value of these partnerships and support ongoing resource allocation.

In planning for the sustainability of after-hours programming, assessing resource needs for staffing, security, and budgeting is essential. Such evaluations would ensure that organizers make the program feasible and adequately supported in the long term. Conducting longitudinal studies to track attendance and engagement trends over time could further refine program planning. This analysis could reveal whether after-hours programming continues to be popular. It may highlight audience-specific preferences that shift over time. These insights could guide organizers in adjusting programming based on emerging trends, enabling libraries to remain responsive to the evolving needs and interests of their communities. Finally, the authors suggest a more standardized documentation practice with regards to documenting programming activities within the University Library. The development of clearer terminology and definitions within LibInsight will likely improve the tracking and evaluation of activities over time (Kiebler & Lafazan, 2020).

Conclusion

This research examined the association of after-hours programming on community attendance and engagement in one academic library between 2022 and 2024. The findings indicate that such programs increase the number of participants and potentially the amount

of community participation, which leads to libraries becoming more accessible and inclusive. Across all intended audiences—campus community, non-affiliated visitors, non-local non-affiliated community—average attendance was significantly higher during after-hours programming, such as evenings and weekends compared with traditional hours (i.e., Monday to Friday, 9 a.m. to 5 p.m). This was a consistent trend, suggesting that the timing of programs plays a crucial role in attracting participants.

Several factors may contribute to increased attendance, including work and school schedules; flexibility and convenience; reduced time constraints; and proximity to other programs. Work and school schedules significantly impact participants' ability to attend programs. Flexibility and convenience emerge as critical considerations, allowing participants to integrate library programming into their complex daily routines. Reduced time constraints further enhance participation, enabling more people to engage with library offerings. These results underscore the value of strategic scheduling, advocating for after-hours programs to expand how the library serves the diverse needs of existing patrons and potential library users. By offering a greater variety of flexible access to library services, these programs not only accommodate schedules but also help broaden the library's reach, fostering greater involvement and inclusion.

References

Bucy, R. (2022). Native American student experiences of the academic library. *College & Research Libraries*, *83*(3), 416–433. https://doi.org/10.5860/crl.83.3.416

Carnegie Classification of Institutions of Higher Education. (2024). American Council on Education. https://carnegieclassifications.acenet.edu/elective-classifications/community-engagement/

Carter, T. M., & Seaman, P. (2011). The management and support of outreach in academic libraries. *Reference & User Services Quarterly*, *51*(2), 163–171. https://doi.org/10.5860/rusq.51n2.163

Catalano, M., Essinger, C., Ferimer, S., Lewin-Lane, S., & Vaughn, P. (2017). At the center of things: How an academic library built a bridge between art and science on campus. *Collaborative Librarianship*, *9*(2), 90–96.

Diaz, S. A. (2019). Outreach in academic librarianship: A concept analysis and definition. *The Journal of Academic Librarianship*, *45*(3), 184–194. https://doi.org/10.1016/j.acalib.2019.02.012

Hodge, M. (2022). First-generation students and the first-year transition: State of the literature and implications for library researchers. *The Journal of Academic Librarianship*, *48*(4). https://doi.org/10.1016/j.acalib.2022.102554

Kiebler, J., & Lafazan, B. (2020). Reshaping academic library outreach efforts using LibInsight. *Marketing Libraries Journal*, *4*(2), 21–36.

Long, D. (2011). Latino students' perceptions of the academic library. *Journal of Academic Librarianship*, *37*(6), 504–511. https://doi.org/10.1016/j.acalib.2011.07.007

Stocking, H., Bucy, R., & Ramirez-Reyes, C. (2024). First-gen and the library: A survey of student perceptions of academic library services. *Performance Measurement and Metrics*, *25*(3/4), 127–142. https://doi.org/10.1108/PMM-11-2023-0037

Strittmatter, C. (2008). If you pour it, they will come: Hosting a cocktail reception to promote services to faculty. *Public Services Quarterly*, *4*(3), 269–276. https://doi.org/10.1080/15228950802128777

Wagner, M., & Cho, R. M. (2019). 24/7 Study: Conducting a focus to improve services. *College & Research Libraries News*, *80*(6), 345, https://doi.org/10.5860/crln.80.6.345

Wallace, W. S., Soehner, C., & Hatch, G. (2021). Measuring the impact of a library-hosted showcase event. *Journal of Academic Librarianship*, *47*(5). https://doi.org/10.1016/j.acalib.2021.102428

Open Educational Resource Advocacy: Examining Strategies and Resources for OER Supporters

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It's not easy to bring an open educational resource (OER) into existence, and creators are sometimes dismayed when the OER they've been working so hard on does not gain traction with their intended audience. Once the OER—be it a textbook or other material—is produced, what's next? How will other educators know that the newly composed OER exists, and why should they want to adopt it for their classrooms? The library can help. Three academic librarians received an Affordable Learning Georgia Research Grant to conduct research on OER sustainability and advocacy. The grant team recruited a data analyst and together, they conducted a qualitative research study using an online survey instrument, receiving 62 responses from librarians and OER creators. Themes that emerged from the study include challenges (i.e., lack of time, energy, and support), communication and engagement (i.e., at events and other programming), and structured strategies (i.e., encouraging faculty and other creators to update their materials). Findings revealed practical strategies and resources for OER creators and advocates, including depositing into collections, making recommendations, and sharing via word of mouth and listservs. This article concludes with steps librarians and supporters can take to help OER creators design an advocacy plan and prioritize outreach.

Introduction

As the price tag of higher education rises, promoting the discoverability of open educational resources (OER) becomes increasingly vital. The literature suggests two common barriers to OER adoption: lack of awareness about the existence of OER and the process of OER discovery (Allen & Seaman, 2014). The urgency is underscored by a 2021 Student Public Interest Research Group (PIRG) report showing that 10% of surveyed students missed meals due to impact

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factors related to COVID-19 and that 82% of those students also skipped buying textbooks (Nagle & Vitez, 2021). Simply publishing an OER is not enough: ensuring students are granted day-one access requires promotion, advocacy, and considerations of sustainability, which often fall outside the expertise of an OER creators' subject specialty. Libraries and librarians, both positioned at the intersection of OER, advocacy, and outreach, are in a prime position to support OER creators as they establish and maintain the sustainability of their work.

The research study investigated OER sustainability and advocacy, guided by three questions: How do librarians promote OER created by faculty? How do OER creators perceive the promotion of their work? And how are OER creators sustaining their work? Themes that emerged from this study include challenges, sharing, and promotion strategies. Findings revealed that, while librarians and OER creators and advocates cited challenges, such as lack of time, staffing, and institutional support, they continued to engage in outreach through events, innovative programming, and informal networks. Based on the results, the authors have discovered steps for librarians to help OER creators and supporters advocate for affordable education.

Promotion strategies identified include encouraging updates to materials, submitting OER for peer review, leveraging word-of-mouth recommendations, depositing in OER collections and repositories, and sharing on listservs. Strategic outreach and strong advocacy by librarians and OER champions can both go a long way in promoting open education to its fullest extent and attempt to address any perceived barriers (Woodward, 2017). The authors explore these solutions and demystify strategies for both creators and advocates, utilizing specific experiences advocating for open education at their respective institutions.

Literature Review

Institution-level OER programs and positions dedicated to advocating for and promoting the creation of OER have expanded since the Cape Town Declaration in 2007 ("Cape Town," n.d.). Some institutions are in the beginning stages of their OER programs, while others have programs that would be considered mature (Curtis, 2024). Regardless of an OER program's maturity level, many in the open education space have begun to explore questions of maintenance and sustainability. For example, how can OER creators and advocates ensure the longevity of their OER programs and promote the sustainability of the OER created by faculty at their institutions? One suggested solution to aid in the sustainability of OER is to improve the discoverability of the resources. If faculty and librarians can easily locate available OER, the increase in OER usage due to ease of discovery could help librarians illustrate impact at their institutions. Another solution is the creation and use of sustainability models. Sustainability models for OER projects can be divided into two concepts: sustainability in terms of discovery; and sustainability in terms of production. While there are several resources available to librarians and other OER champions that outline how to advocate for OER initiatives, usage, and programs, these resources do not explain in depth how to advocate and plan for the distribution of OER post-production.

Barriers to OER Adoption and Promotion

Discoverability Issues

One of the most-cited barriers to more widespread adoption of OER among faculty is the discoverability of resources (Swain & Pathak, 2024). Belikov and Bodily (2016) found that

faculty participants expressed frustration and serious concern about their ability to locate open resources. One participant of their study noted, "Material that is free and available needs to be marketed and collated in a database properly" (Belikov & Bodily, 2016, p. 240). Faculty in the study also stated that if they could overcome the barrier of discovery, they would likely be more amenable to adopting OER in their courses (Belikov & Bodily, 2016). Though there are many well-known OER repositories, such as OER Commons and the Open Textbook Library, other lesser-known repositories exist that allow faculty and librarians to upload or deposit OER. Unfortunately, many OER repositories remain difficult for faculty to find and navigate.

Solutions to Discoverability Issues

One suggestion to improve discoverability is to improve metadata of OER in various repositories. Kessler and Pérez-Berenguer (2023) discuss the development and features of INDLeOpen, an open-source authoring tool that aims to assist authors with creating accessible and inclusive OER. INDLeOpen claims to assist with discoverability of the resources created on its platform by making use of a thesaurus to promote multilingual interoperability, as well as by sending all resources to an institution's institutional repository (IR) (Kessler & Pérez-Berenguer, 2023). Redirecting resources to the IR allows library personnel to review the metadata prior to publication. Burnett et al. (2023) also sought to address the discoverability issue by developing a hybrid metadata standard. This standard was based loosely on the Institute of Electrical and Electronics Engineers' Learning Object Metadata standard for learning objects and attributes (Burnett et al., 2023). Burnett et al. (2023) used this standard, as well as elements in their IR, to promote OER findability both in their IR and library catalog.

Another possible solution to OER discoverability barriers is to improve and connect various OER repositories. Otto and Kerres (2022) posit that, rather than creating more OER repositories, the open education community should focus on finding ways to connect the platforms that already exist. In their article, they use the concept of learning ecosystems to show how these connections could be made through metadata standards and plugins (Otto & Kerres, 2022). Otto and Kerres (2022) cite a study conducted by Tlili et al. (2021) that illustrates how the use of machine learning technologies and Natural Language Processing techniques can be used to automatically tag OER metadata, analyze tagged OER to map them together, and build OER recommendation systems.

OER Post-Production Sustainability

Sustainability for OER programs at the institutional level is important, but so too is the sustainability of OER projects created within those programs. Much of the current literature discusses the importance of sustaining institutional OER programs and the need to consider sustainability when implementing an OER program (Whitchurch & Jensen, 2023); however, more consideration is needed early in the OER production process to plan how the published OER will be updated and accessed once it has been published (Nikoi & Armellini, 2012). One of the 2019 UNESCO OER recommendation areas included promoting the creation of sustainable OER models (Ossinannilsson et al., 2023). While many countries around the world have found ways to implement the UNESCO recommendation, Ossinannilsson et al. (2023) note that more needs to be done in this regard. Titli et al. (2023) explained that, when institutions develop one or more sustainability models for OER programs, the production

workflow of creating an OER should be separated from the distribution workflow of that now-published OER. OER production is a complex process, and distributing and promoting the newly published OER should be considered when creating a sustainability model and OER production workflow (Titli et al., 2023). As institutions are considering whether to implement OER programs, sustainability models and the inclusion of a workflow for the distribution and promotion of OER post-production should both be vital parts of the implementation process; the model used will likely depend on the maturity level of the OER program (Titli et al., 2023).

The literature reveals that one of the primary barriers to OER adoption for many faculty pertains to the discoverability of resources. There are multiple OER repositories in existence; however, they may not use the same metadata schemas. Therefore, creating metadata standards would aid discoverability. As these repositories are generally not connected to one another, one solution may be to use emerging technologies to link existing repositories. While improving discoverability may aid sustainability, the current literature suggests the sustainability of OER production practices should also be considered, including separating the planning of OER production from the planning of OER distribution. However, current literature does not address how librarians and faculty can promote and sustain OER post-production. There are numerous resources available to librarians and other OER advocates that demonstrate how to advocate for OER initiatives, OER usage, and OER programs; however, these resources do not explain in depth how to advocate and plan for post-production OER distribution.

Research Design

Study Context

This study sought to examine strategies and resources for the promotion and sustainability of OER from the perspectives of academic librarians and OER creators. The study used a mixed methods research inquiry methodology to investigate the experiences and perceptions of those involved in OER creation, advocacy, and sustainability. By focusing on the promotion, advocacy, and sustainability of OER, the research aims to provide actionable insights for the OER community with an emphasis on leveraging the intersection between libraries, OER creators, and outreach strategies. The research addresses a growing need to explore how OER can be effectively utilized to increase access to affordable educational materials.

The questions guiding the research study were:

1. How do librarians promote OER created by faculty?
2. How do OER creators perceive the promotion of their work?
3. How are OER creators sustaining their work?

Survey Development

The research team developed a 15-question survey (see Appendix A) to address the research questions and capture the experiences and perceptions of OER creators and advocates. The survey, hosted on the Qualtrics platform, included both quantitative multiple-choice questions and open-ended questions designed to elicit detailed responses about participant experiences with OER advocacy and promotion. Demographic questions were included to better understand the participant population and were limited to type of institution and primary job function. The survey consisted of 19 questions divided into three sections: (1) librarians promoting OER created by faculty, (2) OER creators' perceptions of the promotion of their work, and (3) strategies for sustaining OER. The research team asked colleagues who were

knowledgeable about the subject matter to review the survey and provide feedback on the questions. A small pilot of the survey took place, and five colleagues were invited to test the survey and provide feedback on both content and structure. The pilot participants were also asked to assume either the role of a librarian or an OER creator to test the various skip-logic incorporated to ensure specific participants received the correct questions. After minor revisions to the survey, participants were invited to complete the survey, which took approximately 20 to 30 minutes, and were assured of confidentiality through an informed consent process. The data collection period spanned 11 weeks, and the survey was monitored regularly to track responses. No personally identifiable information was collected, and the survey was anonymized to ensure participant confidentiality and privacy. The following definitions were provided to survey participants:

- OER: our definition of an OER is an openly licensed (i.e., public domain/Creative Commons) educational material that can be used, reused, modified, and redistributed for teaching, learning, and researching purposes free of charge.
- Creator: our definition of an OER creator is an individual (i.e., a librarian, faculty member, teacher, etc.) who creates or adapts an OER for teaching, learning, and/or researching purposes.

Ethical Considerations

The survey was developed, and the research project and protocol were submitted to the Kennesaw State University (KSU) Institutional Review Board (with an Individual Investigator Agreement from the member of the research team from Texas Tech University) for approval. The research project and protocol were deemed exempt by the KSU Institutional Review Board (KSU IRB-FY24-323).

Sample and Recruitment

The target population for the study included academic librarians, faculty members, and other individuals, such as university staff, adjuncts, or graduate students, who have either adapted, created, or assisted in the promotion of an OER within the past five years. Participants were required to be over the age of 18 and to self-identify as being part of one of these groups. To recruit participants, the survey was distributed through a variety of scholarly communication and library-specific listservs, including the American Library Association (ALA) Scholarly Communications listserv, the Association of College and Research Libraries (ACRL) Instruction Section listserv, and the SPARC OE Forum listserv. To recruit non-librarian participants, the research team leveraged their connections with Georgia- and Texas-specific OER listservs.

Convenience sampling was also used through the Affordable Learning Georgia (ALG) listserv, which includes all persons who have received an ALG grant or who are associated with the organization. ALG is the funding agency for this research project, and the ALG listserv served as a convenience sample population. A recruitment email was sent to the listservs, outlining the purpose of the study and the criteria for participation. This recruitment method was selected to reach a broad and relevant audience of individuals actively engaged in OER creation, advocacy, and support. The survey was open for 11 weeks, from early February to late April 2024, with periodic reminders sent to encourage participation. The study received 98 responses that provided a diverse set of perspectives on OER promotion and sustainability.

Data Analysis

A thematic analysis approach was employed to analyze the qualitative data collected from the survey. After the survey closed, the data were cleaned by filtering out non-consent responses, insufficient entries, and potential bot responses. The remaining 62 usable responses were then grouped and categorized into relevant clusters, such as the type of institution, student size, and strategies for promoting OER. Each team member independently coded a selection of responses within these clusters, identifying key words, phrases, and recurring themes. The team then averaged their codes to derive major themes, focusing on the most prevalent patterns in the data.

After the major codes were derived, one research team member continued with coding the qualitative data. This process helped identify three major themes related to OER promotion: challenges, communication and engagement, and structured strategies. The use of multiple coders and averaging of codes ensured the reliability and validity of the qualitative analysis. Partially complete surveys were included in the analysis, depending on the level of completion, to capture as much relevant data as possible. Microsoft Excel was used to facilitate the analysis process, allowing for a thorough examination of participant responses. Microsoft Excel was used as the platform for analysis because it was the most accessible and freely available product across all the researchers' institutions.

Limitations

While the study offers valuable insights into the promotion and sustainability of OER, it is subject to several limitations. First, the recruitment process relied on self-selection through listservs, which may introduce bias, as participants who are more engaged in OER advocacy may have been more likely to respond. Recruitment also relied heavily on academic librarian listservs and personal connections, thus limiting the number of non-librarian OER creators who had the opportunity to respond. Additionally, the survey instrument, despite being designed to capture in-depth responses, relies on self-reported data, which can be subject to biases such as social desirability and recall bias.

The qualitative nature of the data analysis, while appropriate for exploring complex experiences, may also be influenced by the subjective interpretation of the researchers, despite efforts to ensure reliability through multiple coders. Furthermore, the study's findings may have limited generalizability beyond the specific population of academic librarians and OER creators who participated, particularly given the diversity of institutional contexts. These limitations suggest that while the study contributes to the understanding of OER promotion strategies, further research is needed to explore these issues in different contexts and with more diverse populations.

Findings

Demographics

The research team chose to collect only two demographics from participants: type of institution and primary position. Additional demographics, such as age, race, and gender, were not necessary for the focus of this research, though additional research into the perceptions and experiences of OER creators and advocates may wish to explore more granular demographics and identities. More than two-thirds of the 62 qualified respondents to the survey indicated they were either employed at a public academic institution with 20,001+ students (n = 20; 32%), a public academic institution with 10,001–20,000 students (n = 14; 23%), or a public academic institution with 5,001–10,000 students (n = 13; 21%). The remaining third

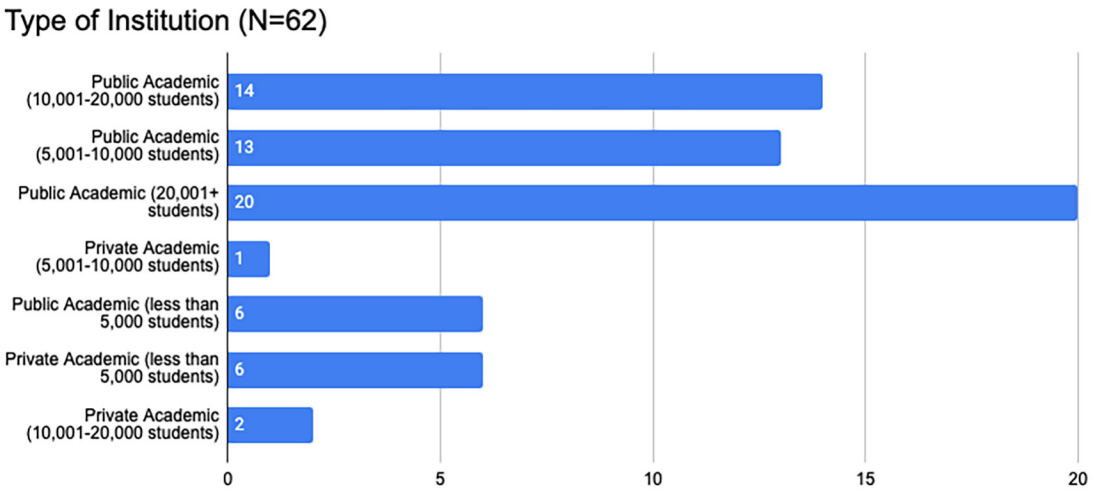


Figure 1. Type of Institution as Self-Reported by Respondents.

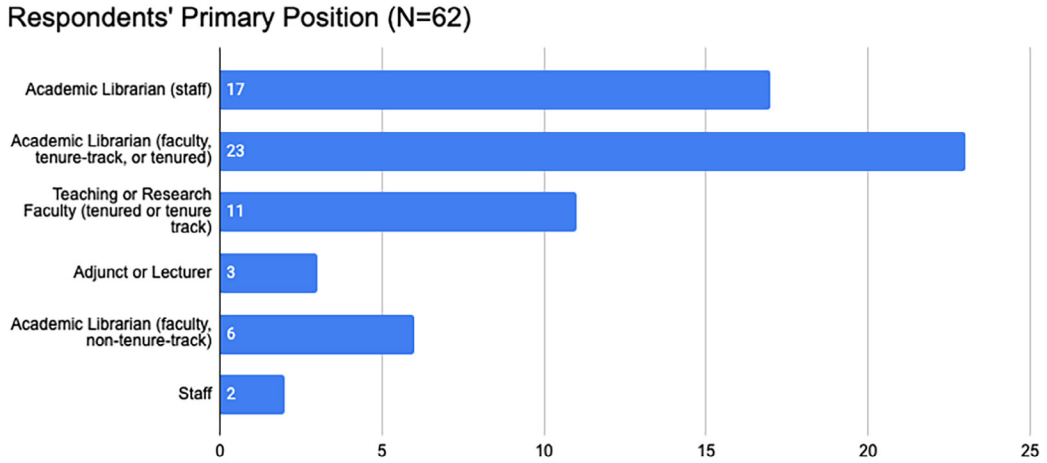


Figure 2. Respondents, Primary Position.

of respondents self-identified as being employed at private institutions. Figure 1 shows the distribution of institution demographics.

Due to the tendency to recruit via academic library listservs and academic library connections, it is no surprise that nearly two-thirds of respondents self-identified as academic librarians (n = 46; 74%). The remaining respondents (n = 16) self-identified as teaching or research faculty, adjuncts or lecturers, or staff. Figure 2 shows the distribution of respondents' primary position.

Overview of Themes

Three major themes emerged as the result of the qualitative survey data: challenges, communication and engagement, and structured strategies. "Challenges" describes the major challenges faced by academic librarians and/or OER creators in promoting and sustaining created or adapted OER. "Communication and engagement" describes the most common ways in which academic librarians and/or OER creators sought to share created or adapted OER in both passive and active ways. "Structured strategies" describes the ways in which academic librarians and/or OER creators make intentional, structured efforts to promote created or adapted OER. Table 1 details the code clusters associated with the major themes.

TABLE 1
Summary of Themes and Code Clusters

Themes	Code Clusters
Challenges (i.e., major challenges faced by academic librarians and/or OER creators in promoting and sustaining created or adapted OER)	**1.** Perception **a.** Myth/perspectives **b.** Lack of... **i.** Time **1.** Priorities **ii.** Energy **1.** Too much work **iii.** Support **1.** Lack of funding **iv.** Personnel **1.** Siloed support **2.** Lack of capacity **v.** Creators **vi.** Resources **vii.** Content **viii.** Interest **1.** Disinterested faculty **2.** Administrative challenges **a.** Approval **b.** Ignored solutions **c.** Institutional support/mandate **3.** No plan **4.** Updating materials **5.** Repeated attempts
Communication and Engagement (i.e., most common ways in which academic librarians and/or OER creators sought to share created or adapted OER, may be passive or active)	**1.** Word of mouth **2.** Librarian **3.** Conferences **a.** Recognition **i.** By faculty **ii.** Annually **iii.** By awards **b.** Presentations **c.** Local conferences **4.** Events **a.** Social networking **b.** Competition **c.** Presentations **i.** Open Education Week **5.** Websites **a.** Institutional **i.** OER websites **b.** Discoverability **i.** Institutional publishing and distribution **6.** Social media

TABLE 1 (Continued)
Summary of Themes and Code Clusters

Themes	Code Clusters

Structured Strategies (i.e., the intentional ways in which academic librarians and/or OER creators make efforts to promote created or adapted OER)	**1.** Update material
	2. Newsletter
	3. Repositories
	  a. General
	  b. Specific
	  c. Open
	  d. Institutional
	4. Peer review
	  a. Efficient resource evaluation
	  b. Rebus guide
	  c. Guide for faculty
	  d. Faculty reviews
	5. Distribution
	  a. Listservs
	  b. Discipline-specific
	  c. Curriculum specific OER
	6. Partner or partnership
	  a. Report to State
	  b. Internal collaboration - Library partnership
	7. OER staff or team

Theme 1: Challenges

The theme of challenges yielded five distinct code clusters: perception, administrative challenges, no plan, updating materials, and repeated attempts (see Table 1). Based on the data, the research team defined the top two code clusters within the theme of challenges as follows:

- Lack of: things respondents identified as missing that, if present, could lead to success in OER promotion, including time, energy, support, personnel, and interest.
- Administrative challenges: hurdles encountered at the administrative level, including approvals, ignored solutions, and receiving an institutional support or mandate (i.e., either having an institutional support or mandate or not having institutional support or mandate).

Participants were asked to share challenges faced in promoting OER and how they addressed them. While many participants reported challenges with top-down hierarchical approval for OER funding and support, the challenges of disinterested faculty and lack of both support and time were also present throughout the data.

The "lack of" sub-code cluster was the most significant within the "perception" code cluster. Of all terms related to the "lack of" sub-code cluster, time was frequently reported as a major challenge to OER promotion. As one participant noted, "Time is the biggest challenge. We are so busy with the adopt, adapt and create aspect that promotion is the last thing thought about" (Academic librarian, staff, public academic institution, 10,001–20,000 students). Another participant detailed various deficits in promoting faculty-created OER because of several factors, including lack of interest, lack of time, and lack of support:

> Some faculty have been disinterested in promoting their OER. Our teaching-focused institution doesn't prioritize maintenance of academic profiles. Most of all: time constraints (on both the faculty members' and my parts) limits what we're able to do, and the general lack of top-down administrative support for OER means other faculty around the institution are not receptive (Academic librarian, faculty, tenure track or tenured, public academic institution, 5,001–10,000 students).

Another participant gave a frank response detailing further the lack of interest from faculty in promoting created OER, indicating that OER creation at their institution stems from immediate need rather than strategic planning and alignment with institutional education goals:

> In reality, faculty are not interested in promotion. Rather what they are creating is more for immediate concerns (e.g., chair told them it has to be done, want their students to benefit). While bigger concepts of sharing with the world are great, faculty rarely have the bandwidth or support to promote their work (Academic librarian, faculty, tenure track or tenured, public academic institution, 20,001+ students).

Most respondents who detailed specific challenges to OER promotion and sustainability in the survey were academic librarians. Two respondents who self-identified as teaching or research faculty shared that their biggest challenges to sustaining the OER they have created are time and funding. Another respondent who self-identified as an adjunct or lecturer discussed the importance of buy-in as a challenge: "Faculty want to use what their colleagues use. If you don't have that one Faculty who leads the way then it is difficult to gain traction" (Adjunct or lecturer, public academic institution, less than 5,000 students).

Interestingly, respondents also discussed challenges within answers to questions that the researchers did not expect. For example, one survey question asked, "If you would like to, share specific examples of how you promote OER created by faculty at your institution," and one respondent answered, "Several faculty became 'agitated' when approached" (Academic librarian, faculty, non-tenure-track, private academic institution, less than 5,000 students). Another respondent to the same question answered, "We have no publishing support at our library, and I am the only person at the institution supporting OER and open education efforts (and it isn't my only job)" (Academic librarian, faculty, tenure-track or tenured, public academic institution, 10,001–20,000 students). That particular survey question did not prompt respondents to detail any challenges faced when promoting OER, yet multiple respondents took the opportunity to express frustration and detail specific challenges.

Recommended Advocacy Strategy: Choosing a Promotion Strategy

The process of promoting an OER and sustaining its use is not without its challenges, as evidenced by the survey responses. Results of the study suggest that, while some librarians and creators do not participate in the promotion or sustainability of their OER, others utilize grassroots campaigns to market their work. Even though faculty and librarians generally do not have support, time, or a strategic plan, there are pockets of participants who engage in small but seemingly widespread campaigns to alert others to their OER creation. Creators

TABLE 2
Librarian OER Promotion Strategies

Strategy	Frequency
Promoting through word of mouth (i.e., presentations, sharing the OER with other relevant faculty or departments, etc.)	35
Recommending OER to faculty looking for course texts	34
Encouraging creators to deposit or link their OER in their institution's repository	29
Encouraging your library to add the OER to an OER collection	24
Recommending OER to librarian colleagues outside of your institution	17
Emailing information about the OER to an OER listserv	15
Encouraging the creator to get the OER peer reviewed	11
University press releases	9
Social media promotion (from your professional or institutional accounts)	8
Encouraging creators to add the OER to their academic profile (i.e., Google Scholar, ResearchGate, ORCID, etc.)	8
Awards for OER creation	8
Promoting through the campus bookstore	7
Encouraging creators to promote on their own social media accounts (both personal and/or professional)	5
Encouraging the creator to submit the OER for review in journals that publish OER reviews and/or textbook reviews	4
Social media promotion (from your personal accounts)	1

and librarians should persist to reach a wide audience and ensure the OER for which they are responsible makes it into the hands of those who will benefit from its use.

After conducting the research study and analyzing the results, the grant team identified various strategies for both librarians and creators to aid in the promotion and sustainability of their OER and to overcome the challenges. Top strategies include promoting through word of mouth and listservs, depositing into an OER collection, and recommending OER to faculty and librarians (see Table 2).

Theme 2: Communication and Engagement

The theme of "communication and engagement" yielded six distinct code clusters: word of mouth, librarian, conferences, events, websites, and social media (see Table 1). Based on the data, the research team defined the top three code clusters within the theme of "communication and engagement" as follows:

- Conferences: attending and sharing about OER work at conferences, including recognition that may come from conference or association awards.
- Events: sharing about OER at events that may or may not be targeted to OER but are not necessarily conference-specific, including competitions such as institutional awards.
- Websites: sharing about OER on websites related to OER, both specific to the creator's institution and/or websites designed to collect and distribute OER.

Librarian respondents were asked, "Are there any specific campaigns and initiatives undertaken by your library to increase awareness of faculty-created OER?" to which they had the opportunity to share examples—some passive, some with intent—and report on perceived effectiveness. Many respondents reported that OER was promoted mostly through conferences and presentations delivered about the work that librarians have done to help faculty with OER and their OER experiences.

Events or event-like campaigns and initiatives were also discussed; several participants offered specific examples of innovative programming and mechanisms for recognition. One respondent detailed how their university uses email signatures to elevate the visibility of OER adopters and creators:

> We do multiple annual recognition events for faculty using and creating OER as part of a grant requirement we receive from our university's chancellor's office. We provide digital badges for adopters and creators to include in their email signatures (Academic librarian, faculty, tenure-track or tenured, public academic institution, 20,001+ students).

Another respondent shared about a recurring program promoting subject-specific OER:

> During Open Education Week, I co-host a virtual OER Showcase over Zoom in collaboration with another organization to promote new OER in French created by faculty and instructors from our institutions. We have done this for the last three years (Academic librarian, faculty, tenure-track or tenured, public academic institution, 20,001+ students).

Competition and recognition were oftentimes correlated with promotional events. One respondent reported, "We have an 'Are you a Textbook Hero?' campaign where faculty can nominate themselves or their colleagues as textbook heroes!" (Academic librarian, non-tenure-track, public academic institution, 20,00+ students). Several other respondents indicated that they did their best to encourage faculty to share and distribute the OER they create and adapt on websites to increase discoverability, such as institutional repositories and OER aggregates or collections.

Recommended Advocacy Strategy: Word of Mouth

Communication, engagement, and promotion through word-of-mouth campaigns is a viable option to market OER to a wide audience. This strategy can include presenting about OER projects at conferences, workshops, departmental meetings, or other opportunities that engage the scholarly community to listen and learn. According to the study data, communicating through word of mouth was the most selected strategy for librarians when promoting OER. For creators, word of mouth was the second most selected promotion strategy. Furthermore, the study data reveals that word of mouth is a highly effective method of promotion, as evidenced in Table 2. Word-of-mouth communication and engagement campaigns play a significant role in changing and influencing the behaviors and attitudes of their intended audience (Siddike & Kiran, 2015) and, if used effectively, can result in success.

TABLE 3
OER Creator Promotion Strategies

Strategy	Times Selected
Depositing or linking your OER in your institution's digital repository	22
Promoting through word of mouth (i.e., presentations, sharing the OER with other relevant faculty or departments, etc.)	21
Recommending OER to colleagues outside of your institution	18
Emailing information about the OER to a listserv	16
Encouraging your library to add the OER to an OER collection	13
Recommending OER to faculty looking for course texts	13
Partnering with your institution's librarians to promote your OER	12
Adding your OER to your academic profile (i.e., Google Scholar, ResearchGate, ORCID, etc.)	11
Social media promotion (from your personal accounts)	7
Awards for OER creation	7
Having your OER peer reviewed	7
Promotion through campus bookstore	4
University press releases	3
Submitting your OER for review in journals that publish OER reviews and/or textbook reviews	1

Based on the data, a word-of-mouth campaign may be one of the most effective strategies (see Table 3). Firstly, those looking to utilize word of mouth must comprehend their institution's culture. It is beneficial to understand and analyze faculty and librarians' perceptions and feelings toward open education in general. Positive perceptions of open education can be leveraged to build further trust with stakeholders. OER creators and supporters should consider hosting educational workshops and trainings on OER, as well as crafting off-the-cuff elevator pitches that can be recited during spontaneous meetings with faculty, librarians, students, and others interested in participating in the open education movement. Many survey respondents identified challenges—including lack of time, energy, and support, among others—which can be significant demotivators to promoting OER. Word-of-mouth campaigns, however, can be a less time-intensive solution to spread news of recently created OER.

Institutional events can serve as opportunities to communicate and promote OER through word of mouth too. For example, OER creators and promoters might consider attending or hosting author receptions, also referred to as research and scholarship recognition receptions, that celebrate and highlight faculty research, scholarship, and other scholarly output (Makula, 2024). Such events may prove to be an effective venue for sharing OER to the institution's community. Another example: academic librarians and employees at KSU host events for Open Education Week and their All Things Open conference to encourage and highlight OER and the work of OER champions (Kennesaw State University [KSU], n.d.). Events are open to the wider scholarly communication and academic community, and several speakers have used this platform to promote recent OER projects. Events provide OER creators and supporters an opportunity to discuss the creation, adoption, adaptation, and support processes, which may in turn inspire their audience.

Theme 3: Structured Strategies

The theme of "structured strategies" yielded seven distinct code clusters: update material, newsletter, repositories, peer review, distribution, partner/partnership, and OER staff/team (see Table 1). Based on the data, the research team defined the top two code clusters within the theme of "structured strategies" as follows:

- Repositories: both institutional repositories hosted and maintained by respondents' academic institutions and OER specific repositories outside of academic institutions.
- Promotion: general promotion primarily via listserv emails to highlight discipline-specific or curriculum-specific OER.

Most librarian respondents reported on their intentional promotion strategies by detailing how they encourage faculty to keep materials updated and peer reviewed; however, in several cases, respondents indicated that there is only so much a librarian can do. One respondent shared that, in addition to basic promotion strategies, they "help [the faculty member] think through the disciplinary avenues of getting the word out—but [the faculty member] really know[s] best on the disciplinary front" (Academic librarian, staff, private academic institution, less than 5,000 students).

This sentiment rang true for other librarian participants; a common thread was faculty OER creators doing the bare minimum for promotion of their work. The sentiment of "there's only so much we can do" re-emphasizes the sub-theme "lack of" within the major theme of "challenges." Insufficient time, energy, support, and resources directly impede librarians' effectiveness in supporting the creation, promotion, and sustainability of OER. Consequently, it was unsurprising to the research team that these deficiencies foster a mindset of inherent limitations on what librarians can achieve in this area.

It was encouraging to see the use of institutional repositories emerge from the data. Numerous librarian participants and some non-librarian participants mentioned utilizing their institution's institutional repository or other library-based resources. In response to a question about methods and strategies to ensure the sustainability of an OER project, one non-librarian respondent said that they work "closely with [their] university's library because they host the website that the OER is stored on" (Teaching or research faculty, public academic institution, 5,001–10,000 students). This collaboration highlights the pivotal role that libraries and their repositories play in sustaining OER initiatives, showcasing a successful strategy for long-term accessibility and support of open resources.

Recommended Advocacy Strategy: Depositing into an OER Collection

Creators of OER should consider depositing a copy of their OER into a digital or print collection created specifically to house such materials. Supporters of OER should likewise consider encouraging their faculty or librarians to deposit their OER into such collections. Surveyed librarians ranked encouraging creators to deposit or link to their OER in their institution's repository, as well as encouraging the library to add the OER to an OER collection, as the third and fourth best strategies, respectively. Creators ranked depositing or linking their OER in an institutional repository as the best strategy overall. Digital promotion was listed in the top four most effective methods of promotion (see Table 4).

The researchers highly recommend creators and supporters utilize their institutional repository. OER can reach a much wider audience through deposit or linking in an institutional repository, much like an article in an open access journal (Langham-Putrow et al., 2021). The

TABLE 4
Most Effective Methods of Promotion (n = 35)

Strategy	Times Selected
Word of mouth	13
Partnering with institutional and/or external partners (i.e., bookstore, librarians, journals, university presses, OER Commons, OpenStax, etc.)	13
Other	5
Digital promotion	4

institutional repository may have a collection already in existence—for example, the OER collection at KSU (Digital Commons@ KSU, n.d.). Another example is Lindenwood University's institutional repository, the DigitalCommons@ Lindenwood, which has increased internal and external awareness of utilization of their small collection of OER, resulting in one OER textbook reaching 225 downloads in the span of five months (Hutson et al., 2022). Alternatively, OER creators and supporters may need to build a collection from scratch.

A prevalent sentiment among study respondents was that librarians are faced with the barrier of "there's only so much we can do." To assuage this burden, the researchers implore creators and supporters to collaborate with others in the library who may offer support in a myriad of ways. For example, those who intend to deposit or link their OER in their institution's repository should collaborate with the institutional repository supervisor, specialist, or other employees to create an effective workflow for deposit and linking. The institutional repository employees can assist in guaranteeing the OER will be added to the correct location and with the proper metadata to ensure the work is findable and discoverable.

Additionally, OER can and should be added to the general library collection. Creators and supporters of OER may consider further collaboration with the library's collection development librarian (or other library employees with collection development responsibilities) to incorporate OER into the library's collection. As OER formats include digital or print, either or both versions should be considered welcome additions to the library stacks and electronic shelves.

These themes illuminate the significant impact that systemic challenges have on librarians' ability to promote and sustain OER initiatives. The pervasive lack of time, support, and administrative backing not only hampers their effectiveness but also fosters a mindset of inherent limitations. Nonetheless, the successful collaborations between librarians and faculty, particularly through using institutional repositories, demonstrate a powerful avenue for overcoming these obstacles. Addressing these issues is crucial; by enhancing support and resources, institutions can unlock the full potential of OER, leading to greater accessibility, innovation, and equity in education.

Discussion

Drawing on 62 survey responses from academic librarians and OER creators, the analysis surfaced three cross-cutting themes: persistent challenges (e.g., limited time, staffing, and uneven institutional support); common communication and engagement modes (e.g., events and informal networks); and intentional, structured strategies for advocacy (e.g., placing OER in repositories and intentional promotion). Findings converge on a small set of high-yield tactics,

with OER creators ranking repository deposit as their most frequent strategy for promotion. At the same time, respondents emphasized the salience of time and support constraints, which shape what is feasible and heighten the value of lightweight, repeatable actions to improve OER discoverability and sustainability. The discussion that follows translates these results into practical, context-sensitive guidance for librarians, OER creators, and OER supporters to strengthen advocacy, visibility, and long-term maintenance of OER.

Post-Production Advocacy and Sustainability

This study advances OER scholarship by moving the conversation from production to post-production advocacy and sustainability. Whereas much of the literature describes how to build or evaluate OER programs (Boyle, 2023; Hollister & Patton, 2022; Petrich, 2020), this research elevates more concrete, lower-effort tactics that creators and librarians already employ and perceive as effective after an OER is released, with depositing into institutional or OER repositories, recommending published OER to colleagues, and leveraging word-of-mouth promotion. Recommending OER was among one of the most frequently selected strategies, and librarians are well-positioned to operationalize this strategy by spotlighting faculty-authored OER in department meetings, weaving tailored recommendations into one-on-one consultations, and highlighting relevant OER in newsletters or departmental emails. Faculty creators can complement these efforts by directly recommending their materials to their peers, offering a brief overview of the content at department meetings, and linking to the OER in syllabi. By naming post-production strategies and linking them to the constraints respondents reported, this research helps move OER advocacy beyond awareness and into true sustainability. A simple recommendation can go a long way, as this study's results evidenced.

Implications for Practice

Across the sample, respondents did not describe using a formal, written post-production plan to promote or sustain newly published OER. Those who did mention post-production promotion could not give concrete examples of intentional forethought. This absence may reflect limits of the sample and survey instrument; however, it also appears consistent with respondents' reliance on ad hoc tactics that they view as useful but that they apply unevenly. Alongside a literature base that emphasizes producing OER or evaluating programs, these patterns suggest that the post-publication period warrants more attention, as do the conditions that make structured follow-through unlikely.

The authors cautiously interpret the "why not" as a mix of time constraints, diffuse ownership of promotion tasks, and uneven administrative support for OER reported by participants. In response, the authors offer—not as a prescriptive model but as a practical suggestion—a simple, role-aware approach to post-production planning that OER creators and supporters, including librarians, may adapt locally. The intent is to translate familiar, lightweight actions into routine, time-bounded steps that could help move advocacy beyond general awareness and toward more sustainable visibility and use for both librarians and OER creators.

The findings point to a practical tension: librarians are well-positioned to enable OER promotion and sustainability, yet they often lack time and staffing to *own* promotion end-to-end. Rather than arguing that librarians should be the sole promoters of OER, the authors suggest a shared-responsibility model that reflects this study's collected evidence. In this model, librarians contribute where their leverage is highest (e.g., repository deposits and

metadata quality, discovery, light guidance on communication channels, and building relationships), while creators and other campus units activate discipline-specific networks and amplify OER work. This reframing aligns with what respondents do now and acknowledges the resource constraints they reported. Because the landscape of post-production options may feel overwhelming to OER creators, a librarian's most realistic and valuable contribution may be curation and coordination, rather than doing everything. Future research is needed to determine what kinds of post-production plans are the most effective and most considerate to the limited time that both librarians and OER creators often have.

Conclusion

Without a deliberate plan for promotion and advocacy, OER often fail to reach their intended audiences. Many creators and supporters struggle to gain visibility for their work, leaving OER underutilized despite their potential. This study examined the perspectives of academic librarians and OER creators through a qualitative survey and identified three central themes in OER promotion: challenges, communication and engagement, and structured strategies. The findings indicate that, while some librarians and creators engage in grassroots campaigns to promote their work, many lack the institutional support, time, or personnel needed to sustain OER advocacy efforts. Effective communication and engagement and structured strategies most often included word-of-mouth outreach, the use of listservs, depositing materials into OER repositories or collections, and recommending OER to faculty and colleagues. However, the absence of systematic planning likely limited the reach and long-term sustainability of these efforts. This research highlights the need for integrating advocacy and sustainability planning into the OER creation process itself, rather than treating promotion as an afterthought. Future studies might further explore mechanisms for embedding these practices into institutional workflows, OER grant programs, and professional development. Ultimately, while OER have significant potential to advance affordability and accessibility in higher education, their long-term impact depends on creators and supporters adopting intentional, collaborative, and strategic approaches to sharing and sustaining their work.

Conflict of Interest

The authors of this article declare no conflicts of interest in terms of research, authorship, or publication of this article.

Funding

The research project and research team were funded through an Affordable Learning Georgia (ALG) Affordable Materials Grant: Research Grants, Round 24, Grant RG008, to the amount of $10,000.

References

Allen, E., & Seaman, J. (2014). Opening the curriculum: Open educational resources in the U.S. higher education. Retrieved from Babson Survey Research Group Website: https://www.bayviewanalytics.com/reports/openingthecurriculum2014.pdf

Belikov, O. M., & Bodily, R. (2016). Incentives and barriers to OER adoption: A qualitative analysis of faculty perceptions. *Open Praxis, 8*(3), 235–246. https://doi.org/10.5944/openpraxis.8.3.308.

Boyle, C. (2023). Reviewing a 5-year grant-funded campus OER initiative: Reflections, successes, and challenges. *Open Praxis, 15*(3), 226–234. https://doi.org/10.3316/informit.378051633075061

Burnett, B., Cannon-Rech, N., Hunnicutt, R., & Mortimore, J. (2023). OER Discovery: Ensuring that OER rise to the top. *Journal of Open Educational Resources in Higher Education*, *2*(1), 222–242. https://doi.org/10.13001/joerhe.v2i1.7879

Cape Town Open Education Declaration. (n.d.). *Unlocking the promise of open educational resources*. https://www.capetowndeclaration.org/

Curtis, J. (2024, January 23). *Growing up: A maturity model for open education*. https://pressbooks.com/news/growing-up-a-maturity-model-for-open-education/

Digital Commons@ Kennesaw State University. (n.d.). *Open educational resource collection*. https://digitalcommons.kennesaw.edu/oertextbooks/

Hollister, C. V., & Patton, J. (2022). Faculty perceptions of an OER stipend program. *New Review of Academic Librarianship*, *28*(4), 435–453. https://doi.org/10.1080/13614533.2021.2000452

Hutson, J., Edele, S., Macdonald, L., Huffman, P., Messina, N., Pavone, M., Mueller, C., & Romero-Ghiretti, G. (2022). Open educational resources and institutional repositories: Role, challenges, and opportunities for libraries. *Journal of Higher Education Theory and Practice*, *22*(18), 101–112. https://doi.org/10.33423/jhetp.v22i18.5703

Johnson, A. (2020). Rediscovering an old genre: Open textbook publishing and university presses. *The Journal of Electronic Publishing*, *23*(1). https://doi.org/10.3998/3336451.0023.103

Kennesaw State University. (n.d.). *All things open*. https://digitalcommons.kennesaw.edu/ato/

Langham-Putrow, A., Bakker, C., & Reigelman, A. (2021). Is the open access citation advantage real? A systematic review of the citation of open access and subscription-based articles. *PLoS ONE*, *16*(6), e0253129. https://doi.org/10.1371/journal.pone.0253129

Makula, A. (2024). Celebrating the scholarly communication of our campus community: How can today's academic library play an integral role in its parent institution's scholarly output? *College & Research Libraries News*, *85*(9), 387–391. https://www.doi.org/10.5860/crln.85.9.387

Nagle, C. & Vitez, K. (2021). *Fixing the broken textbook market* (Report 3rd edition). U.S. PIRG Education Fund. https://studentpirgs.org/2021/02/24/fixing-the-broken-textbook-market-third-edition/

Nikoi, S., & Armellini, A. (2012). The OER mix in higher education: purpose, process, product, and policy. *Distance Education*, *33*(2), 165–184. https://doi.org/10.1080/01587919.2012.697439

Ossiannilsson, E., Leonor Ulloa Cazarez, R., Martins Gomes de Gusmão, C., Zhang, X., Blomgren, C., Chaplin-Cheyne, T., & Burgos, D. (2023). The UNESCO OER recommendation: Some observations from the ICDE OER advocacy committee. *International Review of Research in Open and Distributed Learning*, *24*(2), 229–240. https://doi.org/10.19173/irrodl.v24i2.7138

Otto, D., & Kerres, M. (2022). Increasing sustainability in open learning: Prospects of a distributed learning ecosystem for open educational resources. *Frontiers in Education*, *7*, 1–11. https://doi.org/10.3389/feduc.2022.866917

Petrich, M. (2020). Building an OER program based on stakeholder feedback. *Reference Services Review*, *48*(3), 489–501. https://doi.org/10.1108/RSR-03-2020-0013

Siddike, M. A. K., & Kiran, K. (2015). Marketing of academic library services through social networking site: Implications of electronic word-of-mouth. *Education for Information*, *31*(3), 143–159. https://www.doi.org/10.3233/EFI-150955

Tlili, A., Zhang, J., Papamitsiou, Z., Manske, S., Huang, R., Kinshuk, & Hoppe, H. U. (2021). Towards utilising emerging technologies to address the challenges of using open educational resources: A vision of the future. *Educational Technology Research and Development*, *69*(2), 515–532. https://doi.org/10.1007/s11423-021-09993-4

Tlili, A., Nascimbeni, F., Burgos, D., Zhang, X., Huang, R., & Chang, T. (2023) The evolution of sustainability models for open educational resources: Insights from the literature and experts. *Interactive Learning Environments*, *31*(3), 1421–1436. https://doi.org/10.1080/10494820.2020.1839507

Whitchurch, M., & Jensen, C. (2023). Contributors to the successful implementation of OER program components. *The International Journal of Open Educational Resources*, *5*(1).

Appendix A: SURVEY QUESTIONS

Section 1: How do librarians promote OER created by faculty?

1. What strategies do you (as a librarian) employ to promote OER created by faculty members at your institution? (select all that apply)
   - ○ Emailing information about the OER to an OER listserv
   - ○ Encouraging creators to deposit or link their OER in their institution's digital repository
   - ○ Social media promotion (from your personal accounts)
   - ○ Social media promotion (from your professional or institutional accounts)
   - ○ Encouraging creators to promote on their own social media accounts (both personal and/or professional)
   - ○ Encouraging creators to add the OER to their academic profile (i.e., Google Scholar, ResearchGate, ORCiD, etc.)
   - ○ Promoting through campus bookstore
   - ○ Promoting through word of mouth (i.e., presentations, sharing the OER with other relevant faculty or departments, etc.)
   - ○ Awards for OER creation
   - ○ University press releases
   - ○ Encouraging your library to add the OER to an OER collection
   - ○ Encouraging the creator to get the OER peer reviewed
   - ○ Encouraging the creator to submit the OER for review in journals that publish OER reviews and/or textbook reviews
   - ○ Recommending OER to librarian colleagues outside of your institution
   - ○ Recommending OER to faculty looking for course texts
   - ○ Other (please describe)

2. If you would like to share specific examples of how you promote OER created by faculty at your institution, please share them here.

3. Are there any specific campaigns or initiatives undertaken by your library to increase awareness of faculty-created OER? Please share anything that you or your library does that helps promote awareness of faculty-created OER.

4. When working with faculty who are creating OER, do you help them create a promotion plan for their OER once it is published?
   - ○ Yes
   - ○ No

5. If yes, please tell us about your experience and process of helping faculty create a promotion plan.

6. How often do you engage with faculty members to discuss the promotion of their OER? (select the option that best describes your average engagement)
   - ○ Daily
   - ○ Weekly
   - ○ Every other week
   - ○ Monthly
   - ○ Semesterly
   - ○ Yearly
   - ○ Never
   - ○ Other (please describe)

7. What challenges have you faced in promoting OER, and how have you addressed them?

Section 2: How do OER creators perceive the promotion of their work?

8. As an OER creator, how satisfied are you with the current promotion of your work?
   - ○ Very satisfied
   - ○ Satisfied
   - ○ Dissatisfied
   - ○ Very dissatisfied

9. What strategies do you (as an OER creator) employ to promote your OER? (select all that apply)
   - ○ Emailing information about the OER to a listserv
   - ○ Depositing or linking your OER in your institution's digital repository
   - ○ Social media promotion (from your personal accounts)
   - ○ Social media promotion (from your professional or institutional accounts)
   - ○ Adding your OER to your academic profile (i.e., Google Scholar, ResearchGate, ORCiD, etc.)
   - ○ Promoting through campus bookstore
   - ○ Promoting through word of mouth (i.e., presentations, sharing the OER with other relevant faculty or departments, etc.)
   - ○ Awards for OER creation
   - ○ University press releases
   - ○ Partnering with your institution's librarians to promote your OER
   - ○ Encouraging your library to add the OER to an OER collection
   - ○ Having your OER peer reviewed
   - ○ Submitting your OER for review in journals that publish OER reviews and/or textbook reviews
   - ○ Recommending OER to colleagues outside of your institution
   - ○ Recommending OER to faculty looking for course texts
   - ○ Other (please describe)

10. If you would like to share specific examples of how you promote your OER, please share them here.

11. In your opinion, which is the most effective way to promote your OER? (select one)
    - ○ Word of mouth
    - ○ Digital promotion
    - ○ Partnering with institutional and/or external partners (i.e., bookstore, librarians, journals, university presses, OER Commons, OpenStax, etc.)
    - ○ Other (please describe)

12. How often do you promote your OER? (select the option that best describes your average engagement)
    - ○ Daily
    - ○ Weekly
    - ○ Every other week
    - ○ Monthly
    - ○ Semesterly
    - ○ Yearly
    - ○ Once only after release
    - ○ Never
    - ○ Other (please describe)

Section 3: How are OER creators sustaining their work?

13. What methods or strategies do you use to ensure the sustainability of your OER projects? (i.e., ensuring the reuse, relevancy, and longevity of your OER 3+ years into the future).

14. Have you partnered with any organizations or individuals to sustain your OER work? If so, can you briefly describe these partnerships?

15. What challenges have you faced in sustaining your OER, and how have you addressed them?

AI Literacy in UAE Libraries: Assessing Competencies, Training Needs, and Ethical Considerations for the Digital Age

Zafar Imam Khan*

The study explores the current state of artificial intelligence (AI) literacy levels among library professionals employing a quantitative approach consisting of 92 surveys of LIS professionals in the United Arab Emirates (UAE). Findings of the study revealed the presence of strong cognitive competencies, while there were gaps observed in behavioral and normative competencies, especially related to AI biases, AI-powered learning, and ethical considerations. There was a disconnect observed between the perceived importance of AI skills and the effectiveness of the current training programs.

Introduction

Generative AI has created massive disruption in all sectors, including manufacturing, services, agriculture, medicine, and education, and has transformed a range of operations and services. Libraries are also starting to transform as they harness the power of AI; AI has the potential to enhance efficiency, accessibility, and personalization of services, thereby reshaping the traditional library landscape. This AI-related transformation has affected several traditional library services, such as automating routine tasks (e.g., cataloguing and classification of collections), and enhancing search functionalities and information retrieval. This can help create a much more accurate and organized library system in which librarians have more time to focus on intellectually stimulating activities (Preethi, 2024). The race to integrate AI into library services at a global level has presented both opportunities and challenges in terms of AI literacy among library professionals. AI literacy involves understanding of AI tools, their applications, and ethical considerations surrounding their use. AI in libraries has grown into prominence but has also left a significant gap in terms of AI literacy. This gap must be addressed both for the effective use of AI technologies and to educate library users. This study explores the existing status of the AI literacy level of professionals working in different libraries in the United Arab Emirates (UAE). Currently, no studies focus on the UAE or the Gulf Cooperation Council (GCC) region, and very few studies related to generative AI and libraries have focused on the developed world. Most librarians lack the necessary skills and have very limited or no

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knowledge or understanding of basic AI concepts, algorithms, and ethical issues concerning AI technologies (Kizhakkethil & Perryman, 2024). The librarian's role has been evolving over the years due to technological advancement; now, AI literacy is a crucial skill that can bridge the gap between digital literacy and ethical AI usage (Diyaolu et al., 2024). There is a growing concern related to the impact of AI on the media landscape and the lack of AI skills among library professionals (Andersdotter, 2023). Chigwada (2024) advocated for developing frameworks for AI digital literacy courses for LIS professionals in academic libraries to address these gaps, whereas Andersdotter (2023) recommended AI-related courses for librarians, as they have shown promising results. Proposing a framework for AI literacy courses in academic libraries requires collaboration among library professionals, students, faculty, and information communication technology (ICT) staff to address constraints and promote safe AI practices (Chigwada, 2024; Kizhakkethil & Perryman, 2024).

Research Problem

There exists little literature related to AI literacy in the Middle East compared to the other regions of the world. This study creates a roadmap and a framework for AI literacy specific to the context of academic libraries in the UAE but that other types of libraries throughout the Middle Eastern regions can also apply. Several studies are based in Western, South Asian, or African contexts, which cover various aspects and elements of AI literacy, competencies, and ethical consideration in libraries (Ali & Richardson, 2025; Hossain et al., 2025; Kautonen & Gasparini, 2024; Lo, 2024; Monyela & Tella, 2024). Current literature focuses on the need for AI literacy among library and information science (LIS) professionals; however, there is insufficient empirical data related to actual competency level, preparedness level of library staff, and specific training needs in the context of UAE to integrate AI into various library services and operations (Ali & Richardson, 2025; Kautonen, & Gasparini, 2024; Lo, 2024). There is also a lack of research related to unexplored ethical considerations (Mannheimer et al., 2024; Monyela & Tella, 2024), and no tailored frameworks and guidelines exist in the context of the UAE. Most frameworks and guidelines for AI literacy are generic or are adapted from other regions with little evidence of adaptation or development for academic libraries in the UAE, due to a lack of studies to investigate (Chee et al., 2024; Lo, 2023). UAE public libraries are exploring and updating the current information literacy programs to develop digital awareness, especially related to AI, and focusing on the need for responsible and safe use of AI tools and technologies (Abd AlSamad et al., 2024). Najdawi (2020) emphasizes the need to consider AI adoption strategies across different organizations from both public and private sectors, involving different domains in the UAE, but faces challenges in implementation due to the lack of a framework for AI integration. This gap impedes the ability of libraries to fully adopt, utilize, and responsibly integrate AI tools and technologies.

Objectives of Research

1. To measure the current level of AI literacy among library and information professionals, focusing on cognitive, behavioral, and normative competencies.
2. To evaluate the effectiveness of existing AI literacy training programs for library professionals.
3. To examine the ethical considerations and challenges associated with AI integration in library services.

Literature Review

AI Literacy and Key Competencies

This study defines AI literacy as the ability to understand, engage, and critically evaluate AI-related tools and technologies. It encompasses a wide range of competencies to navigate and interact with various AI tools and systems effectively and responsibly (Almatrafi et al., 2024; Yuan et al., 2024; Zhang et al., 2024). The key components of AI literacy are cognitive competencies, behavioral competencies, and normative competencies. The cognitive competencies include understanding of AI features and processing and algorithm influences (Almatrafi et al., 2024; Yuan et al., 2024). The behavioral competencies correspond to user efficacy (Yuan et al., 2024) and application and creation (Almatrafi et al., 2024). The normative competencies comprise ethical considerations and threat appraisal influences (Almatrafi et al., 2024; Yuan et al., 2024).

Generative AI creates personalized user experience; machine learning algorithms analyze the user information seeking behavior and provide personalized recommendations, which enhances user engagement and satisfaction (Amalia et al., 2024). AI in libraries can improve service delivery through advanced data analytics by understanding and responding to user needs in real time (Okwu et al., 2024). One of the key applications of AI technologies is providing AI-powered assistive technologies, such as translation services, text-to-speech, and navigation systems, which can significantly enhance accessibility to people of determination and disabilities. Virtual assistants, such as chatbots utilizing natural language processing, are assisting patrons in navigating library systems and answering queries (Chauhan, 2024). Promoting AI literacy will be integral to the professional development of library professionals who will be tasked with ensuring ethical use of AI, data privacy, and aligning AI tools and applications with library values of inclusivity and accessibility (Okwu et al., 2024; Tzanova, 2024). Lo (2024) emphasizes hands-on training and reskilling programs, while Scotti and Beltran (2024) advocate for workshops like "Python for all" for library professionals. Deshen and Aharony (2024) suggest promoting AI acceptance and usage among the library professionals, while Sen (2024) advocates for the integration of AI tools, like ChatGPT and other library services.

Various other studies, such as Garnier et al. (2024), point toward addressing ethical and societal implications and concerns to develop AI literacy among library professionals. Kautonnen and Gasparini (2024) advocate for the B-wheel model, which is related to behavioral changes, is inspired by design thinking, and has the capabilities to build AI competencies among library and information professionals in academic libraries. Alam et al. (2024) point out a few barriers and challenges of implementation of these strategies, including resistance to change, budgetary constraints, and the need for enhanced expertise to ensure successful integration of AI literacy programs in library settings.

AI Literacy, Critical Thinking, and Lifelong Learning

Hollands and Breazeal (2024) assess several STEAM projects in various schools in Spain and conclude that evaluation and critical thinking skills are the key components of AI literacy. They suggest that students and teachers involved in STEAM projects should be well-equipped with STEM-based competencies and instructional design knowledge to critically assess AI tools and technologies while identifying their key strengths and limitations. AI literacy also involves critical thinking skills, as it assists people in identifying the challenges posed by AI

technologies and in finding innovative solutions within their work environment (Allen & Kendeou, 2023). AI is always rapidly evolving; therefore, to cope with these technologies, the curricula from different disciplines need to emphasize continuous learning and adaptability and promote a culture of lifelong learning. Information professionals must continue learning and to stay up to date with the latest developments in AI and best practices (Breazeal et al., 2023; Kizhakkethil & Perryman, 2024). Information professionals need to enhance and continue their professional development journey by attending new AI-related courses, training, and workshops and participation in various AI-related projects (Kautonen & Gasparini, 2024). Participating in learning circles, in which information professionals can discuss and collaborate on AI-related content and its application and integration in library services, is another way to continue learning; learning circles can foster a learning environment and build confidence among library professionals (Andersdotter, 2023). UNESCO's AI competency framework for teachers can guide the development of AI literacy through structured pathways for learning and assessment, as it can help differentiate between use and misuse in education and help develop knowledge, skills, and values for responsible use of AI technologies in classrooms (Faruqe et al., 2022; Mutawa & Shruthi, 2025). Research finds that evaluation and feedback mechanisms must be incorporated to measure the effectiveness of AI technologies and information sources to ensure that learners are acquiring the necessary AI skills and competencies (Allen & Kendeou, 2023; Holland & Breazeal, 2024). Having hands-on experience with these tools will equip learners to use them for creating bibliographic records and for enhancing library services (Snow et al., 2024). Machine learning technologies and data analytics are used for important tasks such as classification of resources, clustering, and visualization of data. Acquiring these skills will provide a competitive advantage in managing big data and improving the overall library operations and services (Luca et al., 2022).

Key Challenges, Barriers, and Concerns

Information professionals must become familiar with and understand AI concepts, such as generative AI, machine learning, and natural language processing, to make informed decisions about AI tool integration with various library services and operations (Pickett & Pennington, 2024). Library and information professionals are exploring various AI-powered tools to enhance their services in information retrieval, personalized and adaptive learning experiences, and tailored recommendations (Bhuvaneswari & Rajakumar, 2024; Molopa et al., 2024). The ability to convey complex technical information in an accessible manner will create rapid awareness related to AI literacy among users (Zhang et al., 2024). Collaboration among information professionals requires working in tandem with AI and humans; this machine-human interaction can foster teamwork, especially in AI-driven projects (Du, 2024). One of the key challenges associated with AI is ethics. It is paramount that information professionals not only have a deep understanding of the ethical implications of AI—including, but not limited to, data privacy, hallucinations, biasedness, and unreliable and misinformation—but that they address these challenges (Bhowmick et al., 2024). Information professionals need to approach personalized learning and digital literacy with a growth mindset, as AI tools can facilitate personalized and adaptive learning (Parra-Valencia & Massey, 2023). Information professionals must collaborate with educators to develop AI literacy modules for students that are interdisciplinary in approach and that ensure students and faculty members have the necessary skills and knowledge to thrive in an AI-driven environment (Merceron & Best, 2024).

Budget constraints are a challenge for libraries wishing to invest in information technology infrastructure to support AI applications, as well as their integration into library services (Chatikobo & Pasipamire, 2024). Higher education requires interdisciplinary collaboration between the library professionals, educators, and other stakeholders to develop a comprehensive AI literacy program (Merceron & Best, 2024). Lo (2024) finds that academic library professionals in the United States have a modest self-rated understanding of AI concepts, have very little hands-on experience with AI tools, and have notable gaps in knowledge related to ethical implications and collaborative AI practices. Human-AI collaboration is critical to the success of AI implementation and integration, as information professionals need to collaborate with various AI systems and to understand their limitations and strengths to enhance human capabilities. Human-centric AI values must also be maintained to ensure AI tools and applications augment human decision-making rather than replace it (Yanyi, 2024). Integration of AI information literacy (IL) into all existing IL programs will enhance students' and users' capabilities in searching, retrieving, evaluating, and using information effectively in an AI-driven environment (Carroll & Borycz, 2024; Ndungu, 2024). Information literacy professionals need to upskill themselves to teach AI literacy to users and to help them understand and navigate AI tools and technologies (Andersdotter, 2023). Data literacy is a key skill that information professionals need to acquire to understand data management and big data technology awareness; it will enable them to manage and analyze large datasets, understanding data security and ensuring the integrity of data used in AI (Jinghua, 2021; Daxing, 2021). Knowledge of AI algorithm literacy and algorithm transparency are important to information professionals as knowing how AI algorithms work can help them to identify potential biases and to interpret algorithmic outputs. Furthermore, advocating for algorithm transparency in AI algorithms helps ensures that they are clear and accountable (Ndungu, 2024). Another key skill professionals need to acquire is digital literacy, which will help them navigate misinformation, such as deep fakes produced by AI tools, and will ensure the promotion of responsible digital citizenship and ethical use of AI technologies (Adetayo, 2021).

AI Literacy Frameworks for Academic Libraries

Many general AI literacy frameworks exist, but only two studies propose AI literacy frameworks specifically for LIS professionals and focused on academic libraries. Lo (2025) proposes a framework composed of five core components and three cross-cutting themes. The core components include technical knowledge, ethical awareness, critical thinking, practical skills, and societal impact, while cross-cutting themes include human-AI collaboration, lifelong learning and adaptation, and equity and access. This study also advocates for a dual-implementation approach that involves professional development and training for staff, community engagement through collaboration with educators across disciplines, and integration with current information literacy programs. Hossain et al. (2025) propose a human-centered AI literacy framework (see Figure 1), which conceptualizes AI literacy through four interconnected dimensions: foundational AI literacy, operational AI literacy, transformational AI literacy, and critical AI literacy. It classifies AI literacy skills along normative and cognitive axes.

Figure 2 shows the proposed framework on AI literacy for LIS professionals based on the review of the existing literature. This conceptual framework outlines the key concepts, variables, and their relationships that guide the design of this study.

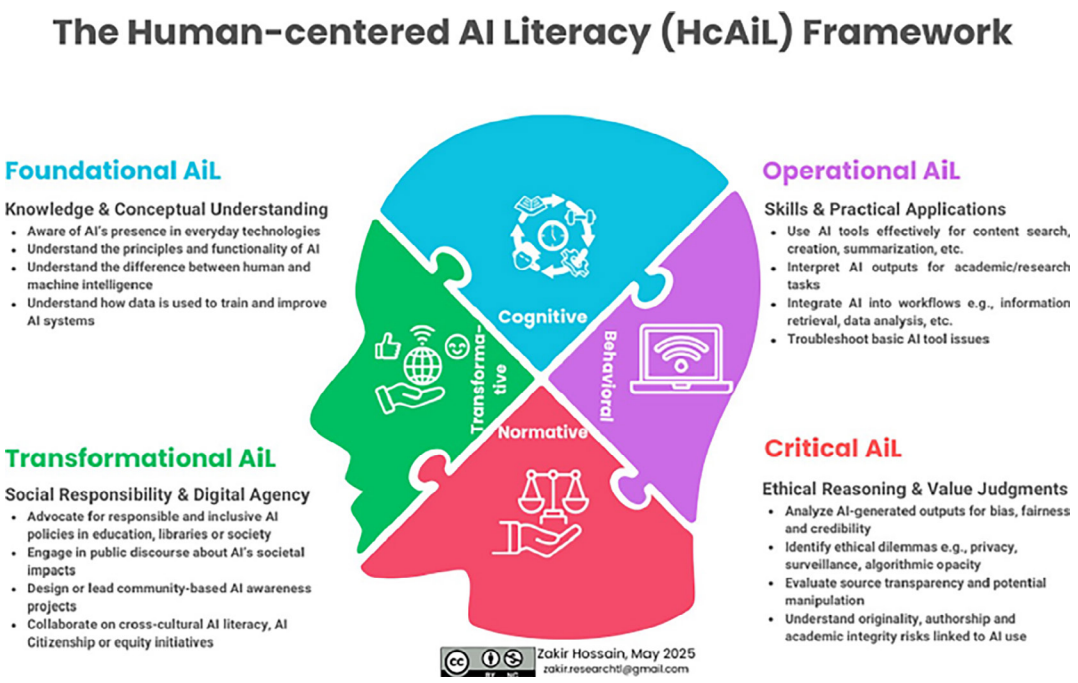


Figure 1. Human-Centered AI Literacy Framework. Source: Hossain et al., 2025.



Figure 2. Proposed Conceptual Framework on AI Literacy for LIS Professionals. Source: Author, self-generated.

Research Methodology

This study involves quantitative methodology, employing a survey to assess the need to build AI literacy among library professionals in the UAE. The study primarily targeted a diverse sample population of library professionals from universities, colleges, schools, and public libraries across the country. The survey instrument was developed and designed to measure various levels of AI competencies in terms of behavioral, cognitive, and normative competencies; AI literacy skills and knowledge; effectiveness of AI training; and ethical considerations and challenges associated with AI. The survey instrument was developed using the literature covered; each variable was identified by critically evaluating the literature review without centering any specific study or studies. The survey consists of five demographic data–related questions with multiple choice options and six constructs (i.e., 30 variables in the form of Likert scale items), to measure and evaluate participants' attitudes, skills, and knowledge toward AI application in library services. The constructs and variables were developed and identified through the literature review and critically examined in the context of AI literacy. The structured online survey was designed using Microsoft Forms. The response collection link was distributed following random sampling, and further snowball sampling techniques were used for a broader reach. Participants were requested to share the survey link within their professional networks, which expedited the data collection process. The study adhered to a rigorous ethical framework, ensuring compliance with all established guidelines and protocols under the ethical standards of the Declaration of Helsinki. Participants in the study were provided with informed consent forms, clearly outlining the purpose of the study and the measures taken to ensure confidentiality during the research process. All the data collected were managed securely, and respondents' anonymity was strictly maintained throughout the study. A total of 92 responses were collected from library and information science professionals across the UAE. The statistical analysis included descriptive statistical analysis to summarize demographic information and pattern of response, correlation analysis to examine the relationships between variables, and an independent sample T-test to compare variables between genders.

Data Analysis and Findings

The data analysis involved employing a range of statistical techniques to examine the dataset comprehensively. Table 1 shows the demographic data distributions of the independent variables. The gender distribution among the respondents shows higher proportions of male librarians (60.87%) compared to female librarians (39.13%). The data related to age groups suggest that most of the respondents are between 35 and 54 and comprise almost 80% of the total respondents, while there were no respondents in the 18–24 age group. The age group 55 and above is relatively small (13.04%) but suggests that a significant number of older adults participated in this study. The average age of the respondents is 42.5 years. The largest group (57.61%) of library professionals are working in higher education, comprising university and college libraries, while school libraries account for 32.61% and special libraries 9.78% of the respondents. There was no representation of public library professionals in this study, which is one limitation of this study. Data related to the highest level of education shows that most library professionals have a master's degree (55.43%), followed by PhDs (27.17%) and bachelor's degrees (17.39%). Most library professionals (60.87%) have more than 15 years of experience, with an average of 12.8 years of experience, which suggests a very experienced

TABLE 1
Demographic Details of the Respondents

Demographic Variable	Category	Frequency	Percentage (%)
Gender	**Male**	56	60.87%
	Female	36	39.13%
Age	**18–24**	0	0%
	25–34	10	10.87%
	35–44	36	39.13%
	45–54	34	36.96%
	55 and above	12	13.04%
Type of Library	**Higher Education (Colleges/Universities)**	53	57.61%
	School Library	30	32.61%
	Special Library	9	9.78%
	Public Library	0	0%
Highest Level of Education	**Bachelor's**	16	17.40%
	Master's	51	55.43%
	PhDs	25	27.17%
Years of Experience	**0 to 5**	6	6.52%
	6 to 10	20	21.74%
	11 to 15	10	10.87%
	16 and above	56	60.87%

sample population in this study, which can contribute towards a more in-depth understanding of the importance and need of AI literacy among library professionals.

Table 2 shows that most respondents depict a positive self-assessment of their AI literacy and understanding, responding with agree or strongly agree with the statement across all variables in this construct. Almost 85.87% of the total respondents selected agree or strongly agree for explaining basic principles of AI (M = 4.09, SD = 0.78) to others. This suggests that most of the librarians are confident in their ability to communicate fundamental AI concepts with others. The understanding of AI technologies (M = 3.80, SD = 0.81) among librarians still suggests a positive inclination, but the lower mean value might indicate that they feel less confident when it comes to in-depth understanding of specific AI technologies as compared to general principles. Familiarity with AI tools (M = 4.16, SD = 0.71) data suggests that the majority (85.87%) of librarians are very confident in their knowledge of popular AI tools used in the library. As for AI applications in libraries (M = 4.00, SD = 0.72), 77.26% of respondents either strongly agree or agree, suggesting that librarians are equipped to identify potential AI applications in various library services and how they can be integrated into their operations. The librarians (79.35%) also seem to have a high awareness level and understanding of the limitations of AI (M = 3.91, SD = 0.80).

Table 3 shows an overall positive sentiment, but the responses are distributed across the agreement scale, which indicates a wider range of engagement among librarians with AI. Using AI for creating bibliographic records (M = 3.29, SD = 1.05) indicates that there is a

TABLE 2
Current Level of AI Literacy (Cognitive Competencies)

Statement	Strongly Disagree (N)	Disagree (N)	Neutral (N)	Agree (N)	Strongly Agree (N)	Total (N)	Mean (M)	Standard Deviation (SD)
Explain the basic principles of artificial intelligence to others.	1 (1.09%)	3 (3.26%)	9 (9.78%)	53 (57.61%)	26 (28.26%)	92 (100%)	4.09	0.78
Understand the differences between various AI technologies (e.g., machine learning, natural language processing, generative AI).	1 (1.09%)	4 (4.35%)	23 (25.00%)	48 (52.17%)	16 (17.39%)	92 (100%)	3.80	0.81
Familiar with popular AI tools used in library services (e.g., ChatGPT, Gemini etc.).	0 (0%)	2 (2.17%)	11 (11.96%)	49 (53.26%)	30 (32.61%)	92 (100%)	4.16	0.71
Identify potential applications of AI in library and information services.	0 (0%)	2 (2.17%)	18 (19.57%)	50 (54.35%)	22 (22.91%)	92 (100%)	4.00	0.72
Understand the limitations of current AI technologies.	1 (1.09%)	5 (5.43%)	13 (14.13%)	55 (59.78%)	18 (19.57%)	92 (100%)	3.91	0.80

moderate experience, and there is significant variation. A little more than half of the respondents (53.27%) agree or strongly agree with this statement. For the AI-powered data analytics (M = 3.46, SD = 0.94) variable, the trend is the same: just a little over half of the respondents (56.52%) have this competency. When it comes to the integration of AI into library services (M = 3.72, SD = 0.84), respondents showed an upward swing, as almost 69.56% either agree or strongly agree. This suggests that most librarians are comfortable when it comes to integrating AI tools into existing library services. Using AI for information retrieval (M = 3.80, SD = 0.78) also showed a high level of confidence among the respondents, with almost 78.26% of respondents agreeing or strongly agreeing. This was the highest-ranking variable in this construct, which suggests that most librarians show a high degree of confidence when it comes to using AI to enhance information retrieval processes. AI-powered personalized learning (M = 3.23, SD = 1.08) shows a decline in confidence level, as less than half (48.92%) agree or strongly agree on this competency level.

Table 4 shows the current level of AI literacy among librarians in terms of normative competencies encompassing critical evaluation and ethical implications of AI in the context of a library. Identifying potential AI biases is a key challenge, and the data shows that 55.44% of the respondents agree or strongly agree that they can identify potential biases in AI algorithms and their outputs (M = 3.39, SD = 0.96). This moderate confidence level in recognizing

TABLE 3
Current Level of AI Literacy (Behavioral Competencies)

Statement	Strongly Disagree (N)	Disagree (N)	Neutral (N)	Agree (N)	Strongly Agree (N)	Total (N)	Mean (M)	Standard Deviation (SD)
Experience using AI tools for creating bibliographic records.	5 (5.43%)	19 (20.65%)	19 (20.65%)	42 (45.65%)	7 (7.62%)	92 (100%)	3.29	1.05
Use AI-powered data analytics tools to improve library operations.	1 (1.09%)	17 (18.48%)	22 (23.91%)	43 (46.74%)	9 (9.78%)	92 (100%)	3.46	0.94
Comfortably integrating AI tools into existing library services.	1 (1.09%)	8 (8.7%)	19 (20.65%)	52 (56.52%)	12 (13.04%)	92 (100%)	3.72	0.84
Use AI to enhance information retrieval processes in my library.	1 (1.09%)	7 (11.96%)	12 (13.04%)	61 (66.3%)	11 (11.96%)	92 (100%)	3.80	0.78
Designed AI-powered personalized learning experiences for library users.	6 (6.52%)	20 (21.74%)	21 (22.82%)	37 (40.22%)	8 (8.7%)	92 (100%)	3.23	1.08

TABLE 4
Current Level of AI Literacy (Normative Competencies)

Statement	Strongly Disagree (N)	Disagree (N)	Neutral (N)	Agree (N)	Strongly Agree (N)	Total (N) / %	Mean (M)	Standard Deviation (SD)
Identify potential biases in AI algorithms and their outputs.	2 (2.17%)	18 (19.57%)	21 (22.82%)	44 (47.83%)	7 (7.61%)	92 (100%)	3.39	0.96
Aware of the privacy implications of using AI in library services.	3 (3.26%)	5 (5.43%)	26 (28.26%)	48 (52.17%)	10 (10.88%)	92 (100%)	3.62	0.87
Critically evaluate the reliability and accuracy of AI-generated information.	3 (3.26%)	9 (9.78%)	24 (26.09%)	42 (45.65%)	14 (15.22%)	92 (100%)	3.60	0.97
Understand the ethical considerations of using AI in information retrieval and dissemination.	2 (2.17%)	3 (3.26%)	17 (18.48%)	52 (56.52%)	18 (19.57%)	92 (100%)	3.88	0.83
Explain the concept of AI accountability to library users.	3 (3.26%)	2 (2.17%)	20 (21.74%)	54 (58.70%)	13 (14.13%)	92 (100%)	3.78	0.83

bias suggests that there is room for improvement. Privacy awareness (M=3.62, SD = 0.87) was much better placed as 63.05% of the respondents agree or strongly agree that they are aware of the privacy implications while using AI in library services. For evaluation of AI-generated information (M = 3.60, SD = 0.97), 60.87% of respondents agree or strongly agree on their ability to critically evaluate the reliability and accuracy of AI-generated information. This suggests that librarians are well capable of assessing AI outputs critically and identifying false or "hallucinating" information. The variable related to ethical consideration (M = 3.88, SD = 0.83) scored the highest, with 76.09% respondents agreeing or strongly agreeing with it. This is a positive sign, and it implies that librarians are highly aware of the ethical aspects of using AI in information retrieval and dissemination. When it comes to the question of AI accountability (M = 3.78, SD = 0.83), it was also rated highly, with 72.83% respondents agreeing or strongly agreeing to it. This suggests that librarians have a good understanding of the concept of AI accountability and can explain it to library users.

Table 5 relates to essential AI literacy skills and knowledge areas. This is one of the key constructs, and it deals with the variables related to the importance of and need for AI literacy skills in the field. The first variable related to understanding of AI algorithms (M = 3.92, SD = 0.87) showed a high positive confidence, with 75% of respondents agreeing or

TABLE 5
Essential AI Literacy Skills and Knowledge Areas

Statement	Strongly Disagree (N)	Disagree (N)	Neutral (N)	Agree (N)	Strongly Agree (N)	Total (N) / %	Mean (M)	Standard Deviation (SD)
Understanding AI algorithms and machine learning principles is crucial for LIS professionals.	1 (1.09%)	5 (5.43%)	17 (18.48%)	46 (50.00%)	23 (25.00%)	92 (100%)	3.92	0.87
Practical experience with AI tools should be a core component of LIS education.	2 (2.67%)	1 (1.09%)	13 (14.13%)	47 (51.09%)	29 (31.52%)	92 (100%)	4.09	0.86
Knowledge of data management and analysis is essential for working with AI in libraries.	0 (0%)	0 (0%)	9 (9.78%)	55 (59.78%)	28 (30.44%)	92 (100%)	4.21	0.60
Critical thinking skills for evaluating AI tools are vital for LIS professionals.	1 (1.09%)	1 (1.09%)	9 (9.78%)	51 (55.43%)	30 (32.61%)	92 (100%)	4.17	0.73
Understanding the societal impact of AI should be part of the LIS curriculum.	1 (1.09%)	3 (3.26%)	16 (17.39%)	45 (48.91%)	27 (29.35%)	92 (100%)	4.02	0.84

strongly agreeing. This suggests that understanding of AI algorithms and machine learning principles is crucial for the LIS professionals and that technical AI knowledge is particularly important. For the practical AI experience (M = 4.09, SD = 00.86), the data shows that 82.61% of respondents agree or strongly agree that practical experiences with AI tools need to be the core component of LIS education, and that hands-on experience and learning on AI technologies is strongly recommended. The variable related to data management knowledge (M = 4.21, SD = 0.60) is the highest-ranked variable in the construct, with 90.22% agreeing or strongly agreeing on this. This implies that there is near unanimity among the respondents in relation to the importance of data management skills for working with AI in libraries. The critical thinking for AI evaluation (M = 4.17, SD = 0.73) was equally highly rated, with 88.04% of respondents either agreeing or strongly agreeing that critical thinking skills for evaluation of AI tools are crucial and vital for LIS professionals, as they can equip them with strong analytical skills for evaluation of AI tools and technologies. Respondents also emphasized the societal impact of AI (M = 4.02, SD = 0.84), as 78.26% agreed or strongly agreed on its inclusion as part of the LIS curriculum, suggesting a recognition of the wider implications of AI beyond just the technical aspects of it.

Table 6 shows the effectiveness of existing AI literacy training among librarians provided by their institutions, indicating a varying level of satisfaction and exposure with AI training

TABLE 6
Effectiveness of Existing AI Literacy Training

Statement	Strongly Disagree (N)	Disagree (N)	Neutral (N)	Agree (N)	Strongly Agree (N)	Total (N) / %	Mean (M)	Standard Deviation (SD)
I participated in AI literacy training programs specifically designed for library professionals.	4 (4.35%)	20 (21.74%)	23 (25.00%)	37 (40.22%)	8 (8.70%)	92 (100%)	3.27	1.03
The AI literacy training I received was comprehensive and covered all necessary aspects.	3 (3.26%)	17 (18.48%)	36 (39.13%)	28 (30.43%)	8 (8.70%)	92 (100%)	3.23	0.96
The training effectively prepared me to use AI tools in my daily work.	3 (3.26%)	16 (17.39%)	35 (38.04%)	31 (33.70%)	7 (7.61%)	92 (100%)	3.25	0.94
The training addressed ethical considerations of AI use in libraries.	4 (4.35%)	15 (16.30%)	30 (32.61%)	34 (36.96%)	9 (9.78%)	92 (100%)	3.32	1.00
I can confidently apply the knowledge gained from AI literacy training in my professional practice.	2 (2.17%)	12 (13.04%)	35 (38.04%)	35 (38.04%)	8 (8.70%)	92 (100%)	3.38	0.90

programs. The first variable in this construct related to participation in AI training (M = 3.27, SD = 1.03), with nearly half of the respondents (48.92%) agreeing or strongly agreeing on their participation in AI literacy training programs specifically designed for LIS professionals. Regarding the comprehensive nature of the training program (M = 3.23, SD = 0.96), only 39.13% agreed or strongly agreed that the AI literacy training they received was comprehensive and covered all three aspects, including cognitive, behavioral, and normative competencies. This indicates a potential gap in the training content. As for the practical application of the training program (M = 3.25, SD = 0.94), only 41.31% of the respondents agreed or strongly agreed on the effectiveness of the use of AI tools in their job. This suggests a moderate level of effectiveness of training in practical skill development. Training addresses ethical considerations (M = 3.32, SD = 1.00) and followed a similar trend, with only 46.74% agreeing or strongly agreeing on this aspect. This suggests a need for improvement and resources required to cover the ethical aspects of AI training. The variable related to confidence in applied knowledge (M = 3.38, SD = 0.90) showed results on similar lines, with 46.74% of the respondents agreeing or strongly agreeing that they feel confident while applying the knowledge gained from the AI literacy training in their professional work.

Table 7 suggests that librarians have shown significant concerns related to several aspects and ethical implications of AI use in libraries. They have shown confidence in

TABLE 7
Ethical Considerations and Challenges

Statement	Strongly Disagree (N)	Disagree (N)	Neutral (N)	Agree (N)	Strongly Agree (N)	Total (N) / %	Mean (M)	Standard Deviation (SD)
Concerned about potential privacy breaches when using AI in library services.	1 (1.09%)	4 (4.35%)	26 (28.26%)	46 (50.00%)	15 (16.30%)	92 (100%)	3.76	0.81
Worry about the potential for AI to perpetuate or amplify biases in information retrieval.	0 (0%)	4 (4.35%)	28 (30.43%)	39 (42.39%)	21 (22.82%)	92 (100%)	3.84	0.83
Challenging to ensure transparency when using AI-powered tools in library services.	1 (1.09%)	5 (5.43%)	27 (29.35%)	47 (51.09%)	12 (13.04%)	92 (100%)	3.70	0.80
Confidence in my ability to address ethical issues related to AI use in libraries.	1 (1.09%)	4 (4.35%)	26 (28.26%)	50 (54.35%)	11 (11.96%)	92 (100%)	3.72	0.77
Clear guidelines for the ethical use of AI in library and information services.	1 (1.09%)	2 (2.17%)	10 (10.88%)	46 (50.00%)	33 (35.87%)	92 (100%)	4.17	0.79

addressing these issues and have highlighted the need for clear ethical guidelines surrounding this. The first variable related to privacy concerns (M = 3.76, SD = 0.81); 66.30% of respondents agreed or strongly agreed that they were concerned about potential privacy breaches while using AI in library services, which indicates a high level of awareness about privacy issues. With regards to bias amplifications (M = 3.84, SD = 0.83), 65.21% showed similar concerns and agreed or strongly agreed on AI potentially perpetuation or amplifying biases in information retrieval. This suggests that librarians have shown concerns related to equity and AI fairness. Transparency challenges (M = 3.70, SD = 0.80) showed a similar trend, with 64.13% of respondents agreeing or strongly agreeing on ensuring transparency as a major challenge while using AI-powered tools in library services. This suggests that librarians have recognized the complexities in communicating AI processes to users. Confidence in addressing ethical issues showed 66.31% agreement in their ability to address ethical issues related to the use of AI in libraries, which suggests a high confidence level among the librarians and self-assurance in addressing ethical challenges. As for the need for ethical guidelines (M = 4.17, SD = 0.79), most of the librarians (85.87%) were unanimous and agreed or strongly agreed on having a clear set of ethical guidelines and standards for AI use in libraries.

There were no statistically significant differences between male and female respondents (p-value was greater than 0.05 for all variables), suggesting that gender does not play any major role in most aspects of AI literacy and attitudes among library professionals.

Figure 3 shows the proposed framework for AI literacy for library professionals based on the findings of this study.

Discussion

This study provides constructive insights into the current state of AI literacy among LIS professionals working in different types of libraries in the UAE. The study highlights the strengths and areas of improvement and provides recommendations to address the gaps. The demographic variable highlighted the fact that a majority of the respondents were male (60.87%) and working in higher education (57.61%). Most of the participants had an advanced level of education (55.43% master's, 27.17% PhDs), and 60.87% had more than 15 years of experience working in libraries. The findings reveal a high level of cognitive competencies (85.87%) related to AI, where librarians demonstrated confidence in explaining basic understanding of AI principles and familiarity with AI tools (85.87%), in line with studies by Alam et al. (2024), Lo (2024), and Mallikarjuna (2024). As for the behavioral competencies, there was moderate to high confidence observed in using AI for various library tasks, where information retrieval showed the highest level of confidence (78.26%) among the librarians. Normative competencies also showed moderate to high levels of confidence with ethical consideration (76.09%), and AI accountability (72.83%) showed the highest confidence. However, there were notable gaps found in certain behavioral and normative competencies, especially in areas related to identifying AI bias learning (Berendt, 2023; Saeidnia, 2023) and AI-powered personalized (Kaswan et al., 2024). Essential AI literacy skills constructs showed high agreement concerning variables such as the need for critical thinking for AI evaluation (88.04%) and data management knowledge (90.22%).

This research highlights the critical importance of AI literacy skills in the field of library and information science. The survey results show consensus among the library profession-

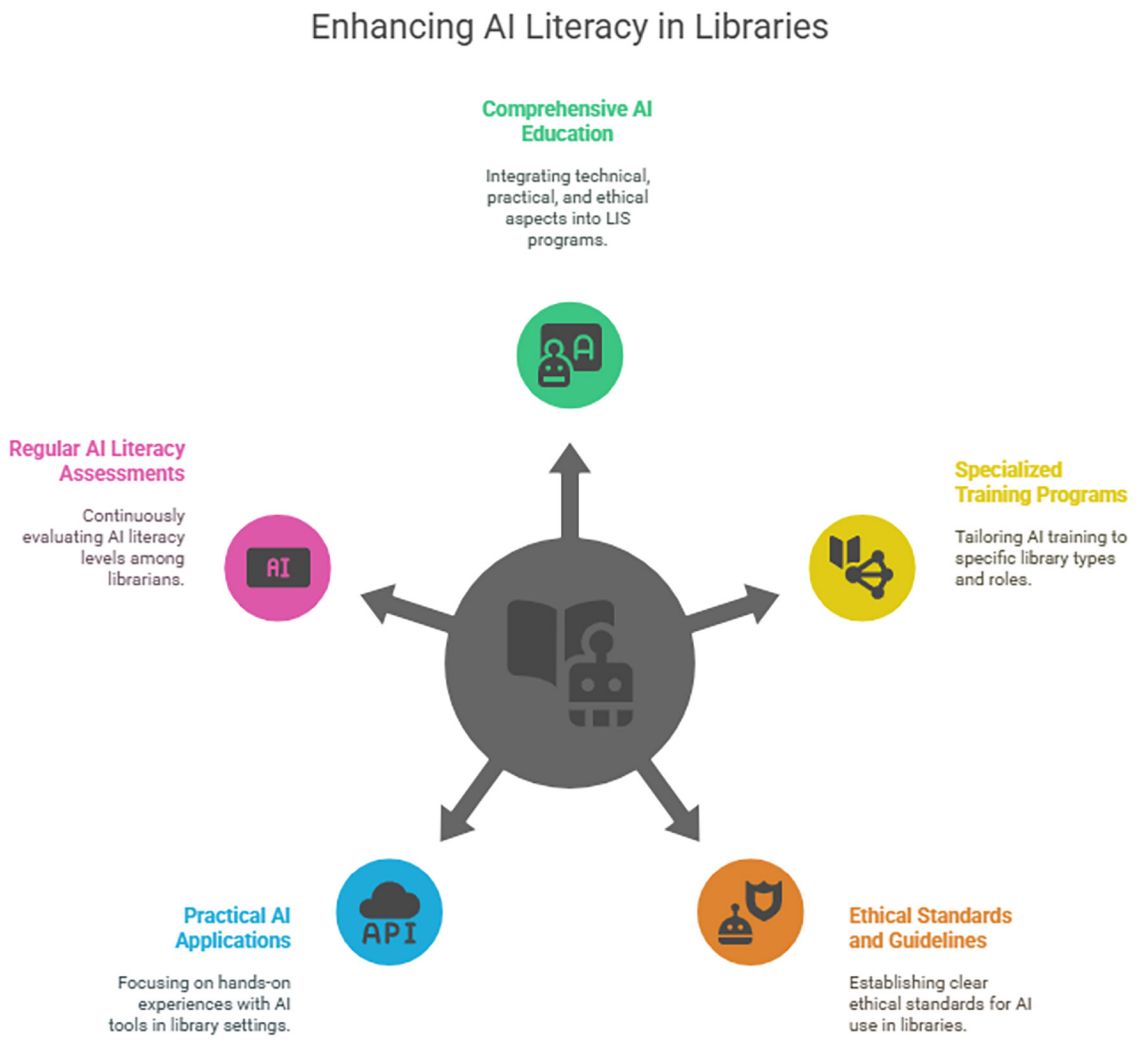


Figure 3. Proposed Framework for AI Literacy for Library Professionals. Source: Author, self-generated.

als regarding the need for comprehensive AI education in the field of LIS, encompassing technical knowledge and understanding, practical experience, critical thinking, and ethical considerations (Chigwada, 2024; Kizhakkethil & Perryman, 2024; Lo, 2023; Tzanova, 2023). The demand for an AI literacy program for LIS professionals aligns with the rapidly changing technological environment in which libraries function and the increasing integration of AI into various library services.

This study also found that there is a significant disparity between the perceived importance of AI competencies and the effectiveness of existing training programs (Lo, 2024; Mallikarjuna, 2024). This is a major challenge and demands an urgent need for targeted, specialized practical AI literacy training for LIS professionals. The moderate satisfaction level with the current AI training programs suggests that there is tremendous room for improvement, both content-wise and delivery method, with a need for more practical and workshop-related training initiatives. In this study, ethical considerations emerged as one of the most crucial aspects of AI literacy (Diyaolu et al., 2024; Lo, 2024). LIS professionals showed consensus regarding the concerns about privacy implications and the need to have clear ethical standards and guidelines for

AI implementation in libraries (Adewojo & Amzat, 2024; Kavak, 2024; Rajkumar et al., 2024). The study accentuates the dual roles of librarians in terms of implementers of AI technologies and as the ethical custodians of the use and access of information.

Recommendations and Conclusion

This study has both theoretical and practical implications, as it tries to evaluate and assess cognitive, normative, and behavioral competencies related to AI in the field of library science. It is a unique addition to the literature encompassing artificial intelligence, librarianship, and social sciences. There is a substantial gap between the perceived importance of AI skills and competencies level and the effectiveness of the existing training programs in the UAE. The practical implication of this study recommends specialized, tailored intervention of AI training programs for library professionals, which need to be more practically oriented to enhance learning. The study also highlights the need for libraries to adopt ethical standards and guidelines for the implementation of AI technologies. AI literacy and AI education need to be prioritized in professional development plans at organizational levels. Such education should be integrated into the LIS curriculum, ideally in collaboration with computer science departments, so that LIS professionals can understand the concept behind algorithms and coding patterns. Addressing these gaps can enhance AI implementation across all types of libraries and enable the library professionals to use AI tools and technologies effectively and in a responsible manner, addressing all ethical concerns and issues (Deshen & Aharony, 2024; Kizhakkethil & Perryman, 2024; Tzanova, 2024).

Another aspect of training is to equip the librarians with identify and mitigate AI biases. The study also recommends that universities and library associations create clear ethical standards and guidelines for AI use in libraries to address privacy concerns and ethical implications. Practical knowledge and hands-on experience with AI tools and technologies should be integrated into both formal education (LIS) and professional development programs. This study recommends investment and providing resources to support AI literacy initiatives in LIS education programs, as proposed by Chatikobo and Pasipamire (2024). One limitation of this study is that it is based on self-assessment of the library professionals, and it provides data about the perceived competencies and knowledge. This study does not cover an in-depth analysis of various training methods, and, as such, there is a limited assessment of training effectiveness.

This study recommends future studies in measuring the effectiveness of training related to AI in libraries, assessing AI literacy levels among LIS professionals and LIS students through a framework, and a study involving the identification and measurement of practical applications of AI in library services and operations. This study provides a comprehensive foundation for understanding the current state and future needs of AI literacy in libraries and the LIS profession. The findings of this study can serve as a valuable guide for library associations, professional organizations, and educational institutions in developing strategies to enhance AI literacy among library professionals.

Acknowledgment

I would like to express my sincere gratitude to Michelle Demeter, editor of *College & Research Libraries*, for taking the time to thoroughly review my work, cross-check the details, and provide insightful and constructive feedback that greatly helped improve the quality and clarity

of the manuscript.

References

Abd Al Samad, M., Al-Araj, M., & Masoumi, S. (2024). Information literacy programs in libraries and their importance in developing digital information awareness trends for societies in the era of artificial intelligence and its challenges: Public libraries in the United Arab Emirates as an example. *Cybrarians Journal*, (73), 259–297. https://doi.org/10.70000/cj.2024.73.628

Adetayo, A. J. (2021). Fake news and social media censorship: Examining the librarian role. In R. Blankenship (Ed.), *Deep fakes, fake news, and misinformation in online teaching and learning technologies* (pp. 69–92). IGI Global Scientific Publishing. https://doi.org/10.4018/978-1-7998-6474-5.ch004

Alam, A. F., Subaveerapandiyan, A., Mvula, D., & Tiwary, N. (2024). AI literacy and Zambian librarians: A study of perceptions and applications. *Open Information Science*, *8*(1). https://doi.org/10.1515/opis-2022-0166

Ali, M. Y., & Richardson, J. (2025). AI literacy guidelines and policies for academic libraries: A scoping review. *IFLA Journal*, *51*(3), 588–599. https://doi.org/10.1177/03400352251321192.

Allen, L. K., & Kendeou, P. (2023). ED-AI lit: An interdisciplinary framework for AI literacy in education. *Policy Insights from the Behavioral and Brain Sciences*, *11*(1), 3–10. https://doi.org/10.1177/23727322231220339

Almatrafi, O., Johri, A., & Lee, H. (2024). A systematic review of AI literacy conceptualization, constructs, and implementation and assessment efforts (2019–2023). *Computers and Education Open*, *6*, 100173. https://doi.org/10.1016/j.caeo.2024.100173

Amalia, P. N., Kurniawati, I. R., & Fahmi, F. (2024). The impact of AI on library information service quality. *BIBLIOTIKA: Jurnal Kajian Perpustakaan Dan Informasi*, *8*(1), 77. https://doi.org/10.17977/um008v8i12024p77-87

Andersdotter, K. (2023). Artificial intelligence skills and knowledge in libraries: Experiences and critical impressions from a learning circle. *Journal of Information Literacy*, *17*(2), 108–130. https://doi.org/10.11645/17.2.14

Berendt, B., Karadeniz, Ö., Kıyak, S., Mertens, S., & d'Haenens, L. (2023). Bias, diversity, and challenges to fairness in classification and automated text analysis. From libraries to AI and back. *arXiv preprint arXiv:2303.07207*.

Bhowmick, M., Goswami, S., Chakraborty, R., Bhowmick, P., Nandy, S. K., Afrose, N., & Kewatkar, S. M. (2025). Artificial intelligence in skill development. In P. Yadav (Ed.), *Human resource strategies in the era of artificial intelligence* (pp. 135–166). IGI Global Scientific Publishing.

Bhuvaneswari, G., & Rajakumar, P. V. (2024). Impact of AI in library operations. In K. R. Senthilkumar & R. Jagajeevan (Eds.), *Improving library systems with AI: Applications, approaches, and bibliometric insights* (pp. 39–46). IGI Global Scientific Publishing.

Breazeal, C., Du, X., Abelson, H., Klopfer, E., & Park, H. W. (2023). Day of AI: Innovating pedagogical practices to bring AI literacy to classrooms at scale. In T. Schlippe, E. C. K. Cheng, & T. Wang (Eds.), *Artificial intelligence in education technologies: New development and innovative practices* (pp. 267–281). Springer.

Carroll, A. J., & Borycz, J. (2024). Integrating large language models and generative artificial intelligence tools into information literacy instruction. *The Journal of Academic Librarianship*, *50*(4), 102899. https://doi.org/10.1016/j.acalib.2024.102899

Chatikobo, M. V., & Pasipamire, N. (2024). Readiness to embrace artificial intelligence in information literacy instruction at a Zimbabwean University. *Cogent Education*, *11*(1). https://doi.org/10.1080/2331186x.2024.2425209

Chauhan, S. P. S. (2024). Enhancing accessibility in special libraries: A study on AI-powered assistive technologies for patrons with disabilities. *arXiv preprint arXiv:2411.06970*.

Chee, H., Ahn, S., & Lee, J. (2024). A competency framework for AI literacy: Variations by different learner groups and an implied learning pathway. *British Journal of Educational Technology, 56*(5), 2146–2182. Portico. https://doi.org/10.1111/bjet.13556

Chigwada, J. (2024). A proposed framework for a digital literacy course for artificial intelligence in academic libraries. *South African Journal of Libraries and Information Science*, *90*(2), 1-8. https://doi.org/10.7553/90-2-2388

Daxing, T. (2021). Research on cultivating new teachers' literacy based on artificial intelligence. *2nd International Conference on Big Data and Informatization Education (ICBDIE),* 228–231. https://doi.org/10.1109/icbdie52740.2021.00058

Deshen, M., & Aharony, N. (2024). Students' AI literacy: An exploratory study. *ICERI2024 Proceedings*, *1*, 3250–3250. https://doi.org/10.21125/iceri.2024.0838

Diyaolu, B. O., Bakare-Fatungase, O. D., & Ajayi, K. D. (2025). Generative AI ethical conundrum: Librarians as artificial intelligence literacy apostle in the educational space. In K. Sacco, A. Norton, & K. Arms (Eds.), *Navigating AI in academic libraries: Implications for academic research* (pp. 131–162). IGI Global Scientific Publishing.

Du, J. (2024). AI and your job what's changing and what's next. *Frontiers in Science and Engineering*, *4*(7), 116–124. https://doi.org/10.54691/0dbksd82

Faruqe, F., Watkins, R., & Medsker, L. (2022). Competency model approach to AI literacy: Research-based path from initial framework to model. *Advances in Artificial Intelligence and Machine Learning*, *02*(04), 580–587. https://doi.org/10.54364/aaiml.2022.1140

Garnier, M., Cussac, M., Delaune, C., Espy, C., & Papon-Vidal, L. (2024). Le Rôle pivot des bibliothèques dans le développement durable de l'IA. *The Canadian Journal of Information and Library Science*, *47*(2), 137–149. https://doi.org/10.5206/cjils-rcsib.v47i2.17699

Hollands, F., & Breazeal, C. (2024). Establishing AI literacy before adopting AI. *The Science Teacher*, *91*(2), 35–42. https://doi.org/10.1080/00368555.2024.2308316

Hossain, Z. (2024). School librarians developing AI literacy for an AI-driven future: Leveraging the AI Citizenship Framework with scope and sequence. *Library Hi Tech News*, *42*(2), 17–21. https://doi.org/10.1108/lhtn-10-2024-0186

Hossain, Z., Biswas, Md. S., & Khan, G. (2025). AI literacy of library and information science students: A study of Bangladesh, India and Pakistan. *Journal of Librarianship and Information Science*, *58*(1), 285–299. https://doi.org/10.1177/09610006241309323

Jinghua, S. (2021). Exploration and practice of intelligent educational accomplishment of computer majors in vocational colleges in the era of artificial intelligence. *2021 International Conference on Internet, Education and Information Technology (IEIT)*, 537–540. https://doi.org/10.1109/ieit53597.2021.00126

Kaswan, K. S., Dhatterwal, J. S., & Ojha, R. P. (2024). AI in personalized learning. In A. Garg, B. V. Babu, & V. E. Balas (Eds.), *Advances in technological innovations in higher education: Theory and practices* (pp. 103–117). CRC Press. https://doi.org/10.1201/9781003376699-9

Kautonen, H., & Gasparini, A. A. (2024). B-wheel: Building AI competences in academic libraries. *The Journal of Academic Librari*anship, *50*(4), 102886. https://doi.org/10.1016/j.acalib.2024.102886

Kizhakkethil, P., & Perryman, C. (2024). Are we ready? Generative AI and the LIS curriculum. *Proceedings of the ALISE Annual Conference*. https://doi.org/10.21900/j.alise.2024.1719

Lo, L. S. (2023). An initial interpretation of the U.S. Department of Education's AI report: Implications and recommendations for academic libraries. *The Journal of Academic Librarianship*, *49*(5), 102761. https://doi.org/10.1016/j.acalib.2023.102761

Lo, L. (2024). Evaluating AI literacy in academic libraries: A survey study with a focus on U.S. employees. *College & Research Libraries*, *85*(5), 635. doi:https://doi.org/10.5860/crl.85.5.635

Lo, L. (2025). AI literacy: A guide for academic libraries. *College & Research Libraries News*, *86*(3), 120. doi:https://doi.org/10.5860/crln.86.3.120

Lo, L. S. (2024). Transforming academic librarianship through AI reskilling: Insights from the GPT-4 exploration program. *The Journal of Academic Librarianship*, *50*(3), 102883. https://doi.org/10.1016/j.acalib.2024.102883

Luca, E., Narayan, B., & Cox, A. (2022). Artificial intelligence and robots for the library and information professions. *Journal of the Australian Library and Information Association*, *71*(3), 185–188. https://doi.org/10.1080/24750158.2022.2104814

Mallikarjuna, C. (2024). Integrating artificial intelligence in academic libraries: An analysis. *DESIDOC Journal of Library & Information Technology*, *44*(2), 124–129.

Mannheimer, S., Bond, N., Young, S. W. H., Kettler, H. S., Marcus, A., Slipher, S. K., Clark, J. A., Shorish, Y., Rossmann, D., & Sheehey, B. (2024). Responsible AI practice in libraries and archives: A review of the literature. *Information Technology and Libraries*, *43*(3). https://doi.org/10.5860/ital.v43i3.17245

Merceron, K., & Best, K. (2024). Integrating professional perspectives for AI literacy. In S. Elmoudden & J. S. Wrench (Eds.), *The role of generative AI in the communication classroom* (pp. 300–315). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-0831-8.ch014

Molopa, S. T., Mothopeng, O., Zulu, M., Kgasi, E. M., Mila-Ndenge, N., Ndlovu, N., Moira Barends, C. J., Xesi, X., & Levi, Y. (2024). Information literacy in the artificial intelligence sphere. In S. Chizwina & M. Moyo (Eds.), *Examining information literacy in academic libraries* (pp. 97–124). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-1143-1.ch006

Monyela, M., & Tella, A. (2024). Leveraging artificial intelligence for sustainable knowledge organisation in academic libraries. *South African Journal of Libraries and Information Science*, *90*(2), 1–11. https://doi.org/10.7553/90-2-2396

Mutawa, A. M., & Sruthi, S. (2025). UNESCO's AI competency framework: Challenges and opportunities in educational settings. In A. Mutawa (Ed.), *Impacts of generative AI on the future of research and education* (pp. 75–96). IGI Global Scientific Publishing.

Najdawi, A. (2020). Assessing AI readiness across organizations: The case of UAE. 11th International Con-

ference on Computing, *Communication and Networking Technologies (ICCCNT)*. https://doi.org/10.1109/icccnt49239.2020.9225386

Okwu, E., Oyighan, D., & Oladokun, B. D. (2024). Future trends of open-source AI in libraries: Implications for librarianship and service delivery. *Asian Journal of Information Science and Technology*, *14*(2), 34–40. https://doi.org/10.70112/ajist-2024.14.2.4283

Parra-Valencia, J.-A., & Massey, M.-L. (2023). Leveraging AI tools for enhanced digital literacy, access to information, and personalized learning. In H. Qudrat-Ullah (Ed.), *Managing complex tasks with systems thinking* (pp. 213–234). Springer. https://doi.org/10.1007/978-3-031-40635-5_9

Pickett, J., & Pennington, M. (2024). Take the leap! Steps to integrate AI into your work. *AMWA Journal*, *39*(2). https://doi.org/10.55752/amwa.2024.349

Preethi, M. (2024). Transforming libraries: The impact of artificial intelligence. *Indian Scientific Journal of Research in Engineering and Management*, *08*(10):1–6. doi: 10.55041/ijsrem38103

Saeidnia, H. R. (2023). Ethical artificial intelligence (AI): Confronting bias and discrimination in the library and information industry. *Library Hi Tech News*, *40*(5), 1–5. https://doi.org/10.1108/LHTN-10-2023-0182

Scotti, K. L., & McKee, L. (2026). Python for all: A library workshop for bridging AI literacy and coding skills. *College & Research Libraries*, *87*(2), 127.

Sen, S. (2024). AI in action: Boost your information skills training promotion with ChatGPT integration. *Journal of EAHIL*, *20*(2), 20–25. https://doi.org/10.32384/jeahil20621

Snow, K., Miksa, S., Hoffman, G., Kizhakkethil, P., & Zavalin, V. (2024). Truth and information? Preparing information organization and retrieval students for an AI future. *Proceedings of the ALISE Annual Conference*. https://doi.org/10.21900/j.alise.2024.1723

Tzanova, S. (2024). AI in scholarly communications and academic research. In K. Sacco, A. Norton, & K. Arms (Eds.), *Navigating AI in academic libraries: Implications for academic research* (pp. 17–40). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-3053-1.ch002

Yanyi, Wu. (2024). Future of information professions: Adapting to the AGI era. *Scientific and Technical Information Processing*, *51*(3), 273–279. https://doi.org/10.3103/s0147688224700199

Yuan, C. W. (Tina), Tsai, H. S., & Chen, Y.-T. (2024). Charting competence: A holistic scale for measuring proficiency in artificial intelligence literacy. *Journal of Educational Computing Research*, *62*(7), 1675–1704. https://doi.org/10.1177/07356331241261206

Zhang, H., Perry, A., & Lee, I. (2024). Developing and validating the artificial intelligence literacy concept inventory: An instrument to assess artificial intelligence literacy among middle school students. *International Journal of Artificial Intelligence in Education*, *35*(1), 398–438. https://doi.org/10.1007/s40593-024-00398-x

Evaluating AI-Generated Subject Terms for Cataloging Assistance

Li Sun*

This study evaluated AI-generated faceted application of subject terminology (FAST) subject headings using only call numbers, titles, and authors from 212,000 brief MARC records. A stratified sample of 1,000 records across five domains was analyzed. AI terms were compared to OCLC FAST headings through direct and enhanced (semantic) matching. Enhanced matching outperformed direct matching, with F1 scores highest in history (0.81) and lowest in sciences (0.72) due to specialized terminology. AI processed large datasets efficiently but produced broad terms. Confidence scores strongly predicted match quality ($r = 0.78$, $p < 0.01$) for enhanced matching, supporting their use in a hybrid AI–human workflow. Future work should focus on domain-specific training.

Introduction

Artificial intelligence (AI) has demonstrated considerable potential in automating cataloging processes. Several library professionals have explored the use of generative AI tools to create Library of Congress Subject Headings (LCSH) based on titles and abstracts (Chow et al., 2024). However, no research has yet examined the use of more concise metadata for this task. Specifically, there is a gap in the literature regarding the application of AI to generate subject terms based solely on call numbers, titles, and authors. Addressing this gap is both necessary and timely. At the author's library, a large collection of items has brief MARC records with only those three fields. Without subject terms, users cannot easily find these items unless they know the exact title or browse the shelves. To improve access, these records need richer metadata, especially subject headings. However manually updating thousands of records is not feasible, and automation becomes the optimal solution. This study explores whether a generative AI tool can produce consistent, standardized subject terms using its built-in models and vocabularies.

During the COVID-19 lockdown, staff worked remotely. The cataloging librarian created remote projects and used Alma Analytics to find records needing attention. Many were legacy entries from the shift to digital systems in the 1970s and 1980s. They included only basic bibliographic data. In total, 212,000 brief records were found, including 68,000 with Library of Congress Control Numbers (LCCNs). These LCCNs were used to retrieve full MARC records from OCLC and overlay the existing brief records. That process was slow but doable.

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Once the LCCNs were exhausted, addressing the remaining brief records became impractical. This study focuses on records without LCCNs and other identifiers, where OCLC retrieval is not feasible, precluding direct comparison with copy-cataloging workflows. The author turned to AI automation to define subject terms. To ensure that the AI performs as expected, thorough testing was conducted. Initial tests and past research show AI can generate broad subject terms but struggles with LCSH formatting. This study aims to evaluate the accuracy and appropriateness of AI-generated subjects by comparing them with faceted application of subject terminology (FAST) subject headings. These FAST subject terms are incorporated into OCLC's MARC records within the 6xx field with a second indicator of 7, distinguishing them from LCSH. Details of the testing design are described in the Methods section.

Literature Review

AI for Subject Heading Generation

Recent studies have explored generative AI's role in automating subject heading assignment. Studies consistently show that AI enhances cataloging efficiency; however, these studies also stress the need for human oversight for accuracy, completeness, and relevance. Among others, Chow et al. (2024) provided ChatGPT with titles and abstracts from electronic theses and dissertations. They found that AI streamlined LCSH generation and improved resource accessibility. Still, verification remained essential. Similarly, Martins (2024) tested Anthropic's Claude AI on a single book to assign call numbers, subject terms, and cutter numbers. While general subjects proved relevant, specific indexing was inconsistent across sessions. This reinforced AI's role as a supplement, not a replacement, despite the study's narrow scope. Zhang et al. (2023) complemented these efforts. They used prompt-based training on large language models. Input came from dataset titles and descriptions in Research Data Australia. Results showed strong automatic subject annotations. But accuracy fell when discipline-specific rules needed more context. Earlier machine-learning approaches laid foundational groundwork. For example, Frank and Paynter (2004) mapped LCSH to classifications in a reverse process; Mödden (2022) automated Dewey Decimal assignments via shorter classifications. Collectively, these works highlight AI's transformative value in deriving subject terms from limited inputs when paired with human expertise in cataloging efforts. These studies suggest that, while certain limitations persist, generative AI has proven effective in deriving subject terms from input data.

Building on these studies, this present research examines the challenges posed by incomplete MARC records and evaluates the ability of AI models to generate standardized subject terms aligned with the FAST framework. FAST is a modern, simplified version of the complex LCSH. It was designed to make subject cataloging and searching easier (OCLC, 2025). Created by OCLC in collaboration with the Library of Congress, FAST separates subject information into nine distinct, independent facets, such as topical, personal names, and chronological. This "post-coordinated" approach replaces the long, single strings of traditional headings, allowing users to combine facets to refine their searches, much like a modern e-commerce or library catalog. The result is a system that is easier for catalogers to apply and more intuitive for users, particularly in digital environments. This research differs from prior studies in several ways. While previous work utilized detailed input data and focused on structured outputs in MARC format, this research operates with limited data and centers on FAST subject headings. Additionally, this study uses a large, stratified

dataset, allowing for deeper analysis of AI output accuracy. Most importantly, this research addresses immediate challenges with practical implications while contributing to broader advancements in library cataloging.

Call Numbers and Titles for Subject Headings

Given this study's reliance on call numbers and titles for generating subject headings, it is useful to consider research examining the semantic relationships between title phrases and subject terms. This section also evaluates the role of call numbers in achieving accurate classification and explores the distinctions between structured and faceted subject headings. In contrast to the more contemporary literature on AI's role in cataloging and classification, this review draws primarily from earlier decades of research. Wise Fernandez (1991) studied title phrases and their semantic links to subject headings, mirroring our research goals. Their study evaluated LCSH's ability to represent book titles, revealing insights into subject terms' accuracy, precision, and vocabulary similarity. Only 26% of title phrases matched LCSH terms exactly, with 74% partial matches. Hierarchical mismatches were common, as titles were often more specific than LCSH terms. Wise Fernandez suggested expanding LCSH and adding title keyword searches to improve retrieval. Supporting Wise Fernandez, Engelson (2013) evaluated aligning title concepts with deconstructed LCSH terms. Engelson's study revealed inconsistencies in "fast-track cataloging" among catalogers. Match rates varied by discipline and format, requiring caution even in high-match areas. Engelson questioned adding LCSH subject headings when keyword searches drive retrieval.

The retrieval efficiency of LCSH has long been a topic of debate (Byrne, 1975). Alongside scholarly discussions, the Library of Congress reviewed the benefits and drawbacks of pre-coordinated (LCSH) versus post-coordinated (faceted vocabularies) subject cataloging, prompting changes to cataloging process (Cooey & Phillips, 2003). Post-coordination offers greater flexibility for catalogers in creating records and increased efficiency for users when searching for materials. Recently, the practice of assigning individual headings to resources, rather than constructing intricate subject strings, has gained popularity. A notable example is the British Library's adoption of FAST in early 2022 (Pyrne, 2023). This present study capitalizes on the simplicity of post-coordination to support cataloging efforts, enhancing brief bibliographic records for effective keyword searching. Faceted vocabularies provide a promising solution to address challenges in subject generation, particularly with minimal input data. Despite data constraints, FAST's compatibility with LCSH ensures effective retrieval without compromising cataloging.

Methods

A stratified sample of 1,000 records was selected from the 68,000 MARC records with LCCNs, allowing access to their corresponding full records from OCLC for detailed analysis and extrapolation to the broader population of 212,000 brief catalog entries. These records were batch-searched through OCLC Connexion to retrieve additional metadata, particularly FAST subject headings. To reflect the dataset's composition, the sample was stratified into five domains based on LC call number classifications: history (277 records), humanities (277), social sciences (243), arts (83), and sciences (120). The evaluation focused on FAST subjects, as its faceted, term-based structure proves more adaptable to AI simulation and generation. LCSH's pre-coordinated, structured format (e.g., subdivided headings) presents greater obstacles for

replication, especially given the limited context provided by brief titles. While both LCSH and FAST contribute to effective retrieval, FAST's straightforward design aligns more closely with the AI-driven methodology employed in this study.

A generative AI tool (Grok 3, xAI) was programmed to generate subject terms based on pre-trained FAST rules. Inputs were limited to LC call numbers and title/author data, with OCLC metadata reserved for comparison. The AI was configured to produce one to four subject terms per record, reflecting typical FAST usage patterns. A confidence score (0.0 to 1.0) was assigned by AI to each record, measuring term specificity and contextual clarity according to the AI's alignment with FAST vocabularies. Higher scores indicate stronger semantic alignment with the controlled vocabulary. Below is the finalized prompt used for Grok's output generation. It has been tested multiple times to ensure alignment with AI best practices. The prompt provides clear instructions for handling cases where no suitable FAST terms are identified, calculating confidence scores, and managing errors or unstructured data. Due to Grok's limitations in processing large datasets, this research processed 100 records per run until all 1,000 records were completed.

> **Prompt**: Using the uploaded Excel file containing the columns "LC Call Number" and "Title/Author," to assign 1–4 Faceted Application of Subject Terminology (FAST) subject terms per record, strictly adhering to FAST subject heading guidelines. Ensure the output is formatted for seamless integration into Excel, with four columns: "LC Call Number," "Title/Author," "Subject," and "Confidence Score." The "Subject" column should list all assigned terms for a record in a single cell, separated by semicolons. The Confidence Score, ranging from 0.0 to 1.0, will reflect the semantic relevance and adherence to FAST guidelines for each term assignment. If no suitable FAST terms can be assigned, populate the "Subject" column with None and set the Confidence Score to 0.0. Handle invalid or incomplete data by flagging records with a note in the "Subject" column (e.g., "Invalid Data") and a Confidence Score of 0.0.

The author compared AI-generated terms to OCLC FAST subjects in a two-step process. First, direct matching sequentially compared each AI term to the FAST subject list for exact or near-exact equivalence. The author calculated a match score as the number of matches divided by the number of AI terms (M/T); distributed scores can be found in Table 1.

TABLE 1
Match Score Distribution

Number of AI Terms	Number of Matches = Match Score			
1	1 = 1.0			
2	1 = 0.5	2 = 1.0		
3	1 = 0.33	2 = 0.67	3 = 1.0	
4	1 = 0.25	2 = 0.5	3 = 0.75	4 = 1.0

Given the complexity and variability of subject vocabularies, direct matching alone may not fully assess term relevance, as cataloging lacks strict standardization. Thus, a second step, enhanced matching, incorporated semantic mapping, thematic alignment, and conceptual relevance assessment, leveraging FAST's hierarchical and associative relationships. Enhanced matching drew on the AI's training across a vast text corpus, simulating subject matter expertise by referencing ontologies, taxonomies, and controlled vocabularies (e.g., FAST, LCSH). This external validation enabled the AI to identify valid terms beyond exact matches, such as

linking "Industrial Revolution" to "economic history." The author calculated and aggregated three performance metrics per record:

1. Coverage (Recall): The percentage of FAST terms captured by AI terms, reflecting completeness. Formula:

$$C = \frac{1}{N}\sum_{i=1}^{N}\left(\frac{M_i}{T_i}\right) \times 100$$

where C = coverage, N = total records (1,000), M_i = matched terms in record i, T_i = total FAST terms in record i.

2. Precision: The percentage of AI terms that are valid (i.e., match or align with FAST terms), reflecting accuracy. Formula:

$$P = \frac{1}{N}\sum_{i=1}^{N}\left(\frac{V_i}{T_i}\right) \times 100$$

where P = precision, N = total records (1,000), V_i = valid AI terms (direct or enhanced matches) in record i, Ti = total AI terms in record i.

3. F1 Score: The harmonic mean of coverage and precision, balancing both. Formula:

$$F1 = 2 \times \frac{P \times C}{P + C}$$

where P = precision, C = coverage (Recall).

Precision, recall, and F1 score are standard metrics in information retrieval. They evaluate system output against a gold standard. They balance accuracy and completeness in classification and metadata tasks (Manning et al., 2008).

After calculating coverage and precision, the author derived two correlation metrics. The direct correlation (r) is the Pearson correlation coefficient between the average confidence score and the coverage rate, reflecting the strength of the linear relationship between them. The enhanced correlation (r) is the Pearson correlation coefficient between the average confidence score and the precision rate, assessing the strength of the linear relationship. The author then aggregated match scores, coverage, precision, and F1 scores (mean, SD) across all records and by domain. Additionally, Pearson correlation coefficients (r) assessed relationships between (1) average confidence scores and direct match scores (direct correlation) and (2) average confidence scores and enhanced match scores (enhanced correlation), with p-values testing significance. Visualizations, including histograms of match scores, bar charts of coverage/precision/F1, and scatterplots of confidence versus match scores, supported the analysis.

Findings

Matching Metrics

AI-generated subject terms achieved an average direct match score of 0.85 (SD = 0.14) and an enhanced match score of 0.95 (SD = 0.10) across 1,000 records (see Table 2). Among the five domains, history exhibited the highest match scores (Direct: 0.88, SD = 0.13; Enhanced: 0.97, SD = 0.08), while sciences recorded the lowest (Direct: 0.80, SD = 0.17; Enhanced: 0.92, SD = 0.12). Humanities, social sciences, and arts fell within a similar range, with direct matches between 0.82 and 0.85 and enhanced matches between 0.94 and 0.96. Confidence scores averaged 0.87 (SD = 0.08). Direct matching yielded scores ≥0.75 for 71% of records (710/1,000), rising to 90%

(900/1,000) with enhanced matching. Variability in direct matching (SD = 0.14) suggests moderate dispersion, with sciences exhibiting the greatest variation (SD = 0.17) and history the lowest (SD = 0.13). Enhanced matching reduced variability across all domains, with SDs ranging from 0.08 to 0.12, reflecting improved alignment. The greater consistency in enhanced matching, particularly in history and social sciences, suggests stronger semantic refinement, making confidence scores a more reliable predictor of match quality. Improved term mapping, such as aligning "political culture" with "politics and government," will enhance retrieval accuracy. The overall direct match score of 0.85 indicates solid baseline accuracy, but enhanced matching (0.95) significantly improves alignment with FAST subjects. History (0.97) outperforms sciences (0.92) in enhanced matching, likely due to frequent exact term matches (e.g., "history") and strong thematic relationships (e.g., "social conditions" linking to "economic conditions"). In contrast, sciences' lower score may stem from specialized terminology (e.g., "tapeworms" versus "Bothriocephalidae"), which requires deeper taxonomic mapping.

TABLE 2
Match Scores by Domain

Domain	N	Direct Match (Mean)	Direct Match (SD)	Enhanced Match (Mean)	Enhanced Match (SD)
History	277	0.88	0.13	0.97	0.08
Humanities	277	0.82	0.16	0.94	0.11
Social Sciences	243	0.85	0.14	0.96	0.09
Arts	83	0.83	0.15	0.95	0.1
Sciences	120	0.8	0.17	0.92	0.12
Overall	**1,000**	**0.85**	**0.14**	**0.95**	**0.1**

Precision, Recall, and F1 Scores

Precision, recall, and F1 scores were computed based on 2,495 AI-generated terms and 2,499 FAST terms. Direct matching yielded precision (0.64), recall (0.50), and F1 score (0.56). Enhanced matching significantly improved these metrics, achieving precision (0.87), recall (0.68), and F1 score (0.76). Among the five domains, history led in F1 score (0.81), while sciences scored lowest (0.72) (see Table 3).

TABLE 3
Enhanced Matching Metrics by Domain

Domain	Precision	Recall	F1 Score
History	0.91	0.72	0.81
Humanities	0.85	0.66	0.74
Social Sciences	0.89	0.7	0.78
Arts	0.86	0.67	0.75
Sciences	0.83	0.64	0.72
Overall	**0.87**	**0.68**	**0.76**

As Table 4 shows, enhanced matching significantly outperformed direct matching, achieving higher precision (0.87 versus 0.64), recall (0.68 versus 0.50), and F1 score (0.76 versus 0.56).

Confidence Score Correlations

The histogram in Figure 1 reveals a bimodal distribution of direct match scores, peaking at 0.5 (240 records) and 1.0 (150 records), with a smaller tail (0.0–0.4, ~460 records below 0.75). Figure 2 demonstrates a right-skewed distribution for enhanced matching scores, peaking at 1.0 (700 records), with fewer outliers. The confidence score, which measures term specificity and contextual clarity in alignment with FAST vocabularies, serves as a reliable

TABLE 4
Precision, Recall, and F1 Scores

Metric	Direct Matching	Enhanced Matching
Precision	0.64	0.87
Recall	0.5	0.68
F1 Score	0.56	0.76

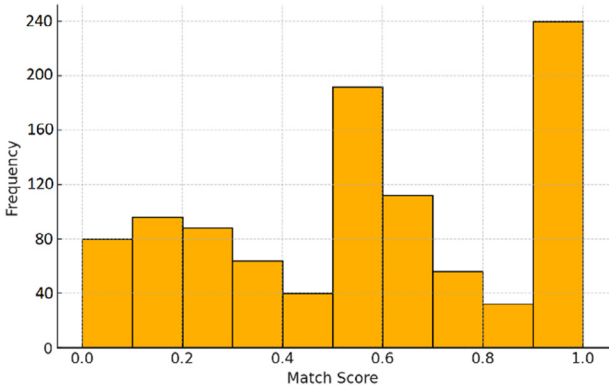


Figure 1. Histograms of Direct Match Scores Across 1,000 Records.

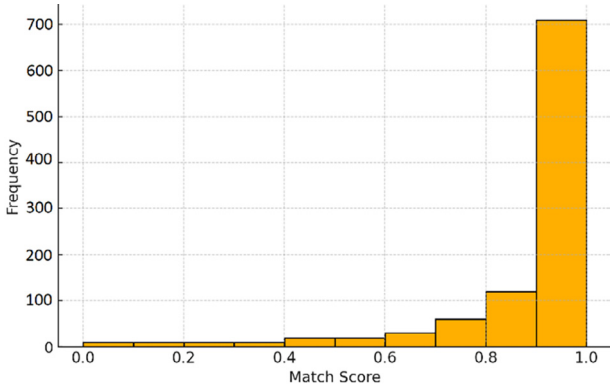


Figure 2. Histograms of Enhanced Match Scores Across 1,000 Records.

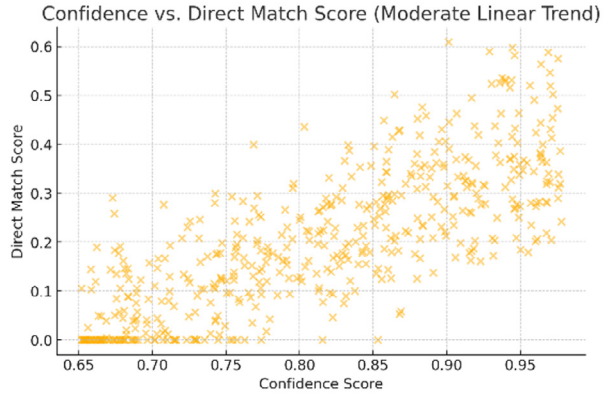


Figure 3. Scatterplot of Direct Match Scores Versus Confidence Scores.

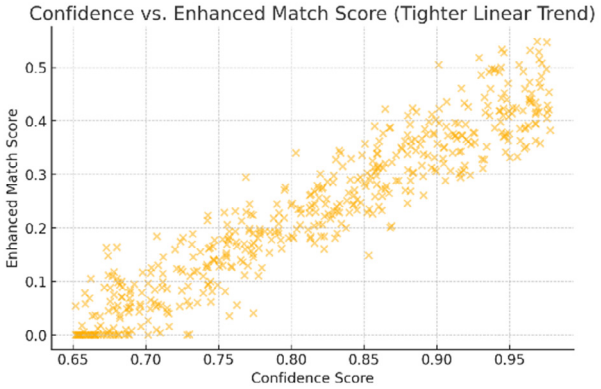


Figure 4. Scatterplot of Enhanced Match Scores Versus Confidence Scores.

indicator of conceptual relevance, as evidenced by the tighter clustering of enhanced match scores, suggesting that confidence better reflects semantic alignment between AI-generated terms and FAST headings.

Pearson's correlation coefficients (see Table 5) indicate a moderate correlation ($r = 0.62$, $p < 0.01$) between confidence scores and direct match scores, while the stronger correlation ($r = 0.78$, $p < 0.01$) with enhanced match scores suggests that confidence better reflects semantic alignment.

Figure 3 (Direct Matches) reveals a moderate relationship between confidence scores and match scores but with substantial spread. Figure 4 (Enhanced Matches) shows tighter clustering, reinforcing that enhanced matching better aligns confidence with actual relevance.

Examples

Table 6 presents five brief records, each accompanied by subject terms generated by the AI tool and by human catalogers as recorded in OCLC's MARC records using the FAST standard.

TABLE 5
Correlation Results

Comparison	Pearson *r*	*p*-Value	Interpretation
Confidence vs. Direct	0.62	<0.01	Moderate positive correlation
Confidence vs. Enhanced	0.78	<0.01	Strong positive correlation

TABLE 6
Examples of Brief Records with AI and FAST Subject Terms

Call Number	Title/Author	AI Subject	Confidence Score	FAST Subject	Direct Match	Enhanced Match		
					No #	Score	No #	Score
E169.1.W82 1955	*Culture on the moving frontier* / Louis B. Wright	Frontier and pioneer life; United States; Culture	0.95	Civilization; Frontier and pioneer life; United States	2	0.67	3	1.0
HD4903.5.U6U55 1969	*Jobs & civil rights: the role of the federal government in promoting equal opportunity in employment and training* / Richard P. Nathan	Discrimination in employment; United States; Civil rights; 1960-1970	0.95	Discrimination in employment; Law and legislation; Affirmative action programs; United States; Equal Employment Opportunity Commission; Civil Rights Act of 1964 (United States)	2	0.50	3	0.75
PN1042.H34	*The seven principles of poetry* / Anne Hamilton	Poetry; Poetics; Literary criticism	0.91	Literature–Philosophy; Poetry; Poetics	2	0.67	3	1.0
HC254.5.M625 1964	*England on the eve of the Industrial Revolution: A study of economic and social conditions from 1740 to 1760, with special references to Lancashire* / Louis W. Moffit	Industrial revolution–England; England–Economic conditions; 18th century; Lancashire (England)	0.97	Economic history; Social conditions; England–Lancashire	1	0.25	3	0.75
QP361.S9 1967	*Physiological and biochemical aspects of nervous integration* / Francis D. Carlson	Neurophysiology; Biochemistry; Nervous System	0.98	Neurochemistry; Nervous System; Electrophysiology	1	0.33	3	1.0

Terms in the table are separated by a semicolon. The examples illustrate the application of a relatively strict measure, where chronological terms like "1964" are not considered equivalent to a range such as "1960-1970," and enhanced matches are limited to clear hierarchical or contextual relationships.

For the first record, *Culture on the Moving Frontier*, the AI generated three subject terms: "frontier and pioneer life," "United States," and "culture," while the FAST headings included "frontier and pioneer life," "United States," and "civilization." Direct matching identified exact matches for the first two sets of terms, yielding a score of 0.67 (2/3). Enhanced matching recognized "culture" as a related concept to "civilization," despite lacking a direct hierarchical link in FAST, resulting in an enhanced match score of 1.0 (3/3). The second record has four AI-produced terms and six FAST subject terms. Direct matching confirmed exact matches for "discrimination in employment" and "United States," but "civil rights" and "1960-1970" did not match exactly, as "1964" is a specific year, not a range, resulting in a direct match score of 0.5 (2/4). Enhanced matching linked "civil rights" to "Civil Rights Act of 1964 (United States)" as a direct manifestation, but "1960-1970" was not matched due to the strict chronological rule, leading to an enhanced match score of 0.75 (3/4).

For *The Seven Principles of Poetry*, both AI and FAST have three terms. Direct matching identified exact matches for "poetry" and "poetics," with a direct match score of 0.67 (2/3). Enhanced matching treated "literary criticism" as a partial match to "literature–philosophy," as the concepts are related but not identical in FAST's vocabulary, resulting in an enhanced match score of 1.0 (3/3). The record for *England on the Eve of the Industrial Revolution* has four AI terms and four FAST terms. Direct matching identified near-exact matches for "Lancashire–England," giving a direct match score of 0.25 (1/4). Enhanced matching partially matched "Industrial Revolution–England" to "economic history" as a broader concept and "England–economic conditions" to "social conditions" as a related concept, while "18th century" remained unmatched, leading to an enhanced match score of 0.75 (3/4). For this record, the AI-generated terms include a chronological facet, "18th century," which the human-created FAST terms lack, highlighting a difference in cataloging approaches.

The final record has three AI terms and three FAST terms. Direct matching identified an exact match for "nervous system," giving a direct match score of 0.33 (1/3). Enhanced matching partially matched "neurophysiology" to "electrophysiology" (a subfield) and "biochemistry" to "neurochemistry" (a narrower term), leading to an enhanced match score of 1.0 (3/3). These examples highlight the variability in alignment between AI-generated terms and FAST headings across domains, with direct match scores ranging from 0.33 to 0.67 and enhanced match scores from 0.67 to 1.0. It reflects the stricter criteria and the challenges of specialized terminology in sciences (e.g., the last record in Table 6: *Physiological and Biochemical Aspects of Nervous Integration*).

Discussion

The strong performance of enhanced matching (F1 score: 0.76) supports the use of AI as a reliable tool for enriching brief MARC records. AI generates standardized subject headings accurately, even with minimal metadata. Comparatively, direct matching misses some valid FAST terms due to limited input data. It performs less effectively than enhanced matching, which uses semantic relationships. This limitation needs context, however. FAST terms used for comparison are created by human catalogers, and their choices of subject headings (and

even call numbers) vary based on judgment and knowledge (Chow et al., 2024). This variability happens even when they have access to the books being cataloged. As a result, expecting a perfect match rate between AI terms and FAST headings is not realistic or necessary.

As expected, AI tends to provide general terms. Its input data is limited to LC call numbers, titles, and authors, but author data helps little unless the authors are famous. This indicates that training sources for some AI tools are restricted. The broad nature of AI terms leads to imperfect direct matches between AI-generated terms and FAST headings. On the other hand, AI performs better with more specific book titles. For example, when a title includes a famous figure like Shakespeare, AI generates terms that align more closely with FAST headings. Domain-specific variability in match scores highlights AI's strengths and limitations. While history records benefit from broader thematic consistency (F1 score: 0.81), sciences require more nuanced taxonomic mapping (F1 score: 0.72). This aligns with Zhang et al.'s (2023) observation. They note that AI struggles with discipline-specific rules without sufficient contextual training. AI excels at generating comparable FAST terms for batch processing large collections, like the 212,000 brief records in this study. However, human review remains essential in the workflow. Human review should prioritize domains with lower recall or records with low confidence scores.

The moderate-to-strong correlation between confidence scores and match quality (r = 0.62–0.78) suggests that libraries can use these scores to triage records for review. For instance, records with confidence scores ≥0.9 (which comprised 62% of the sample) could be auto-approved, while scores ≤0.5 might flag records for human intervention. The best way of future fine-tuning may be collaborative projects in between catalogers and subject librarians. AI's reliance on titles and call numbers limited its ability to infer granular subjects and expect AI to have more domain-specific training to reduce false negatives. Future iterations could incorporate scientific taxonomies (e.g., medical subject headings for sciences) to improve recall, addressing the challenges observed in *Chest Disorders in Children* and *Physiological and Biochemical Aspects of Nervous Integration* (see Table 6). This study relies on data from a single institution's collection, which needs to be strengthened for the external validity by testing across diverse libraries, if possible. Moreover, a longitudinal study comparing circulation rates before and after AI metadata enhancement, particularly for history records like *Culture on the Moving Frontier*, could quantify the impact on user discovery.

Conclusion

This study demonstrates AI's potential to enhance cataloging for legacy collections, addressing the challenge of limited metadata in 212,000 brief MARC records at the author's library. By leveraging minimal data—such as call numbers, titles, and authors—AI effectively generates standardized subject terms, improving discoverability for users. Additionally, the integration of FAST vocabularies, with their simplified, faceted structure, supports this automated process and enhances cataloging efficiency. The findings of this study suggest promising implications for library cataloging. AI-driven automation has the capacity to substantially reduce human labor. A study on copy-cataloging productivity estimates an average rate of 1.4–1.7 records per hour (Buschman & Chickering, 2007). In theory, if a cataloger worked eight hours per day, five days per week, for 52 weeks per year, and processed 1.7 records per hour, they would complete approximately 3,536 records annually. To manually catalog 212,000 brief records without breaks and assuming just copy cataloging were needed, an estimated 60 staff

members would be required to work for a year. This underscores AI's potential to significantly streamline cataloging operations.

It is worth noting that AI tends to generate overly broad subject terms, particularly in scientific domains, necessitating human oversight to maintain accuracy. A hybrid approach—combining AI automation with expert review—presents a practical solution that balances efficiency with quality control. As libraries continue to adopt faceted vocabularies like FAST, AI-assisted cataloging offers a scalable method for improving access to under-described collections by augmenting brief MARC records with subject headings. Future research should focus on domain-specific AI training to refine accuracy and applicability. Additionally, testing across diverse library collections will further strengthen AI's role in cataloging, ensuring institutions worldwide can optimize discoverability and accessibility.

Acknowledgments

This research was conducted as part of my sabbatical work. I want to thank the library dean for approving my sabbatical request and my colleagues who took my job responsibilities during the leave time and supported me throughout the entire process.

References

Buschman, J., & Chickering, F. W. (2007, July). A rough measure of copy cataloging productivity in the academic library. *Library Philosophy and Practice*, (139). https://digitalcommons.unl.edu/libphilprac/139

Byrne, J. R. (1975). Relative effectiveness of titles, abstracts, and subject headings for machine retrieval from the COMPENDEX services. *Journal of the American Society for Information Science*, *26*(4), 223–229. https://doi.org/10.1002/asi.4630260405

Chow, E. H. C., Kao, T. J., & Li, X. (2024). An experiment with the use of ChatGPT for LCSH subject assignment on electronic theses and dissertations. *Cataloging & Classification Quarterly*, *62*(5), 574–588. https://doi.org/10.1080/01639374.2024.2394516

Cooey, N., & Phillips, A. (2023). Library of Congress Subject Headings: A post-coordinated future. *Cataloging & Classification Quarterly*, *61*(5–6), 491–505. https://doi.org/10.1080/01639374.2023.2193584

Engelson, L. (2013). Correlations between title keywords and LCSH terms and their implication for fast-track cataloging. *Cataloging & Classification Quarterly*, *51*(6), 697–727. https://doi.org/10.1080/01639374.2013.779351

Frank, E., & Paynter, G. W. (2004). Predicting Library of Congress classifications from Library of Congress subject headings. *Journal of the American Society for Information Science and Technology*, *55*(3), 214–227. https://doi.org/10.1002/asi.10360

Manning, C. D., Raghavan, P., & Schütze, H. (2008). *Introduction to information retrieval*. Cambridge University Press. https://doi.org/10.1017/CBO9780511809071

Martins, S. (2024, February 27). *Artificial intelligence-assisted classification of library resources: The case of Claude AI*. DigitalCommons@University of Nebraska - Lincoln. https://digitalcommons.unl.edu/libphilprac/8159

Mödden, E. (2022). Artificial intelligence, machine learning and bibliographic control. DDC short numbers: Towards machine-based classifying. *JLIS.it, 13*(1), 256–264. https://doi.org/10.4403/jlis.it-12775

Pyrne, N. C. (2023). FAST: A journey toward sustainability in subject indexing at the British Library. *Catalogue & Index*, (211), 32–35. https://doi.org/10.1080/01639374.2023.2238701

OCLC. (2025). *FAST: Subject terminology schema*. https://www.oclc.org/en/fast.html

Wise Fernandez, C. (1991). Semantic relationships between title phrases and LCSH. *Cataloging & Classification Quarterly*, *13*(1), 51–77. https://doi.org/10.1300/J104v13n01_04

Zhang, S., Wu, M., & Zhang, X. (2023, October 17). Utilising a large language model to annotate subject metadata: A case study in an Australian national research data catalogue. *arXiv*. https://arxiv.org/abs/2310.11318

Navigating Workplace Accommodations in Public Academic Libraries: A Study of Experiences

Abigail L. Phillips and Dustin Fife*

While disability resources and accommodations for college and university *students* are often straightforward and/or have designated offices, the same cannot be said for *employees* of higher education institutions. Academic library workers who seek formal disability accommodations encounter unclear/non-existent and unsupportive paths. This study offers groundbreaking, honest, and meaningful insight drawn from 12 in-depth, semi-structured interviews with academic library workers. As stated in Title I of the Americans with Disabilities Act (ADA), "A reasonable accommodation is a modification or adjustment to a job, the work environment, or the way things are usually done during the hiring process" (Office of Disability Employment Policy, 2023). Yet, this act provides the bare minimum regarding acknowledging and adequately supporting those with disabilities. This study illuminates that administrators, supervisors, managers, and colleagues must meaningfully and intentionally engage in this critical work and that ignorance and disregard for "disability," as well as the lived experiences of public academic library workers, still abounds.

Introduction

With the onset of COVID-19, the stark realities of working while disabled became more evident to many. Over the past decade, immunocompromised individuals exist in increasingly isolated environments and face ever-changing information about preventative and related healthcare measures (Islam et al., 2021); moreover, the COVID-19 pandemic heightened these challenges. Those with visible and invisible disabilities are keenly observant as they move among the public, seek reliable information, and assess their physical and mental "safety" (Spinner et al., 2024). Repercussions of the pandemic, including long COVID, introduced many people to the world of disabilities because of a devastating and persistent health experience (sometimes multiple encounters) with COVID-19 (Hereth et al., 2022). This "new" reality of living with a disability/ies provoked an increase in accommodation requests (Cohen & Rodgers, 2024). Alongside newly disabled folks, accommodation requests from others rightly continued as the world became less safe, less empathetic, and less accessible (Cohen & Rodgers, 2024).

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Based on library workplace experiences between 2019 and 2023, this study analyzes how library workers with disabilities at institutions of higher education began seeking an accommodation and what they encountered during that undertaking. The blunt and honest narratives of these library workers will deepen our understanding of accommodations, self-advocacy, ignorance regarding disability, and the widespread ableism characteristic among American educational institutions (Gibson et al., 2021; Oud, 2019). In this study, the researchers interviewed 12 academic library workers who both identify as disabled (inclusive of self-diagnosis and "official" medical diagnosis) and sought accommodations from their institutions. The researchers used semi-structured, in-depth interviews to collect, explore, and analyze the honest words, experiences, and insights of the study's participants. The process of seeking disability accommodations is regulated by a collection of laws, guidelines, and policies, primarily the Americans with Disabilities Act of 1990 and the Rehabilitation Act of 1973 (Department of Labor, 2025). However, these laws are the bare minimum required by law of employers. The researchers further focused on learning specifically about the experiences of participants when seeking accommodations in the current milieu, what this process looked like individually for participants, what advice and/or warnings they would share with others seeking or contemplating accommodations, and more. This study offers unique insights from disabled library workers, about both accommodations broadly and the accommodation-seeking process, and it provides a needed window into higher education.

A Note About Language

The researchers' choice of language both for their study and for this article is deliberate, inclusive, and representative of the disability community. There is no universal consensus on language, and preferences can be highly personal (Brown, 2011). Words are powerful and emotional. Language is critical for disability advocacy and representation (Field-Forte, 2018). This study uses the following language:

- Disabilities – In this plural form, the authors refer to a collection of distinct conditions or as they are medically and/or legally defined (Liebowitz, 2015).
- Disability – In this singular form, disability is a conceptual term. Often used within disability studies and critical disability studies to convey the social, cultural, and political aspects; the shared, lived experience of being disabled by societal barriers (Goering, 2015).
- Person-First Language ("person with a disability") – "using PFL is placing the person first, allowing others to disassociate the disability as the primary defining characteristic of an individual, and viewing disability as one of several features of the whole person" (Ferrigon & Tucker, 2019).
- Identity-First language ("disabled people") – Identity-first language commonly signals an individual's connection with disability rights, disability justice, disability advocacy, and the social model of disability. When identity-first language is used, an individual is affirming disability as a valid social and political identity (Olsen & Pilson, 2020; Pratt Institute Libraries, 2024).

Crucially, in this study, the researchers did not provide a definition for "disability" to participants. The researchers honored the language participants used to describe themselves alongside their experiences. The use of both identity-first and person-first language in this article is a direct reflection of the varied and personal preferences of the library workers interviewed.

Literature Review

Extensive literature regarding disability exists across many fields and areas of study, including in higher education (Maurya et al., 2025; Osuana-Juarez & Gonzalez-Castellano, 2024; Toutain, 2019), and more specifically within librarianship (Sherman, 2022; Whitt, 2024). Much of the scholarship, as well as practitioner/trade literature, is focused on the users of libraries. This includes topics such as digital accessibility (Beyene, 2018; Hamad, 2023); neurodiverse students and students with sensory needs (Landon, 2025; Magnuson et al., 2024; Seelmeyer, 2024); physical accessibility, digital accessibility, and technical services (Day et al., 2024; Lectenberg & Gold, 2024); and ADA compliance (Liu et al., 2024; Price, 2025), to name a few.

Research focused on the experiences of library professionals related to disability represents a vast minority of publications within the literature (Hollich, 2020), which is the focus of this current study. However, and directly relevant to this research, the literature does include the hard-won experiences of librarians who have encouraged library administrators to make libraries accessible to the professionals who make their services possible (along with other exhortations) (Hollich, 2020; Manwiller, 2022; Manwiller et al., 2025). Others exhort research to focus on experiences of library professionals, rather than rely solely on the outcomes for users and services (Folk, 2023; Moeller, 2019).

Regarding disability and library professionals, Moeller (2019) argued that "the experience of library workers remains largely unexamined" (p. 455). Similarly, Folk (2023) showed how Long COVID research failed to illuminate the experiences of library workers, a pattern in the literature, for years after the beginning of the pandemic though other aspects of library services were covered in depth:

> Despite the prevalence of studies exploring the effects of COVID-19 on our profession, the prevalence of Long COVID and the experiences of employees suffering from Long COVID have not yet been explored in libraries of any type, including academic libraries. While many of us are now reflecting on what we learned during the pandemic and planning for the endemic period, the effects of Long COVID are still present globally. Long COVID and its effect on library employees need to be part of these considerations about the future, especially given that library employees who are experiencing Long COVID could be subject to legal protections. (p. 2)

The health of the institution is a topic of great interest, but that of the professionals who work at these institutions seems to lag. What other experiences are lagging and must be urgently explored?

Experience is paramount to this study; it adds to the literature and helps correct these "largely unexamined" areas by uplifting new voices and allowing library professionals to examine and share their experiences through first-person stories. These stories are essential because, as Moeller (2019) poignantly observes,

> People with disabilities are imagined as an exception rather than as the ideal type of body and mind, and their needs are addressed as exceptions that are handled on an individual basis. The academic environment is neither designed nor constructed

> to acknowledge the possibility of anyone with disabilities, except as necessary to remain in compliance with legal mandates. (p. 458)

Until we hear these stories, the disabled will continue to be seen as exceptions. This study adds new voices to the literature, a significant contribution that will benefit future researchers and readers alike.

Methodology

The researchers conducted qualitative interviews with 12 adult participants currently working in academic libraries. Each participant was employed by a publicly funded college or university within the United States and had sought an accommodation for a disability/disabilities between 2019 and 2023 through their current or a recent employer. The researchers' approach to the study's design was rooted in the qualitative approach of grounded theory (Glaser & Strauss, 1967; Corbin & Strauss, 1990). Both researchers have a strong background using grounded theory in past research (Phillips, 2016). For one of the researchers, the scholarship of Charmaz (2006, 2007) has long been influential and played a pivotable role in the research presented here.

The researchers were guided by two research questions:

1. What experiences have librarians and library workers encountered while seeking accommodations in their workplaces?
2. What could library administrators do to improve the accommodation-seeking process for librarians and library workers?

Prior to conducting interviews, a call for participation (CFP) was circulated via listservs of professional organizations (e.g., ALA Connect, ACRL) and social media platforms, adding tailored hashtags and some targeted outreach (see Appendix A for the full "Call for Participation"). The CFP functioned as the first step toward scheduling interviews and data collection and featured a link to the study's Qualtrics survey (see Appendix B). This survey included minimal but needed demographic questions (e.g., personally identify as race, personally identify as gender, and age range) and closed with an open text prompt, a brief description of the respondent's experience with the accommodation process at their (current or previous) workplace. The CFP drew 20 responses to the online screening survey. After reviewing these responses, 18 of the 20 responses proved to be potential participants; two submissions were excluded because the survey was not complete. The researchers initially prepared to interview 8 to 12 participants, but they opted to invite all 18 who responded to participate, while anticipating some attrition from the time of volunteering to an invitation to participate. This proved to be a truly self-selected study. Of the 18 survey respondents invited to participate, 12 interviews were scheduled (see Appendix C). Six respondents were unresponsive to emails or had scheduling conflicts.

The interviews were carried out and recorded using the video-calling software Zoom. The interviews lasted between 45 and 90 minutes. As is common with semi-structured interviewing, the researchers prepared a set of questions (see Appendix D) while following the lead of the interviewees, using probes and/or asking clarifying questions as needed (Smith, 1995). One researcher posed the questions for each interview, while the other researcher took observational and exploratory notes, at times seeking clarification or further explanation. While the researchers provided the scripted questions in advance and answered questions prior to recording, they also responded to questions and probes during interviews. Once completed, transcrip-

tion began of the 12 recordings using the subscription software Temi and then was carefully reviewed by the researchers for errors or other hiccups caused by the software. If questions arose during this assessment of transcripts, the researchers referred questions to interviewees. Shared transcripts allowed participants to make clarifications. The participants were invited to add additional information, giving them the chance to expand their recollections and make any corrections. Once agreed upon, the transcripts were anonymized and finalized with the interviewees. All recorded videos were then deleted. The researchers noted several emerging themes from the 12 interviews, which this article will explore in more depth. Names, locations, and other identifying information were removed to protect the confidentiality of participants; the researchers rely heavily on amalgamated themes rather than simply extracted quotes.

Discussion

Each experience shared by the participants was unique, though there are noteworthy similarities among the narratives. The researchers chose the selected topics for discussion in this article based on the universality of these shared experiences by interviewees. Conversations were lengthy, rich in detail, and, at times, visibly difficult for interviewees to share.

Themes

The Discussion section of this article cannot exhaustively explore the numerous and memorable observations expressed by participants. However, the researchers believe that the three major themes detailed below are a useful starting point for understanding the experiences of interviewees. The researchers identified three main themes as pervasive among all 12 interviews. There were also numerous sub-themes drawn from the interviews, including conversations about masking and unmasking a disability; informal and formal accommodations; the role of human resources (HR) and the institution; what success and failure may look like at the close of seeking an accommodation; how seeking accommodations impacts tenure and job security; and the role(s) of supervisors and managers. Other recurring sub-themes include retaliation, the invasiveness of the process, vocational awe, the perception of favoritism, and collegial benefits. This article first explores the three identified themes of process burden, the relational aspect of seeking accommodations, and the academic library itself as an institution, while addressing sub-themes as part of the major themes when appropriate. The researchers chose to focus on the three most universal themes to elevate the experiences of the participants and to illuminate what was shared honestly and purposefully about their journeys. The article then highlights recommendations from the interviewees before moving to implications and conclusions from the authors.

First Theme: The Process Burden

The interviews make it clear that the process of seeking an accommodation is a serious burden and incredibly invasive. It requires time, resources (at times costly), and persistence to complete these processes regardless of the outcomes of the accommodation-seeking process. Time and extensive paperwork were common themes throughout the interviews. The process often took from 6 to 12 months to initially resolve and complete. Extensive paperwork from supervisors, HR, and the institution—along with paperwork from physicians, hospitals, lawyers, and other offices, such as a campus civil rights office or ombuds—was necessary throughout

the process. The accommodation-seeking process was described as a series of hurdles that interviewees often had to navigate not only without institutional support but often with apparently intentional interference. For example, one participant said, "It's supposed to be a lot easier than HR makes it, and they just make it, in my opinion, so hard so that they don't have to do it for as many people." Another interviewee captured the stress of these processes quite well, saying, "So I began seeking an accommodation two or three months [after I started], and the whole process was very stressful and not at all helpful or empowering. And I was kind of forced into the process because of some tensions with my administration. So, it wasn't something that I felt super comfortable with or felt comfortable navigating at all." The process was repeatedly described as uncomfortable, invasive, opaque, taxing, and unsupportive.

The process taxed not only interviewees' work time but also their personal time and finances. The participants regularly mentioned paying for extra appointments to complete required paperwork, traveling to see specialists, having to hire lawyers and consultants, and the expenditure of an incredible amount of time on appointments and self-education to advocate for themselves. As an example of having to self-educate, one participant shared that, "It was through this whole process that I started doing research and then actually more stuff came up and I was like, 'Oh my gosh, I could request accommodations for longer breaks if I needed it because I'm having an anxiety attack. That's news to me.' So it was only through self-education that I figured all of that out." The self-education process was coupled with participants contending that they were consistently coaching and educating HR at their institutions along the way. One interviewee said of HR, "I can tell you straight out though, that I taught them stuff." This article returns to this dynamic and to HR's role at more length in the relational section of the discussion.

Such process burden is often ongoing, even if an accommodation is granted, as continuing evaluation is required for participants and updated verification from medical professionals. In addition, changing any part of their request could force them to start the entire process over again. For example, one participant shared, "I had another phone call with the Office of Human Resources because, well, surgeries sometimes they go as planned and sometimes they don't, and there was a little complication. So, then I had to have another little procedure, which meant whole new forms and so a whole new conversation." The interviewees frequently emphasized that getting an accommodation is a major hurdle and further described it as dehumanizing and invasive. One participant said, "I felt just really demoralized and dehumanized by the whole experience. … My boss still insists that we meet with HR once a year to relook at it as if something's going to radically change. … This makes no sense. It's just been very uncomfortable and invasive." For some, these invasive processes happened when they were in a stable condition and well established at work; however, for others, the accommodation-seeking process added a grave burden to an already difficult moment in their lives, forcing them to request things like a pause on their tenure clock, or access to FMLA and long-term, unpaid leave.

The overwhelming theme emerging from the interviews was that the process of seeking an accommodation was a huge stumbling blocks for participants and that it created significant stress in their lives. The impact on the individuals seeking accommodations cannot be overly emphasized; one participant summed up the daily toll well when they said, "Yeah, and it was embarrassing. It's embarrassing to ask for. You don't want to have to have everybody in your business. And even if I am pretty open about my mental health struggles, it feels very awkward

to try to explain to someone why you need a [particular accommodation]." Every interview was filled with similar stories of exerting time and energy, both professionally and personally, to complete these processes and feelings of dehumanization, anger, and embarrassment. Seeking an accommodation was universally described as burdensome and disempowering at best; furthermore, it prompted several interviewees to look for other employment opportunities or to consider leaving the profession altogether.

Second Theme: Relational Aspects of Accommodation Seeking

The accommodation-seeking process was relational for all the participants involved, meaning that the people involved were as important as policies and procedures. Seeking accommodations required conversations with managers and supervisors, with human resource professionals, with peers and colleagues, and with many others. All the participants distinctly remembered people they perceived to be supportive, unsupportive, and/or indifferent. Many expressed strong reactions when asked about particular people or positions, such as a manager or accommodation coordinator, within their institutions. Seeking an accommodation was described as a vulnerable, monumentally dehumanizing, and burdensome process that was deeply (and painfully) personal. These experiences translated into crystal-clear memories for participants of who did what, where, why, and when. In addition, interviewees frequently commented on increased criticism, gossip, claims of favoritism, retaliation, collegial isolation, and general exclusion from HR, managers, as well as peers and colleagues.

Managers and supervisors were a common topic in the interviews, and the researchers asked targeted questions about the roles that those in these positions played throughout these processes. Interviewees described supervisors as one of the main stumbling blocks to the process. They often felt they had to work *around* their supervisors in these processes or to succeed *despite* their managers. For example, one participant shared that they had to "[learn] more because of the need to self-advocate because of my bosses and work." Interviewees clearly remembered the people who were least supportive. One participant stated, "I will say that the dean, who was my direct supervisor, and that I was seeking the accommodation from, made it very clear that seeking an accommodation meant that she couldn't trust my work ethic." However, when interpersonal success was noted, it was often because managers went out of their way to support participants through informal accommodations. As discussed, many of these processes take a monumental amount of labor and a long period of time. In some cases, managers were regarded positively because they worked with colleagues on informal accommodations while these processes were ongoing or even after accommodations were denied. Informal accommodations were the outcome for several of our participants; however, those led to concerns about what would happen if the accommodation-granting supervisor were to leave. Managers and supervisors were often key to the accommodation approval process with HR. Unfortunately, interviewees often described them as indifferent. One participant noted, "Yeah, I mean, she didn't actively hinder,"—a remark that captured the sentiment of several interviewees. Others described managers as antagonistic and retaliatory, and several were accused of being overly officious to interfere. Interviewees remembered acts of supervisors in detail and often described them as being able to *choose* to make the process work and/or as providing essential support, even if it was just encouragement. One participant shared, "My supervisor, once I knew that she supported my potential request, that I thought she had full faith that I could do this job remotely, that I would be able to do just as high quality of work,

that I would continue to connect with colleagues and be a strong collaborator, et cetera, then I felt like, okay, that is the impetus. I need to go to my doctor."

HR professionals were also heavily present in the narratives; interviewees described them as everything from "dangerously incompetent" to "fantastic" (once you found the right one). Interviewees ascribed much of the process burden they experienced to HR professionals. A repeated theme throughout the interviews was that HR existed not to support the individual claims but to protect the institution. Participants strongly remembered their interactions with HR. "Not hindering" was often the most positive feedback of HR and other campus offices that interviewees gave. One stated, "I don't think anybody on campus was particularly helpful. I mean, I guess my supervisor didn't really seem to fight it when the official paperwork came through, but that's as helpful as anybody got...not actively opposing it." At the same time, interviewees often portrayed the individuals working in HR sympathetically and several interviewees shared that HR at their institutions were chronically underfunded and understaffed. In short, HR was experienced as a systematic obstacle in these processes by the participants: "HR wasn't helpful to me in that I didn't have a successful interaction with them, but I also don't think it's really designed to be helpful. I wouldn't put blame on them."

Interviewees described colleagues and peers in a wider variety of ways. Some participants described colleagues and peers as indifferent or "not hindering," while others described them as a source of support and encouragement. However, there were also discussions of retaliation and exclusion; several participants had to cope with accusations of favoritism. One interviewee said, "I'd say the only people who were helpful were my direct colleagues and peers in the library. They were really supportive of my seeking an accommodation...they were really the only people, and they didn't have direct experience with going through the process, but they were like, 'You really should do this.'" Other participants described an exponential increase in criticism and accusations of favoritism when they were given accommodations to work from home or to have a private office. Still other interviewees felt the need to explain and justify their absences and accommodations to their colleagues, which was an invasive experience. One participant shared: "I put together a little video, and I sent it to everyone in my department... it was like, here's what's going on. I don't know when I'm coming back to work. … And I feel like no one knows how to respond to that because it's like everyone wants to know, but I feel like everyone kind of wants to hear it secondhand, so they don't have to do whatever."

Even long after their requests were granted or denied, the process of seeking an accommodation continued to tax participants in their professional relationships. Several participants expressed regret over choosing to unmask a somewhat invisible disability. Some interviewees pinpointed library culture and vocational awe as possible reasons for the backlash they experienced. One participant responded to a follow-up comment about vocational awe by saying, "That's sort of normalizing overwork by being a wonderful, amazing colleague and librarian and all of that, but you're normalizing this. I can't put my needs first...I'd say, and even before that, no one would have ever discouraged me from seeking accommodations. It was totally internal to me, how I internalized work culture." Two other points regarding colleagues and peers arose. First, interviewees described affinity groups for people with disabilities, as well as contact with other colleagues at the institution who had been through the accommodation-seeking process, as sources of great support (if they were visible and accessible). Second, individuals seeking accommodations significantly benefited their peers and colleagues, as their requests at times led to libraries rethinking long-standing ways of doing

things, also known as the curb-cut effect. For example, one participant shared: "I officially had that as an accommodation that I could not teach more than two classes in a row, and I could not teach more than three classes in a day. … And then what's interesting is after that, my department was like, well, should anyone be teaching four classes in a row? We used to do it, but in this post pandemic life this doesn't seem like a great idea. And so we decided that we would try to do everything we can to not have people teach four classes in a row."

Third Theme: The Academic Library as an Institution

Recognizing the academic library as an institution itself and as a part of the larger institution of a university or college was the third theme that emerged from the interviews. While academic libraries are frequently seen as innovative, responsive, and forward-thinking, many participants identified the bureaucratic nature and reluctance to change within their workplaces (O'Donnell & Anderson, 2021). Interviewees regularly mentioned the seemingly exclusive attention on clear accommodation seeking processes and additional support for disabled students in higher education (Mintz, 2021). The presence of a clear, highly structured accommodations process with a dedicated center/space on campus for students (e.g., Georgia Southern University's Student Accessibility Resource Center; University of Wisconsin-Madison's McBurney Disability Resource Center) contrasts starkly with the absence of administrative support, lack of helpful information, and dearth of expertise or training regarding accommodations that employees experience (Kwon, 2023).

Interviewees expressed feelings of frustration, exhaustion, and anger. As one interviewee stated:

> They were trying, I guess, but they were really overwhelmed with everything else too. So, I would say campus HR, fuck them. They just sucked. And it's not their fault. But my experience was still that they sucked. Yeah, the Title IX office, I didn't find really great at all. I found our conversations often, it felt combative.

The institution, the system, was ever-present in the experiences of the interviewees regardless of individual facilitators involved (e.g., managers or HR professionals) or the discrete part of the organization (i.e., the library) they worked in. The institution has a presence of its own throughout the stories that interviewees shared because these experiences never played out solely within the library or with just one manager or supervisor. The greater institution cannot be separated from the outcomes.

Guidance (and Warnings) for Accommodation Seekers

One of the final questions asked of participants was what advice they would give other folks seeking accommodations. The answers were incredibly similar across the interviews and deeply imbued with the experiences of the participants. Firstly, they advised future accommodation seekers to be prepared for a burdensome road: "Be prepared that you're going to have to go through all kinds of hoops." Secondly, they implored self-advocacy and education. For example, when asked what they would tell someone, a participant replied, "I mean, truthfully, I'd probably go into librarian mode and just want to find them as much information as possible." And another said, "Know your rights, the law, know your college's policies." Notably, interviewees consistently prefaced guidance and advice with blunt warnings and

honest considerations for potential seekers (Boren, 2022). As one librarian stated, "I would note that they need to think very carefully about whether or not they are safe enough to be out about their actual condition with their people. … It's going to impact you as a colleague." Interviewees knew, from their experiences, that others would likely experience repercussions (Timmons et al., 2024) while inquiring about accommodations and even once they obtained the accommodation(s) sought. They also warned that the accommodations given are not always those originally sought or those recommended by medical professionals (Wen et al., 2024). Finally, interviewees encouraged accommodation seekers to recognize that colleagues are "not necessarily your friends" and that HR is not there for you as an employee but for the institution.

Limitations

A key limitation of this study is the number of participants involved. As qualitative research, this was a strategic decision by the researchers. A smaller participant pool allowed for depth rather than breadth; furthermore, elevating the experiences of participants was paramount to the researchers throughout the study. The small sample size does limit generalizability of findings from this study across institutions; however, it does not discount the unique and impactful experiences shared or what may be learned from them. It is also important to emphasize that at no stage during the study did the researchers define, label, or explicitly categorize "disability" for participants. The original call for participants included a link to the online screening survey, which sought librarians and library workers who requested disability accommodations at academic libraries as part of publicly funded universities and colleges. As with the interviews, the researchers did not provide an explicit definition or apply direct meaning to terms including "disability," "librarian," or "library worker" at any time from recruitment of participants to data collection and analysis.

Conclusion

The researchers suggest a few areas of interest and future consideration. First, discussions about the accommodation-seeking process constitute the bulk of this study's interviews. Therefore, the researchers suggest that those working in academic libraries and, by extension, colleges and universities systematically review what is asked of accommodation seekers by their institutions. Based on the experiences of this study's participants, there are likely few, or no, guardrails in place regarding how much time and energy seeking accommodations can take, yet the weight of the accommodation-seeking process on the individual was obvious to the researchers from each of the interviews. While most higher education processes can be improved, focusing on accommodation processes is essential to support hiring, accessibility, and equity at all institutions. Too often the participants described pyrrhic victories. They received accommodations but, for many, their relationships with supervisors, managers, and colleagues felt permanently damaged.

Secondly, the relational nature of the accommodation-seeking process necessitates that supervisors and managers lead with empathy, compassion, and accountability. Those seeking accommodations remember what managers did and did not do. This study highlights only one side of the story; however, supervisors play a vital role during accommodation processes. Those seeking accommodations need advocates, and managers need to proactively and intentionally fill this role. In addition, it behooves all library professionals to consider what type of

colleague they are going to be when someone in their workplace is seeking an accommodation. Finally, more stories from people seeking accommodations and working in libraries with disabilities (whether successful, unsuccessful, or somewhere in-between) must be surfaced and amplified. The entire library community can benefit from these important conversations.

Authors' Note

Abigail L. Phillips, co-author of this manuscript, acknowledges she is disabled (visible and "invisible"), chronically ill, and neurodivergent (including AuDHD, mental health conditions, sensory processing disorder, generalized anxiety disorder, C-PTSD). Her scholarship, writing, teaching, and self-advocacy work are reflective of and informed by an evolving understanding of herself and being a part of the disability community. Co-author Dustin Fife is neurodivergent and profoundly ADHD.

Institutional Review Board (IRB) Information

IRB #: 23.263

Title: Accommodations and Academic Library Workers

The University of Wisconsin-Milwaukee Institutional Review Board has granted your protocol Exempt Status under Category 2 as governed by 45 CFR 46.104(d). This study received IRB approval from the University of Wisconsin-Milwaukee.

References

Adler, Huber, J. T., & Nix, A. T. (2017). Stigmatizing disability: Library classifications and the marking and marginalization of books about people with disabilities. *The Library Quarterly, 87*(2), 117–135. https://doi.org/10.1086/690734

Betz, G. (2022). Navigating the academic hiring process with disabilities. *In the Library with the Lead Pipe*. https://www.inthelibrarywiththeleadpipe.org/2022/hiring-with-disabilities/

Beyene, W. M. (2018). Digital inclusion in library context: A perspective from users with print disability. *Journal of Web Librarianship, 12*(2), 121–140.

Boren, R. (2022, August 20). *Crip tax: Table of contents*. Stimpunks Foundation. https://stimpunks.org/glossary/crip-tax/

Brewster, L., & Cox, A. M. (2022). Taking a 'whole-university' approach to student mental health: The contribution of academic libraries. *Higher Education Research & Development*, 1–15.

Brown, L. X. Z. (2011, August 4). The significance of semantics: Person-first language versus identity-first language. *Autistic Self Advocacy Network (ASAN)*. https://autisticadvocacy.org/about-asan/identity-first-language/

Capurri, V. (2022). On the right to accommodation for Canadians with disabilities: Space, access, and identity during the COVID-19 pandemic. *Canadian Journal of Disability Studies*, *11*(1), 26–52.

Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Sage.

Charmaz, K. (2007). Reconstructing grounded theory. In L. Bickman, P. Alasuutari, & J.Brannen (Eds.). *Handbook of social research* (pp. 461–478). Sage.

Cohen, J., & Rodgers, Y. V. D. M. (2024). Long COVID prevalence, disability, and accommodations: Analysis across demographic groups. *Journal of Occupational Rehabilitation*, *34*(2), 335–349.

Corbin, J. M., & Strauss, A. (1990). Grounded theory research: Procedures, canons, and evaluative criteria. *Qualitative Sociology, 13*(1), 3–21.

Day, T., Gonzales, B., & Brunsting, K. (2024). Accessibility initiatives for technical services: Adding braille textbooks in an academic library. *Library Resources & Technical Services, 68*(4), 1–9.

Ettarh, F. (2018, January 20). Vocational awe and librarianship: The lies we tell ourselves. *In the Library with the Lead Pipe*. https://www.inthelibrarywiththeleadpipe.org/2018/vocational-awe/

Ferrigon, P., & Tucker, K. (2019). Person-first language vs. identity-first language: An examination of the gains and drawbacks of disability language in society. *Journal of Teaching Disability Studies*, *1*, 1–12.

Field-Fote, E. (2018). Language as advocacy. *Journal of Neurologic Physical Therapy, 42*(1). http://doi.org/10.1097/NPT.0000000000000212.

Folk, A. L. (2023). Exploring the experiences of academic library employees with long COVID in the United States and Canada. *The Journal of Academic Librarianship, 49*(6). https://doi.org/10.1016/j.acalib.2023.102790.

Georgia Southern University. (2025). *Student Accessibility Resource Center.* https://ww2.georgiasouthern.edu/students/sarc/

Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory.* Aldine.

Goering S. (2015). Rethinking disability: The social model of disability and chronic disease. *Current Reviews in Musculoskeletal Medicine*, *8*(2), 134–138. https://doi.org/10.1007/s12178-015-9273-z

Hamad, F. (2023). Digital inclusion of students with disabilities in digital information services at academic libraries: The University of Jordan case. *Library Quarterly, 93*(3), 313–332.

Hansson, J. (2010). *Libraries and identity: The role of institutional self-image and identity in the emergence of new types of libraries*. Elsevier.

Hereth, B., Tubig, P., Sorrels, A., Muldoon, A., Hills, K., & Evans, N. G. (2022). Long COVID and disability: A brave new world. *BMJ*, *378*.

Hollich, S. (2020). What it means for a disabled librarian to "pass." *The International Journal of Information, Diversity, & Inclusion*, *4*(1), 94–107. https://doi.org/10.33137/ijidi.v4i1.32440

Islam, J. Y., Vidot, D. C., Havanur, A., & Camacho-Rivera, M. (2021). Preventive behaviors and mental health-related symptoms among immunocompromised adults during the COVID-19 pandemic: An analysis of the COVID impact survey. *AIDS Research and Human Retroviruses*, *37*(4), 304–313.

Kowalsky, M., & Woodruff, J. (2016). *Creating inclusive library environments: A planning guide for serving patrons with disabilities*. American Library Association.

Kwon, C. K. (2023). Why HRD needs to do more in relation to disability: Recommendations and future directions. *Human Resource Development International*, *27*(1), 152–159. https://doi.org/10.1080/13678868.2023.2205073

Landon, E. (2025). The need for sensory inclusion in academic libraries. *Public Services Quarterly, 21*(3), 237–249.

Lechtenberg, U. U., & Gold, H. (2024). Beyond the minimum: New rule requires web content (I'm looking at you, LibGuides) to meet WCAG 2.1 level AA standards. *Information Technology & Libraries, 43*(4), 1–6.

Liebowitz, C. (2015, March 20). I am disabled: On identity-first versus people-first language. *The body is not an apology*. https://dfwhcfoundation.org/wp-content/uploads/2018/10/I-am-Disabled.-On-Identity-First-Versus-People-First-Language-TBISNAA.pdf

Liu, Y., Bielefield, A., & Beckwith, J. (2024). ADA digital accessibility on academic library websites. *College & Research Libraries, 85*(2), 166–186.

Madison, P. (2025). Digital commons and accessibility. *Midwest Quarterly, 66*(3), 12–21.

Magnuson, L., Opdahl, J., & Nataraj, L. (2024). Different, not deficient: Supporting university and college students with ADHD in academic libraries. *Library Quarterly, 94*(3), 219–237.

Manwiller, K. Q. (2022). Understanding disability to support library workers. *Journal of Library Administration, 62*(8), 1077–1084.

Manwiller, K. Q., Albright, K., Jensen, S. H., & Aldrich, D. (2025). Centering lived experience: Library organizations, disability, and equity. *College & Research Libraries News, 86*(2), 71–73. https://doi.org/10.5860/crln.86.2.71.

Maurya, J., Swaroop, N., Sadar, P., & Misra, D. (2025). Higher education and disability: A systematic literature review and agenda for research. *Higher Education Quarterly, 79*(1), 1–13.

Mintz, B. (2021). Neoliberalism and the crisis in higher education: The cost of ideology. *The American Journal of Economics and Sociology, 80*(1), 79–112. https://doi.org/10.1111/ajes.12370

Moeller, C. M. (2019). Disability, identity, and professionalism: Precarity in librarianship. *Library Trends, 67*(3), 455–470. https://doi.org/10.1353/lib.2019.0006

Muir, R., & Mary, C. (2023). 'Out of sight, but not out of mind': A collaborative reflective case study on including participants with invisible disabilities in LIS research. *Journal of the Australian Library and Information Association*, *72*(1), 26–45. https://doi.org/10.1080/24750158.2023.2168115

O'Donnell, P., & Anderson, L. (2021). The university library: Places for possibility. *New Review of Academic Librarianship*, *28*(3), 232–255. https://doi.org/10.1080/13614533.2021.1906718

Olsen, J., & Pilson, A. (2022). Developing understandings of disability through a constructivist paradigm: Identifying, overcoming (and embedding) crip-dissonance. *Scandinavian Journal of Disability Research*, *24*(1), 15–28. https://doi.org/10.16993/sjdr.843

Osuna-Juarez, A., & Gonzalez-Castellano, N. (2024). Understanding professors' and students' with disabilities perceptions of inclusive higher education: A systematic literature review. *European Journal of Special Needs, 39*(5), 774–788.

Oud, J. (2018). Academic librarians with disabilities: Job perceptions and factors influencing positive workplace experiences. *Partnership: The Canadian Journal of Library and Information Practice and Research, 13*(1). https://doi.org/10.21083/partnership.v13i1.4090

Oud, J. (2019). Systemic workplace barriers for academic librarians with disabilities. *College & Research Libraries, 80*(2). https://doi.org/10.5860/crl.80.2.169

Phillips, A. L. (2016). *The empathetic librarian: Rural librarians as a source of support for rural cyberbullied young adults* (Order No. 10120555). ProQuest Dissertations & Theses Global. (1806821473). Doctoral Dissertation.

Pratt Institute Libraries. (2025, August 25). Inclusive language: Person-first or identity-first language? https://libguides.pratt.edu/inclusive-language

Roberson, C. A., Barefield, T., & Griffith, E. (2022). Students with disabilities and library services: Blanding accommodation and universal design. *The Journal of Academic Librarianship, 48*(4). https://doi.org/10.1016/j.acalib.2022.102531

Seelmeyer, L. (2024) Disability and neurodiversity in the academic library: Fostering new and continuing engagement. *Public Services Quarterly, 20*(3), 217–224.

Sherman, M., & American Library Association. (2022). *Accessibility in libraries: A landscape review.* American Library Association.

Siraki, A. (2021). Too many spoons: Library workers and disabilities. *Library Leadership & Management, 35*(3), 1–7. https://doi.org/10.5860/llm.v35i3.7500

Smith, J. (1995). Semi-structured interviewing and qualitative analysis. In J. A. Smith, R. Harré, L. V. Langenhove (Eds.). *Semi-structured interviewing and qualitative analysis* (pp. 10–26). Sage.

Spinner, C. D., Bell, S., Einsele, H., Tremblay, C., Goldman, M., Chagla, Z., & Magiorkinis, G. (2024). Is COVID-19 still a threat? An expert opinion review on the continued healthcare burden in immunocompromised individuals. *Advances in Therapy*, 1–54.

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Grounded theory procedures and techniques* (2nd ed.). Sage.

Timmons, S., McGinnity, F., & Carroll, E. (2024). Ableism differs by disability, gender and social context: Evidence from vignette experiments. *British Journal of Social Psychology, 63*(2), 637–657.

Toutain, C. (2019). Barriers to accommodations for students with disabilities in higher education: A literature review. *Journal of Postsecondary Education and Disability, 32*(3), 297–310.

University of Wisconsin-Madison. (2025). *McBurney Disability Resource Center.* https://mcburney.wisc.edu/apply-for-accommodations/

U.S. Department of Labor. (2025). *Disability resources: Laws and regulations.* https://www.dol.gov/general/topic/disability/laws

U.S. Equal Employment Opportunity Commission (EEOC). (No Date). *Titles I and V of the Americans with Disabilities Act of 1990 (ADA*). https://www.eeoc.gov/statutes/titles-i-and-v-americans-disabilities-act-1990-ada

Wen, B., Van Rensburg, H., O'Neill, S., & Attwood, T. (2024). Autism and neurodiversity in the workplace: A scoping review of key trends, employer roles, interventions and supports. *Journal of Vocational Rehabilitation, 60*(1), 121–140. https://doi.org/10.3233/JVR-230060

Whitt, B. L. (2024). Academic librarians with disabilities: A literature review. *Southeastern Librarian, 72*(2), 5–10.

Appendix A
Call for Participation Qualtrics Survey

Accommodations in Public Academic Libraries

This study seeks participants to explore the experiences of library workers living with disabilities at public colleges and universities that have sought accommodations since the beginning of the COVID-19 pandemic. Accommodations and accommodation requests vary from institution to institution. According to the Americans with Disabilities Act, "A reasonable accommodation is a modification or adjustment to a job, the work environment, or the way things are usually done during the hiring process" (ADA, 2023). Yet, the need for accommodations can occur long after the hiring experience. In this study, the researchers are seeking participants (8-12) that have sought or received accommodations since 2020. This qualitative study will use structured, anonymized interviews to collect information.

The researchers are seeking some optional demographic information in order to support compositional diversity among the participants.

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IRB: 23.263: University of Wisconsin-Milwaukee

Appendix B
Call for Participation Information and Demographic Survey

Name:
[short answer text]
Contact Information (Email):
[short answer text]
Do you currently work at the institution from which you sought an accommodation?
- Yes
- No
- In Progress
- Other:_____

How do you personally identify your race? (Optional)
[short answer text]
How do you personally identify your gender? (Optional)
[short answer text]
What is your age range? (Optional)
- 20-29
- 30-39
- 40-49
- 50-59
- 60-69
- 70+

Briefly describe your experience seeking an accommodation. (300 words max)

Appendix C
CFP Follow-Up Email to Potential Participants

RE: Accommodation in Public Academic Libraries Study

Dear Applicant,

Thank you for your willingness to be interviewed about accommodations and working in an academic library. We would love to interview you. We are hoping to conduct interviews between July 31st and September 1st. If you are still willing, please respond here and we will work with you to find a reasonable date and time.

Once again, thank you so much.

Best,
Dr. Abigail L. Phillips and Dustin Fife

IRB: 23.263: University of Wisconsin-Milwaukee

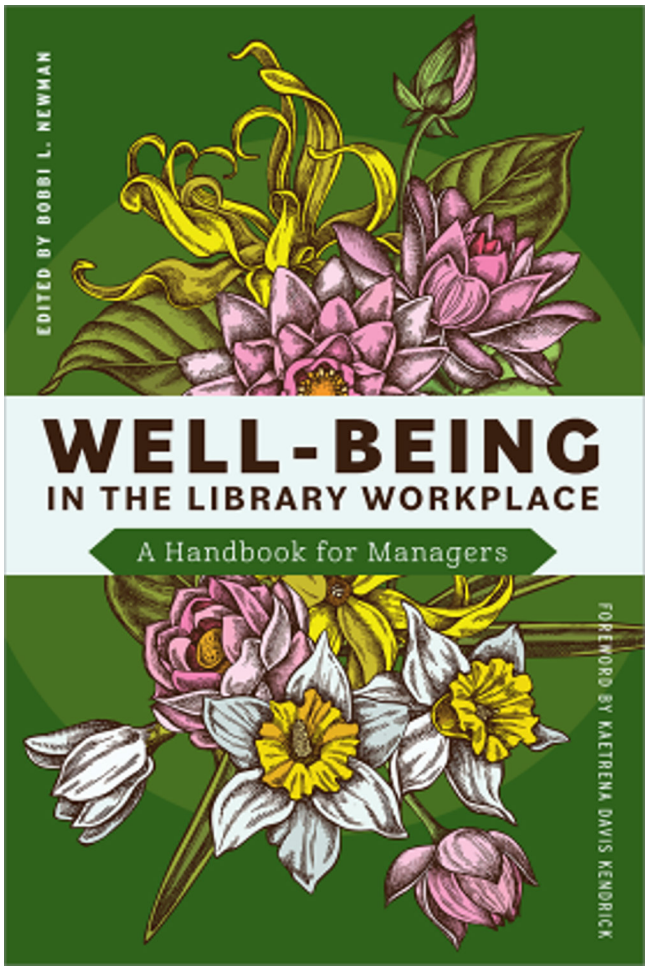
Appendix D
Semi-Structured Interview Questions:

1. Tell us about the types of libraries you have worked in.
2. Without having to reveal details, did you newly need an accommodation, or have you always been eligible and not sought it until recently?
3. When did you begin seeking an accommodation?
4. During the hiring/application process, were you able to discuss your need for an accommodation? Did you feel comfortable revealing that you needed an accommodation?
5. What offices or positions on your campus handle accommodations
6. What was your general experience when seeking an accommodation(s)?
7. Who was helpful on campus in your experience
8. Who was not helpful on campus in your experience
9. How did your supervisor(s) help or hinder you in your accommodation seeking process?
10. How did your colleagues help or hinder you in your accommodation seeking process?
11. What would you tell someone else seeking accommodations in a higher-education workplace?
12. Do you consider the process of seeking an accommodation to have been successful/unsuccessful? Why?
13. What is your rank/status/employee structure (faculty, staff, etc.) and how do you think that influenced your experience?
14. Was there anything specific about working in the library that shaped your experience?
15. Is there anything else you would like to tell us?

Well-Being in the Library Workplace: A Handbook for Managers, Bobbi L. Newman (ed.), ALA Editions, 2025. 257 pp. Softcover, $59.99. 9798892552943.

March 2020 marked the onset of the global COVID-19 outbreak, a pandemic unprecedented in scale since the Spanish Influenza of 1918. Beyond the substantial loss of life, the pandemic disrupted global supply chains, led to widespread shortages, and forced the U.S. to adapt rapidly to a "new normal." Many individuals transitioned to remote work and online education, often with little preparation. The sudden need to learn new technologies and secure appropriate hardware added significant stress to daily life. Although the country continues to grapple with the aftermath of the pandemic, it has become increasingly evident that it placed profound mental strain on individuals and organizations alike. Burnout had an acute effect on library staff, causing the "Great Resignation" that resulted in workers leaving their perceived thankless jobs for new ones in the hopes of being valued and appreciated.

Bobbi L. Newman's *Well-Being in the Library Workplace: A Handbook for Managers* is a timely and significant contribution to the field of library and information science (LIS) addressing, in part, the fallout from the pandemic. Newman is a certified wellness practitioner and a recognized expert in workplace well-being, who has served on numerous national and local committees. A scan of the library literature provides numerous articles that address staff morale and well-being; however, Newman offers a more comprehensive and practice-oriented examination of workplace well-being in this book, bringing together 18 chapters written by librarians and library professionals. The chapters explore topics such as foundational wellness, navigating difficult conversations, communication, recognition and appreciation, professional development, social connection, stress, and burnout. The structure of the book enables managers to learn from authors' personal experiences while also drawing on relevant LIS literature, creating a balance between reflective practice and scholarly grounding.



An analysis of the chapters reveals several recurring themes, including vocational awe, work-life balance, effective communication, staff wellness, trust, and recognition. In their chapter, Sheppard and Pierce-Farrier examine how the pandemic intensified burnout and dissatisfaction among library staff. Many employees questioned their roles

within their organizations and felt uncertain about how their personal goals aligned with institutional priorities. The pandemic further exposed longstanding organizational challenges, leaving staff feeling underappreciated and inadequately acknowledged for their efforts during an exceptionally difficult period. As a result, many sought opportunities elsewhere.

Sheppard and Pierce-Farrier remind readers that library staff spend a significant portion of their lives in the workplace, often away from family and loved ones. Consequently, managers bear responsibility for fostering safe and supportive work environments in which staff feel heard, valued, and trusted. Meaningful recognition does not require substantial financial investment; simple gestures, such as acknowledging a job well done or recognizing exceptional service to patrons, can have a lasting impact. Appreciation may take place during staff meetings, through written commendations, or by acknowledging significant milestones in employees' lives, such as years of service. Such actions can contribute meaningfully to staff morale and retention.

The concept of "vocational awe" (p. 5), another prominent theme throughout the book, highlights the strong sense of purpose many library workers feel toward their profession. While this dedication can be positive, it often leads to unrealistic expectations, encouraging employees to neglect their own well-being and mental health. Staff may work extended hours or consistently exceed expectations without receiving corresponding recognition or support. In their chapter, Turner and Cromartie discuss strategies to counter this tendency, emphasizing the importance of setting boundaries and resisting the pressure to be "always on" (p. 1). They further stress the need for compassionate leadership, particularly for staff from underrepresented communities, who often shoulder additional invisible labor. These employees are frequently asked to serve on committees and represent diverse perspectives, both within and beyond their organizations, adding to their workload without formal acknowledgment.

Turner and Cromartie's contribution align closely with Darby's chapter, "Not an Emergency Room." Darby reframes librarianship as a service profession that, while inherent, is often burdened by unrealistic public expectations. Library staff routinely navigate challenging interactions with patrons, including demands that fall outside policy boundaries or professional scope. The persistent perception of librarians as omniscient knowledge keepers can lead staff to feel as though they have failed when they are unable to fully satisfy a request. Darby effectively reminds readers that libraries are not emergency rooms; when an answer is unavailable, no one is harmed. Recognizing this distinction allows staff to release feelings of guilt and reduce the emotional toll associated with perceived failure. For a profession rooted in helping others, learning to accept limitations is crucial for sustaining long-term well-being.

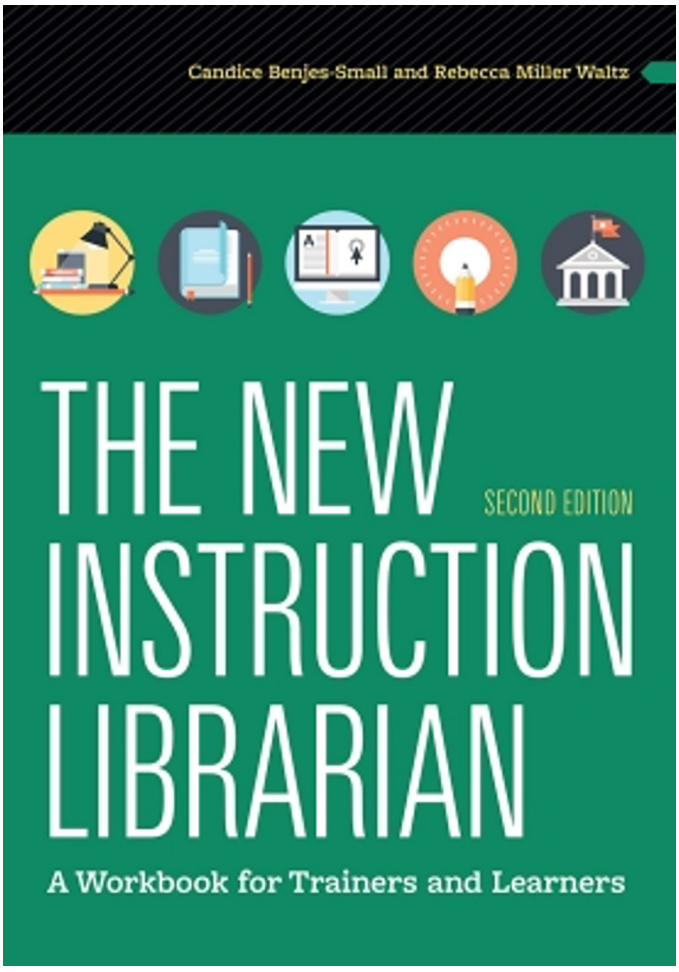
Newman's edited work highlights the need for organizations to look within themselves to ensure that staff have a good work-life balance and to not place any undue pressures to perform duties based on an exaggerated belief in providing idealistic service to patrons. While all library staff will do their best to ensure patrons get the answers they want, managers must remember to model a culture of openness and trust so that staff can come to them with new ideas that may improve service. Keeping the line of communication open between managers and staff will help align one another with the organizational goals. Libraries in turn are responsible for ensuring that employees are provided with development opportunities that will help them learn and grow. Making this investment will make staff feel valued and heard.

Organizations and managers should also remember to acknowledge and recognize staff accomplishments, helping them feel valued for the work they do. All the chapters in this book provide help, guidance, and suggestions for ways to improve staff morale, well-being, and mental health. Newman's work is a valuable guide and tool for all levels of librarians and managers in public or academic libraries. It reminds us that a happy, appreciated staff will provide more output, which benefits our patrons. — *Christina Tooulias-Santolin, User Services Librarian, University of Toronto*

The New Instruction Librarian: A Workbook for Trainers and Learners, 2nd Edition, Candice Benjes-Small and Rebecca Miller Waltz, ALA Editions, 2025. 256 pp. Softcover, $69.99. 9798892553254.

Instruction, as seen in existing literature, is a vast topic covered in disciplines beyond librarianship. New academic librarians are often expected to teach in the first few months of their job, or even earlier if the hiring date is close to the beginning of the semester. Candice Benjes-Small and Rebecca Miller Waltz's second edition of their book, *The New Instruction Librarian: A Workbook for Trainers and Learner*, is a great resource for students transitioning from library school into the professional space, new librarians, and colleagues and managers supporting them or any library professional who wants to learn more about the inner workings of instruction in a college or university library for the first time.

Divided into four sections, the book uses a metaphor for librarians wearing different hats throughout the volume. Each chapter represents a different hat (a different responsibility) of a teaching librarian, along with the tasks and responsibilities that come with that hat. The strength of the book comes from its ability to connect to the reader in various formats. With each chapter organized in a succinct manner—including hands-on activities, practice scenarios, expert opinions, and a curated list of manageable resources for each chapter—the reader is not overwhelmed and can sift through the material with ease. The diverse types of examples that the book presents allow for reinforcement of information and builds upon both existing knowledge of the reader and information from the previous chapters. The chronology of the book familiarizes the reader with instruction terminology and definitions while introducing the audience to the premise of what instructional librarians do. The conversation dives further to explore the potential of instruction primarily in one-shot sessions and workshops geared toward students of all disciplines and stages of their academic careers. Authors also provide instructions on how to read the book, which suggests ways to apply concepts in the workplace and classroom.



Part 1 covers the basic questions that incoming librarians might have when it comes to teaching. Dilemmas over balancing content, theory, and practical skills in learning the material challenge the reader to think back to when they were a student

and to approach instruction from a student's perspective. In particular, the personal anecdotes from the authors who are now in leadership or more senior positions allow the reader to take a glimpse into their successful transitions from student to instructor, including the obstacles and challenges that they faced and overcame.

Part 2, the largest part of the book, spans from Chapter 3 to Chapter 11. Benjes-Small and Waltz describe the various hats librarians wear as colleagues, teachers, coordinators, project managers, learners, and beyond in order to cover the various tasks and teaching environments to which a new academic librarian must acclimatize. The orientation of the role in a particular organizational structure opens further conversations on the limits and boundaries that a new academic librarian should be aware of before creating or initiating new relationships with the campus community. Chapter 9, describing project management, draws on Nisha Mody's 2018 post from ACRLog touching on the importance of thinking outside library science, learning from peers of all disciplines, and capturing sources beyond academic articles and books (p. 149).

Parts 3 and 4 end the book with a change of perspective in instruction, providing observations of the new librarian as instructor, as well as observing other experienced instructors. The detailed guidelines on how to request to shadow a teaching session, how to act during one, and how to follow-up after paints a picture of how a successful transition from observing to eventually teaching alone could flow. Part 4 is an appendix of sample plans, scripts, assignments, and forms for new librarians to utilize when they are first developing presentations or want to learn from examples. These practical materials bridge the gap between early-career academic librarians and more senior librarians in the organization by having these materials ready to use. The concluding message of the book is particularly resonant. It is a reminder for librarians to continue to learn with a critical eye and to be open to new ideas, such as slow librarianship and identity economics as the first few years of instruction can set the tone for the career of a new academic librarian (p. 215).

A final notable attribute of the book is its commitment to referencing works of racialized scholars, librarians, and organizations. Starting with Swanson and Gonzalez-Smith's "Lived Experiences of Librarians of Color" (2018), the authors suggest the Joint Council of Librarians of Color as a potential learning forum. Mention of the peer network "We Here," also features efforts to bring attention to specific groups and communities, expanding the discussion to include diversity (p. 13, 51, 180). Chapter 11 highlights the importance of these communities and mentorship programs as potential roads for fruitful friendships in the profession and beyond. Overall, in a sea of literature of library instruction, and instruction in general, this book serves as a guidepost for new librarians starting their careers. Building off the previous edition, updates in both the literature and instructional anecdotes have strengthened the content and the core of this volume. — *Lisa Shin, Research Librarian, University of Ottawa*

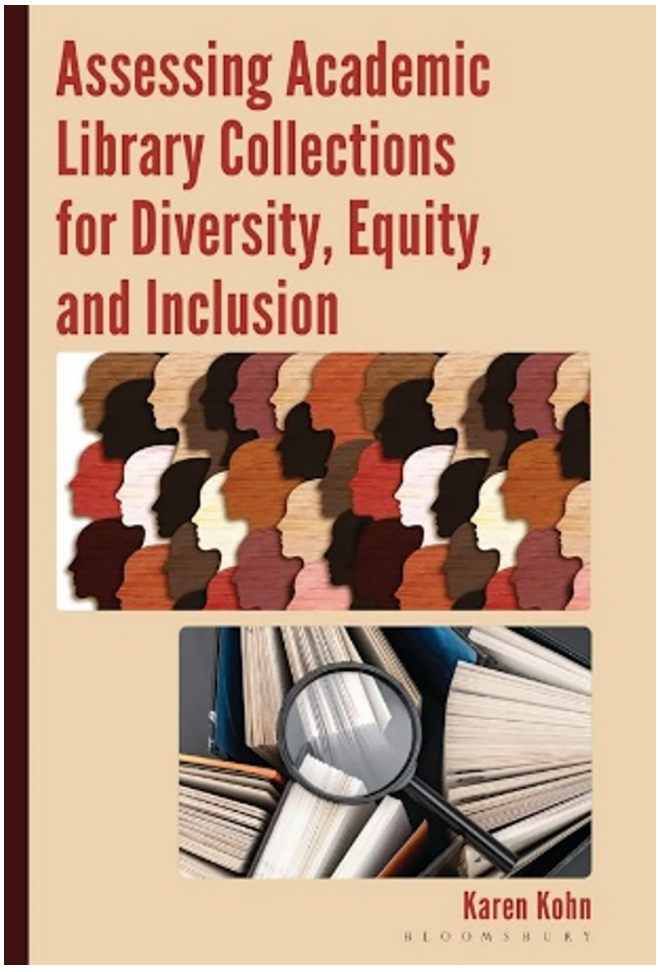
References

Mody, N. (2018). *Librarianship and project management skills.* ACRLog. https://acrlog.org/2018/02/22/librarianship-and-project-management-skills/

Swanson, J., Tanaka, A., & Gonzalez-Smith, I. (2018). Lived experience of academic librarians of color. *College & Research Libraries, 79*(7), 876. doi:https://doi.org/10.5860/crl.79.7.876

Assessing Academic Library Collections for Diversity, Equity, and Inclusion, Karen Kohn, Bloomsbury, 2025. 208 pp. Softcover, $36.00. 9781538195741.

Academic librarians with collection development responsibilities often look for ways to diversify their collections, either when acquiring new items in a specific subject area or assessing their existing collection to find gaps. In *Assessing Academic Library Collections for Diversity, Equity, and Inclusion,* Karen Kohn provides a very practical, and informative approach to shift equity, diversity, and inclusion (EDI) work in libraries from intent to measurable assessment, with a focus on diversifying collection development. Prior to starting a large collection project, Kohn suggests considering "how you will define diversity, which parts of the collection you will assess, and what the goals of your assessment are" (p. 9). These are important questions to ask, and this book guides readers through the process by using Kohn's three lenses framework, which explores subject matter, authorship, and institutional efforts in collection development. Kohn also provides several collection assessment methods, which include list checking, metadata searching, and diversity coding, explaining how to approach each. Furthermore, Kohn includes several case studies of libraries that have used these approaches and shares insight on how to apply them in other academic libraries. This book is suitable for academic librarians who would like to learn more about the different approaches to diversify their own collections.



According to Kohn, each librarian's motivation to build a diverse collection can influence the method used to evaluate it. Some rationales shared in the book includes helping White, able-bodied, non-immigrant readers learn about people different from themselves, while others emphasize ensuring that readers from a wide range of races, orientations, and abilities can see their own identities reflected in the collection (p. 4). In other words, the librarian should themselves decide whether the goal of the project is to educate a dominant group of learners, or is it to support marginalized learners' sense of belonging? Both goals are important, and the approach taken depends on the librarian's intent and understanding of why diversifying a collection is necessary before selecting an appropriate approach to the project.

The author does an excellent job steering readers in defining the scope of an EDI assessment by clarifying what is meant by "diversity" and encouraging reflection on

the motivation behind evaluating a collection. Before introducing specific methods, Kohn emphasizes the importance of approaching the project through one of the three lenses: subject matter, author identities, and/or institutional efforts. Viewing a collection through the subject matter lens is helpful when considering how well the library supports courses focused on specific academic disciplines or when aiming to increase visibility of diverse topics, which is often more apparent to patrons than author identities (p. 25). Conversely, assessing a collection through author identities matters as it allows readers to see themselves being represented in the collection as they encounter perspectives shaped by lived experience. The third lens, institutional efforts, allows libraries to reflect on all of their activities that affect user experience of the collection, such as "how your library selects books, purchases, catalogs, and creates displays" (p. 27), which could potentially influence the culture of the library and impact overarching institutional goal-setting.

Kohn's three lenses help readers breakdown a problem that many librarians face when deciding on an approach for collection development projects. Kohn states that "multiple methods can be used for assessing subject matter, though only one method is appropriate for investigating author identities. There is no specific method associated with assessing organizational efforts, though there are some common approaches" (p. 28), which shows that each method provides flexibility. This is one of the main strengths of this book as it not only clarifies how to approach EDI collection assessments, but it also offers a structured and adaptable way for librarians to align their methods with their goals in collection assessments.

The remaining chapters of the book are dedicated to each of the methods, including list-checking, metadata searching, and diversity coding. Each of these chapters presents explanations on the processes, strengths, and limitations of each method. Additionally, each of these chapters is paired with case studies from academic libraries to help readers understand how EDI assessments have been implemented in other institutions. Each case study was written by a librarian who led a project at their institution, offering an overview of the project's background, planning process, chosen method, results, and lessons learned. These chapters can help readers generate ideas for their own collection assessment projects, learn from challenges encountered in the examples, and access recommended resources highlighted in the case studies.

Across these methods of assessment, Kohn draws attention to the ethical and practical challenges that exist in EDI assessments. Kohn notes that questions about how to define and measure identity, how to avoid misrepresentation, and how to respect individuals' privacy can complicate some collections projects. For example, the difficulty in accurately identifying authors' racial or gender identities, especially when identities have not been publicly disclosed, illustrates some of the limitations for this approach. Furthermore, there are some practical constraints as well—such as time, staffing, and access to tools—that can influence the feasibility of the project in each institution. Methods like diversity coding may be theoretically ideal but difficult to sustain in practice. Sharing some of these challenges illustrates that EDI assessment requires ongoing reflection, critical judgement, and institutional support and cannot simply be a one-time project. These complicated quandaries help strengthen the book's credibility, even though answers to how libraries can overcome some of these barriers are not always provided.

Overall, *Assessing Academic Library Collections for Diversity, Equity, and Inclusion* represents a resource that many librarians are seeking to best apply equity, diversity, and inclusion in

their collection practices. Each chapter in this resource provides literature to support specific approaches along with practical examples illustrated in the case studies to help librarians visualize how these methods could be used in their own institution. The book is a solid resource and a practical guide that could help many librarians start their journey applying EDI in their collection development strategies. — *Victoria Ho, Science Librarian, University of Toronto Mississauga*