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Editorial

Looking for a Sign

So, this November editorial marks the end (or not even the end) of another year of chaos and loss, unrelenting change, and ambiguity.

It has been a struggle, in some ways, more than the previous year. We have had to deal with the pandemic numbers climbing, the indecisive leadership, the loss of colleagues and family members, the loss of jobs, more work and more barriers to getting that work done, stress and incivility, and on and on. Colleagues have experienced fear for their children. There are children (and adults) who are afraid to go out in public, afraid they may contract the virus or pass it on with disastrous results. Colleagues are experiencing combative students in the classroom who call them out for wearing a mask. Through it all is the uncertainty—of the future, the economy, having a job (still! Not just due to COVID but to changes in leadership and to political maneuvering).

It sometimes gets to be too much.

Then I saw a sign.

Literally.

I guess I was looking for one (although, really, I was looking for caffeine). It seems like we all feel this sentiment—in some cases literally, as libraries change hours or put out apology signs when 20% of their staff is out. As low-key and trivial as this sign might seem, it really came at the most opportune time, reminding me that we are not alone, that everyone is experiencing these hard times and that this is the time to be patient, flexible, and kind—with others and with ourselves.

Be Patient and Be Flexible

This has been the litany for the past 2 years. It is advice I give my students and staff as we go into each new term and the anxiety of patrons ramps up. It takes a lot of energy to maneuver through this environment—seeming to move from one crisis to another and provide information, assistance (solace, a refuge, a sounding board, etc.) for everyone who needs it.

Be Good to Yourself

I may have mentioned previously that, whenever I fly, there is a useful reality check that is not actually what was intended. The very mundane (and often annoying) spiel that the flight attendant does (and that almost everyone ignores) is a bit of a wake-up call that can apply to so many situations—and certainly to the life we are currently experiencing: "In the event of an emergency, oxygen masks will descend from the ceiling. Put your own mask on first and then assist anyone else." It could be argued (and has certainly prompted lots of conflict) that the pandemic is an emergency—and in spite of the fact that everyone is suffering and needs help in some way, it is important to take care of yourself first.

It is impossible to take care of your kids, partner, parents, coworkers, patrons, or community if you don't have the peace of mind and the energy to sustain yourself. Librarians, as a profession, are particularly at risk—so much of what drew us (me) to the profession was to serve and help. Several recent articles have addressed this issue, even in terms of the pandemic—vocational awe is real and, in some situations, we do ourselves a great disservice personally and professionally. It is also reinforced by our leadership (who may recognize it as a motivating factor, even when it may be detrimental to our wellbeing). For instance, when a library director tries to get people fired up by acknowledging that (and I paraphrase here), "yes, it's been tough and if you need to talk to someone or get help, there are people for that, but we should do what we do best and focus on work," they aren't exactly looking out for your best interests. I do realize that not all library administrators use this cardboard motivation to trade on their employees' desire to help and be of service to the detriment of their mental health (just as not all states have a ban on mask and vaccine mandates), but this is but an example of what some are dealing with.

Vocational awe is not the only factor for academic librarians—academic guilt and worklife imbalance are ever present—soaking up any peace of mind and any time for self-reflection and self-rejuvenation. But, thinking back to the "in case of emergency, take care of yourself first" directive—consider how to simplify your life (at work or at home—or both), how to remove some of the stress and anxiety, and how to find a place (or head space) that brings peace.

Be Focused on What is Important (to You)

This is easier to say than to do—so many of us do not have the agency and have too many commitments to really feel like we can let certain things go and focus on what is important to us. Yes, there are tradeoffs and consequences—and sometimes the decisions are hard and sometimes that may mean a lot of change and possibly giving something up. That is a decision that everyone needs to consider for their own situation.

Yes, we are all less productive than we were—it is easy to take responsibility (i.e., blame) for that—but the reality is that there are more processes, more barriers, more considerations in play than there once were. We are doing the functions we had when things were "normal" (pre-COVID), we are "pivoting" (to use a buzzword) to address the ever-present changes and ever-changing demands in higher education, and we are doing dual processing (e.g., teaching in person and online synchronously) to try and meet every eventuality. Even doing the same job comes with additional systems and approvals to navigate—and small deviations seem to prompt memos in triplicate up the reporting line.

A recent column in the *Chronicle of Higher Education* (which I seem to read habitually these days as it acknowledges that academe is insane, which is weirdly reassuring to me right now) struck a chord. A long-time contributor gave a candid and pragmatic narrative about why he has chosen to leave the academy. His is a thoughtful approach, taking into account both the current climate and the shift in his professional goals. It echoes a lot of my own thoughts—disconcertingly so in some aspects (re: social media, academic freedom, and growing stale).

So, I admit it—I have also been looking at other (not just library) job postings, articles and blogs on burnout and librarians changing careers. I have, like so many others, been adding up my days until retirement and trying to figure out how long I can hang in there (and whether I should). I am disillusioned with the leadership and lately frustrated and annoyed with those who seem to have taken my efforts and commitment for granted (thereby diminishing that commitment). I share this not to complain (or not solely to complain, anyway) but also because I know others have these feelings which may make them feel alone and less than. It has been hard to be positive in the face of it all—but the reminder that we are all in the same boat and there are things that we can do to lessen people's (and our own) load is helpful to get focused on engaging constructively.

That said, it's okay to say no and be upfront about your level of commitment and your capacity. This is something that we are loathe to do (see above about vocational awe and academic guilt)—especially as we fear it may impact how we are evaluated or any future professional opportunities. And it may. But an honest answer is a gift—and knowing where you stand in an organization is valuable information as well.

It's also okay to ask for help—which none of us wants to do, as it too seems to send a signal that we can't do our jobs. However, organizations will take as much of your time, effort, commitment as you will give them. Maintaining a worklife balance is not on the organization; it is on you, the individual. Deciding what is important and making tradeoffs is part of it.

Be Kind and Be Thankful

It is funny how many times I hear (or say) "Let me know if I can help"—a nice but noncommittal way to express support. The pandemic has brought home to me how unhelpful that actually is (although it does still creep into my emails) so I have also shifted my thinking to offer more concrete help that fits the situation: "can I take on some of the duties of committee secretary to lighten your load", "can I help you create the libguide for this class", "can I cover for you while you are a conference", etc. They are small tasks—but I have come to realize that every effort helps and the sentiment is more meaningful when it is backed with something more tangible. Even something as small as that sign can lift someone up (as it I did for me) but even the thought, when personal, counts.

What also counts is thanks. I am not much for holidays—but I always like that there is a time to stop and reflect and gives thanks (and I completely acknowledge that the actual commemoration of Thanksgiving is fraught with controversy and contradiction). However, the reminder to be thankful, to not take anyone or any kindness for granted and to give back, is valuable in itself. This is especially important for a journal whose existence is dependent on authors who devote their time to research and writing and to the reviewers who devote their efforts and expertise to assessing and providing feedback for those papers as well as all the others.

There are so many who have given of their time and attention- even in the midst of this pandemic when everything seems to take so much more effort. At the risk of sounding like

an academy award winner, there are a number of people who have made the journal successful, even throughout the pandemic, political turmoil, economic downturns (with job loss and furloughs) and everything else:

The editorial team has been there through thick and thin:

Ellen Filgo as social media editor, managing the dialogues that the journal prompts and employing technology to give voice to the journal;

Emily Drabinksi who has expanded the content and participants in the book review to be more inclusive and strategic;

Stephanie Davis-Kahl and Eric Johnson, who are the unsung editorial assistants, helping manage the volume of submissions in a timely way.

Editor-designate Kristen Totleben has jumped right in and will bring fortitude and a fresh perspective to the journal.

The ACRL and production staff without whom there would be nothing to read: Dawn, Tim and David are superlative and keep the journal (and me) on track! They are the one constant in an era of change.

The editorial has been the best I have worked with, representing the journal and identifying opportunities for engagement, helping shape the direction with new policies and practices and providing constructive feedback:

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The book reviewers, who under Emily Drabinski's direction, are transforming the scope of those publications relevant and significant to the profession and bringing broader perspectives:

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We also want to acknowledge the authors who work hard to stay current and add to scholarship and practice—and who have been so patient as various issues have made the review process a little more protracted lately. We really appreciate all their efforts to provide rigorous, well-written papers to share with their peers—contributing their experience and being open to feedback.

And, finally, to our readers and the scholars and practitioners in the profession more broadly, who also help shape the direction of the journal and are so willing to give feedback and contribute to the dialogue. My hope that is that journal does, in at least a small way, contribute to your professional life and your work.

Be Well

What Information Are We Providing to Users with Disabilities? An Analysis of ARL Libraries' Accessibility Webpages

Amelia Brunskill, Catherine Lantz, and Kavita Mundle

An analysis of ARL libraries' webpages of accessibility information revealed wide variation in terms of these pages' findability, length, and coverage. Overall, most of the content elements that were searched for, based on previous webpage studies and user-centered research, were not present on the majority of the webpages. There is clearly much room to expand the accessibility information most ARL libraries provide, which raises questions about whether this is primarily an issue of documentation or reflects true gaps in available resources, services, and facilities. A guide for auditing these webpages was developed to help libraries assess potential gaps in these webpages.

Introduction

Library websites are the primary mechanism for the dissemination of ARL libraries' accessibility information,[1] and most ARL libraries have dedicated pages of information specifically for this purpose.[2] These pages, which will be referred to as "accessibility webpages," can document information on library resources, services, and facilities that could be relevant to a wide array of users with disabilities.

Unfortunately, while libraries' accessibility webpages have the potential to be highly useful to both users with disabilities and those assisting them, past studies of academic library accessibility pages have found common deficits among these pages in terms of both their findability and their content.[3] These previous studies also do not appear to have involved any consultation with users with disabilities, which prompted Amelia Brunskill, one of this study's authors, to conduct a series of interviews with university students with disabilities to learn more about their needs and preferences for these pages.[4] The participants' responses provided an expanded view into what information accessibility pages could contain to more fully support students with disabilities, including those with invisible disabilities, such as attention deficit hyperactivity disorder (ADHD) and depression, which are some of the more prevalent disabilities within the university student population.[5]

Armed with insights from that study, and a hope that ARL libraries may have expanded their accessibility webpages in recent years, this study located and analyzed ARL libraries'

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accessibility webpages, examining them for specific elements of interest that emerged in previous studies pertaining to the accessibility pages' location, language, structure, and content.

Background

Discussions around accessibility in libraries have often focused on issues pertaining to legal compliance. As such, it is important to note that, while both the American Disabilities Act (ADA)[6] and the Rehabilitation Act of 1973[7] focus on users with disabilities and have compliance implications for libraries, neither stipulate what, if any, documentation on compliance efforts should be provided to library users. Similarly, while the Web Content Accessibility Guidelines (WCAG)[8] address how to make web content accessible to people with disabilities, they do not provide guidance on what informational content should be provided to assist these users. In summary, a library could have a physical building, resources, and services that address ADA and Rehabilitation Act concerns without providing relevant accessibility information on their website, and a library's accessibility webpage could meet WCAG guidelines without providing any usable information about a library to a user with disabilities. Therefore, assessment of a library's accessibility page should not be primarily viewed in terms of legal compliance, but in terms of the degree to which it allows users with disabilities to learn about a library's resources and services and to understand what supports or barriers they would encounter within the physical library environment.

Part of the potential great value of an accessibility webpage is the opportunity it presents for a library to connect with users with disabilities without requiring these users to provide any information on their disability status. This is important since many university students with disabilities often do not wish to disclose their disabilities to others unless strictly necessary,[9] and they may either never register with their campus disability office or delay doing so until prompted to by an academic crisis.[10]

The absence of relevant documentation about library policies pertaining to users with disabilities can actually cause students to feel guilty about asking for needed help and concerned that such requests might be met with hostility.[11] Information omitted from the library's webpage may, unfortunately, prove difficult to obtain via other means, as JJ Pionke (2017) noted: "patrons felt that there were many times when they asked for help but that they didn't get it, it was too hard to get help, or the library employee wasn't patient enough."[12]

While the primary intended audience for accessibility pages should be users with disabilities, an accessibility page can also serve as a tool for library workers assisting these users. Library workers may benefit significantly from additional guidance in this area; in site visits to eight academic libraries, Sue Samson (2011) found only 37.5 percent of the libraries determined that their library staff had all the information they needed to serve individuals with disabilities.[13] Two more recent studies continued to find gaps in librarian and library staff knowledge in this area: Joanne Oud (2019) found that librarians with disabilities reported a lack of awareness about disability issues among their colleagues,[14] and JJ Pionke (2020) noted that many library workers responded to accessibility questions with "frustration and fear" and that almost 70 percent of librarians interviewed were very interested in more training in this area.[15] Naturally, accessibility webpages should supplement rather than substitute for additional training, but they can serve as a helpful refresher on existing policies, procedure, and options, as well as a reference for information about the physical building.

In 2018, ARL member libraries were surveyed about their support of people with disabilities and the responses from 67 institutions, 54 percent of those surveyed, were published in SPEC kit 358: *Accessibility and Universal Design*.[16] All respondents indicated that at least one of their service desks, classrooms, restrooms, and drinking fountains were accessible to users with disabilities, and the majority indicated their library staff would provide assistance to users with disabilities with a wide variety of tasks and that their libraries had accessible/height-adjustable workstations, assistive technology, scanners with OCR capabilities, speakers, microphones, and magnifiers or CTVs. While online documentation of this information was not asked about in the survey, 94 percent of the respondents indicated the library website was a primary way of publicizing accessibility information, and the SPEC kit also highlighted select accessibility webpages.

Clearly, accessibility webpages have the potential to serve an important role in providing information that both users with disabilities and library staff can benefit from in a centralized location that can be privately accessed and consulted without requiring disclosure. ARL libraries also have a considerable amount of information about their accessibility offerings that could potentially be provided on these pages. Reviewing the current documentation on ARL libraries' accessibility webpages can provide insights into whether libraries' existing accessibility webpages are likely supporting or disappointing the users who locate them.

Literature Review

The earliest study located that investigated academic libraries' accessibility pages was conducted by Rebecca Power and Chris LeBeau (2009).[17] This study, which referred to these pages as disability services pages, focused on the needs of users with visual disabilities and indicated that the five essential components of these pages were contacts, services, building access, assistive technology, and database accessibility. Mary Cassner, Charlene Maxey-Harris, and Toni Anaya (2011) reviewed ARL library accessibility webpages, discussing the located content of these pages under the headings of general features, services, staffing, facilities, and assistive technology.[18] Stephanie Graves and Elizabeth German (2018) had a more narrow focus than the prior two studies, looking solely at whether these pages provided information on library instruction content, including the physical and technical accessibility of library classrooms.[19] K.T.L. Vaughan and Stefanie Warlick (2020) went broader again, reviewing accessibility webpages for the presences of 12 specific content types: statement, campus contact, library contact, AT lab, book/article retrieval, building information, computers and equipment, research help, study rooms, circulation help, resource inks, and video captioning.[20]

All four studies found that the presence of information within the defined categories was limited. While more than half the pages found by Cassner et al. included information on communication, retrieving materials, parking, structural modifications, and reference help, fewer than half included information about elevators, restrooms, branch library accessibility, proxy borrowing, or emergency procedures. Power and LeBeau found that some accessibility pages contained as little as a single sentence, and while most pages they studied mentioned assistive technology, they did not always specify what software or hardware was available, and many libraries did not include information about bathrooms, fountains, stacks, classrooms, or study areas. Roughly a decade later, Graves and German found that few accessibility pages mentioned library instructions programs and services, and Vaughan and Warlick found fewer than half of the pages studied included information on seven of their 12 content

types of interest: information on the building, computers and equipment, research help, study rooms, circulation help, resources links or video captioning. Vaughan and Warlick also found, unlike the other three studies, that the majority of the webpages they reviewed, which were 40 four-year academic libraries in Virginia, did not contain an accessibility webpage at all.[21]

As discussed previously, there was no indication that these studies involved consultation with users with disabilities themselves; unfortunately, there is often a lack of involvement of users with disabilities in library studies pertaining to accessibility.[22] However, some library studies have consulted with these users more broadly on library experiences, and some issues and priorities include inaccessibility of facilities within libraries and technology issues;[23] empowerment, communication, signage, privacy, and marketing;[24] and a desire for online environments to be inclusive that allow them to make informed, personalized choices.[25] Usability studies of library webpages with users with visual impairments have also found that there can be a steep learning curve to using library websites and considerable barriers that can lead to some students being unable to successfully navigate the site.[26] It is also worth noting that, while the technical accessibility of library websites has been frequently studied, sometimes involving users with vision and print disabilities, accessibility errors continue to be commonly found.[27] This further increases the need for an accessibility webpage to provide useful information in one location rather than navigating throughout the site to search for different pieces of needed information.

When Brunskill (2020) interviewed 12 students with disabilities about their needs and preferences for libraries' accessibility webpages, many participants were not confident such a page would even exist.[28] When presented with four potential dropdown menu options under which accessibility webpages were commonly located in a small sample of ARL libraries' homepages, the one most commonly selected first was "Services" but multiple participants expressed uncertainty and mentioned that the link should instead be a top-level item. In terms of the desired content elements for an accessibility webpage, a number of the participants discussed information about the interior and exterior environment of the library they'd need to assess whether they will be able to successfully get to and navigate within the library to find needed materials and an appropriate place to study. Participants also brought up content elements rarely or never reviewed in previous accessibility webpage studies, such as maps, quiet spaces, lighting, and details about the furniture other than the adjustability of tables. Several participants also described the potential importance of services like shelf pulling and proxy borrowing, but often in the context of assuming such services would not actually be available.

Interestingly, floor maps were one of the most commonly mentioned important library website elements in a 2019 survey of university students,[29] and Rachel M. McMullin and Kerry R. Walton (2019) discuss how students with ASD can find navigating the physical space of a library overwhelming and so early communication with them about available library spaces is important to ensure they don't end up avoiding the library entirely.[30] When Jaci Wilkinson and Kyle Breneman (2020) reviewed and analyzed the floor plans posted on 37 academic library websites, they found floor plans were included by all but one of these institutions.[31] However, while all floor plans included information about book stacks and restrooms, information on building entrances and parking was not consistently present, the majority did not include accurate representation of furniture or seating options, and none included information about natural lighting.

Overall, the literature indicates that it would be useful to revisit ARL libraries' accessibility webpages to see what information they are providing to users with disabilities, informed by feedback from these users.

Methods

Definition of an Accessibility Webpage

Accessibility webpages were defined as a page on the library website that focused specifically on information for users with disabilities addressing the library's resources, services, and/or facilities. For the purpose of this study, LibGuides were also included if a library used them instead of a webpage located within the larger university web architecture. For webpages with multiple tabs or subpages, all pages within it were included for analysis. Links within the page were also followed if they went to a subpage within the architecture of the page, or to a page that a reviewer determined that, while not technically falling under the same URL path, was still for content that was specifically oriented toward users with disabilities and was part of the same library domain. With the exception of maps, links to webpages outside the library were not followed.

Process for Identifying Accessibility Webpages

The authors reviewed the list of all ARL member libraries[32] and initially excluded only those libraries not associated with academic institutions, such as the Library of Congress and the Smithsonian Library. One additional library was ultimately excluded after it was found that its entire webpage was in French, leaving 115 ARL libraries as the subjects for this study. For these 115 libraries, two of the authors used the homepage link provided on the ARL member list as a starting point and searched each website for an accessibility webpage. Since dynamic web elements such as dropdown menus can create accessibility barriers for people who rely on keyboards or screen readers,[33] and make content less prominent even for sighted users, the authors started by looking for a top-level link, one that was immediately visible and not concealed within a dropdown menu, from the homepage to the accessibility page. If the researchers did not locate a link through first a visual scan and then a page search using control +f for "accessibility" and then "disab" to locate terms such as disabilities and disabled, any dropdown menus were reviewed. If no links were found within the dropdown menus, the researchers then used the library webpage's search function for "accessibility" and then "disability."

For each library, information was captured about the homepage URL, the name of the page as listed on the homepage, whether there was a direct link from the homepage, if applicable the name of the dropdown menu item it was located under, and the name and URL of the accessibility page.

Survey Instrument

A survey instrument was developed in Qualtrics for the three authors to identify relevant information from the located accessibility webpages. The broad categories and specific items for documentation were informed by the existing literature on both accessibility webpages and the library needs and preferences of users with disabilities. The instrument prompted authors to document specific information about the structure of the webpage, the presence of a welcoming/introductory statement, contact information, and the presence or absence of information within the following potential content areas: technology and specialized equip-

ment, facilities within the building, exterior facilities, maps, services, collections, and links to external resources. Response options for most items were yes, no, or unsure and also allowed for any relevant text from the webpage to be copied and pasted into the survey. An option was also included toward the end of the survey to allow authors to note attributes of the webpage that they found interesting or otherwise noteworthy but that were not specifically addressed elsewhere in the survey.

There were two rounds of testing of a random sample of identified webpages to assess the survey instrument and identify any clarifications that might need to be made to facilitate consistency among coding and to uncover any potential grey areas in terms of website structure or language. After these two rounds, in which all reviewers reviewed the selected webpages, the survey was finalized, all previous coding was deleted, and the webpages were divided among the three authors.

During the data analysis portion, the results were again divided, this time by content area. Each reviewer reviewed the data for their assigned section, evaluating the associated text for items labeled as "unclear." It was up to the individual reviewer to confirm the status as unclear or to instead mark them as "yes" or "no" responses instead. Some items were brought to the full group for discussion for a final decision.

Word Count Data

Gathering word count information was delegated to one author. The word count for each identified accessibility webpage was found by copying and pasting the relevant text into a word document that was saved into a central folder. Word count was gathered to provide an imperfect but often revealing view into how much space and content was dedicated to accessibility information.

Findings

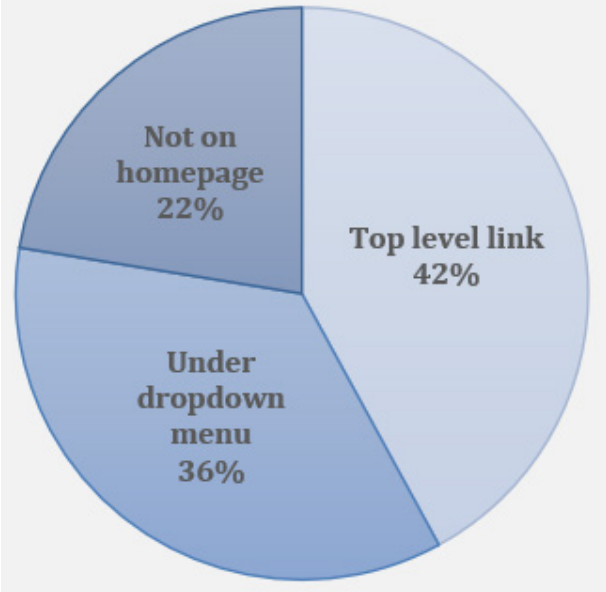
Page Existence and Prominence within the Library Webpage

The authors located accessibility webpages for 93 percent (107) of the 115 libraries identified as ARL libraries for academic institutions. Among the libraries with an accessibility webpage, the majority of the links were either concealed within a dropdown menu or not included on the homepage at all (see figure 1 for breakdown).

For those links found underneath a dropdown menu, the most common menu option they were found under was "Services," with 16 using that exact heading and five additional libraries using a heading that included that term, such as "My Services" or "Services and Help."

In terms of the language used for the link text itself, 28 libraries used the term "accessibil-

FIGURE 1
Accessibility Webpage Link Visibility on ARL Libraries' Homepages

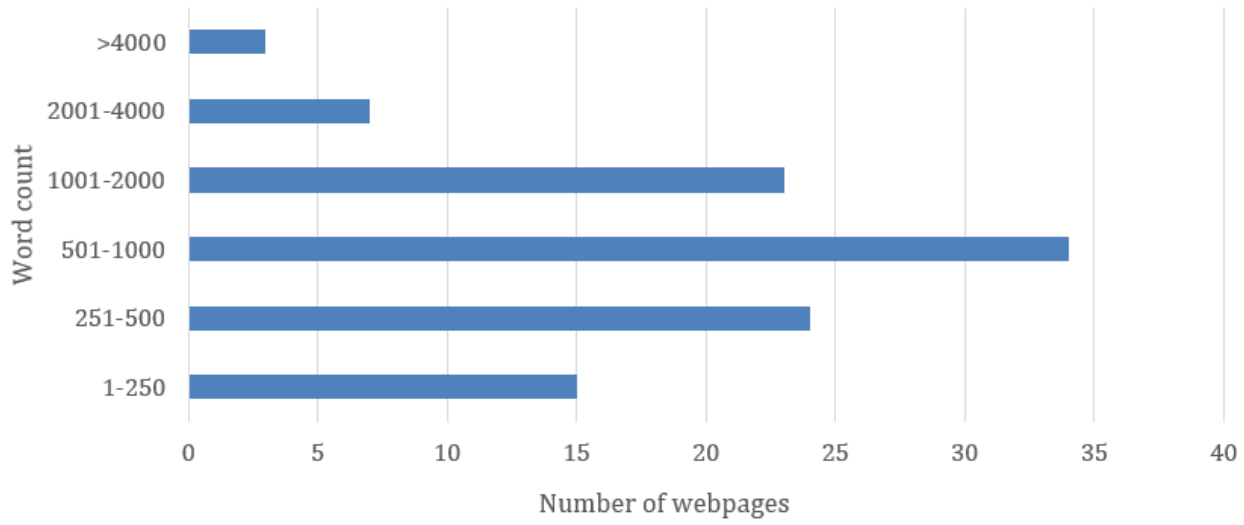


ity" within the link text, 14 used "disability," and 22 used "disabilities." For 22 libraries, the link to the accessibility webpage was simply "Accessibility," "Accessibility Services" was used for 13 libraries, and nine libraries used "Patrons/Persons with Disabilities." It is worth noting that the authors also encountered some "accessibility" links on library webpages that instead linked to universitywide messaging about accessibility. Sometimes this link was part of a static university footer, but there were also instances when it was mixed in with library-specific links.

Length and Structure

The accessibility webpages varied enormously in their length, ranging from a mere 48 words to 6,307 words. The average number of words was 959, and there were a handful of large outliers. The distribution is shown in figure 2.

FIGURE 2
Word Count Distribution across All (107) Accessibility Webpages



In terms of structure, the majority of the pages (68%, 73), consisted of a single page without tabs, while 25 percent (27) of the pages consisted of multiple pages or tabs. Seven pages were marked as unclear by the reviewer as the structure did not clearly fall into either a single page or multiple page construction.

Content

Overall, most webpages did not contain the majority of the content elements of interest. The five content elements that were included by the majority of the webpages were introductory language, information on entrances, information on book retrieval, a list of accessibility software, and a link to an external campus resource—typically the campus disability services office. The remaining elements were found in fewer than half of the pages, and fewer than 15 percent included information on quiet spaces, distraction-free spaces, lighting, ways to contact the library other than via email or phone, public/campus transportation options, service animals or emotional support animals, library instruction, or accommodations pertaining to interlibrary loan. Specific content elements are explored in further detail below.

Introductory Language

The majority (77.6%, 83) of pages included some kind of introductory language to explain the purpose of the page, but 16 percent (17) consisted only of welcoming language or a mission statement, with no additional content.

Contact Information

The vast majority of webpages did not include information on alternate methods of communication with the library beyond an email address or phone number. A few webpages included information on sign language interpreter options or options for users with hearing loss, such as a TTY (Text Telephone) option. Generic contact information, such as a link to an "Ask a librarian" service, or contacts for specific services were often provided. When a single communication point was offered, the most common option was to a named individual at the library. For six webpages, no contact information was located at all.

Language Indicating Limitations of Services to Specific Disabilities

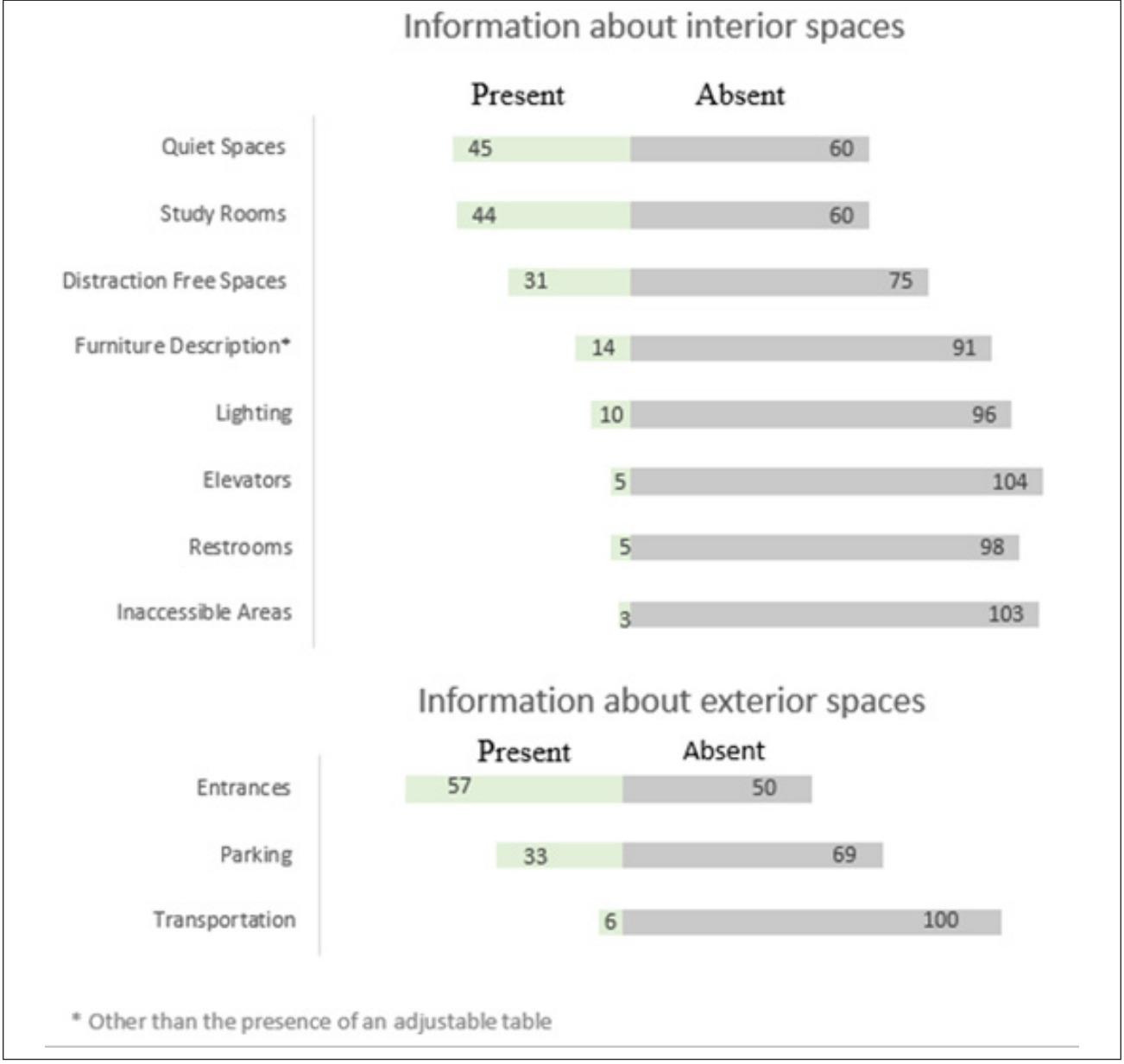
While the researchers found that the majority of webpages did not include language limiting services to a particular category of disability, some did contain such language. Often this was due to specific legal requirements, such as references to expanded access to HathiTrust being available for users with print disabilities, and also a reference to Canadian copyright provisions. However, there were also instances of limitations mentioned that were not based on legal constraints, such as only retrieving items from stacks for users who were in wheelchairs or using crutches, or only those with limited vision, or mobility-accessible formats being for users with visual and/or audio impairments, or a space being available for users with visual impairments or a learning disability. Some sites also separated out services by type of disability, and there were also cases where it was unclear if a category of disability was mentioned simply to be illustrative or if the service was limited to users with that category of disability.

Facilities

Overall, there was a notable lack of information about features of both interior and exterior facilities (see figure 3 for breakdown). Even the two most commonly documented pieces of information about interior facilities, the presence of accessible bathrooms and elevators, were mentioned on fewer than half of the webpages. The third most commonly mentioned item, study rooms, was still mentioned by fewer than a third of the pages. Few webpages discussed quiet space, distraction-free spaces, lighting, accessible furniture other than adjustable tables, service or emotional support animals, or emergency evacuation procedures. For exterior spaces, information on accessible entrances, including descriptions of ramps and automatic doors, was the only feature documented by a majority of the webpages (53%, 57).

Among those that did mention quiet spaces, the references ranged from a simple mention that they exist in different areas of the library to specific descriptions of where quiet spaces are located to instructions on how to reserve private quiet areas (study rooms). The libraries that did describe lighting mentioned where it was adjustable, antiglare, natural, or nonfluorescent. A handful of webpages linked to campus and regional transportation services including shuttles, buses and taxis with information, schedules, pickup locations, and accessibility features. One library included a note about how current construction impacted building access.

FIGURE 3
Number of Accessibility Webpages with Information about Internal/Exterior Spaces



Maps

Sixty-four percent (68) of webpages did not include any maps, whether directly integrated into the page or a link to a map outside the library website. For webpages that did include maps, the most popular option was to link to campus accessibility maps, followed by direct link to library maps. Only 4 percent (4) of webpages had maps integrated directly into the accessibility page. For the webpages that did include some type of map or map link, the accessibility information most commonly included was the location of an accessible entrance locations, which was found in 13 of the maps.

Research-oriented Services

Forty-two percent (45) of the webpages referred to research assistance being available, but only a handful of them provided information about help specific to users with disabilities,

such as booking a consultation in a room with assistive technology/equipment, a reduced distraction environment, or sighted assistance in navigating a webpage. A few pages referenced other assistance library staff could provide, including printing out handouts in large type for patrons with print-related disabilities and arranging for screening of films in which vocal narration/discussion will be required. Several pages referred to personal assistance that was available through campus Disability Services, including readers for materials that could not be made accessible, and volunteers/aids who could provide physical assistance with research work.

Ninety-three percent of the webpages (99) did not list any accommodations for information literacy instruction. Interestingly, while not specifically included as an initial data point, multiple libraries were found to include information on tours and orientations for the library, accommodations for library events, and training on assistive technology.

Collections-oriented Information and Services

The most commonly mentioned service was book paging/retrieval with 75 percent (80) of the webpages, and some providing specific information about the number of items and/or the timeline for retrieval. Only 30 webpages mentioned proxy borrowing, and only 11 discussed a book delivery option that would send physical items to a patron's home, office, or dorm. Eighty-six of the websites did not include any information on circulation flexibility that could be extended to users with disabilities, such as extended loan periods or circulation of typically noncirculating materials. Among the minority that did, extended loan for reserves materials was the most commonly mentioned option.

With respect to alternate format conversion, no language was found for 46 pages indicating that any such service was available. Additionally, it was sometimes unclear whether the service described on the webpage was distinct from typical document delivery or interlibrary loan services available to all users, and some simply mentioned that help with scanning materials could be provided, while others provided detailed guidance on how to request alternate formats.

Most webpages did not include any information about library materials with accessibility features, such as read-aloud capability or closed captioning. Among those that did, some described book collections for students with print disabilities, materials with closed captions, large print materials, braille materials, Bookshare—an online library of accessible ebooks for people with print disabilities—and one included a LibGuides page on audiobooks. Some libraries included instructions for how to locate materials in a certain format, or with a feature such as closed captions, in the catalog or in the stacks. HathiTrust was mentioned by 28 percent (30) of pages, and some also referred to the Internet Archive Collections for users with Print Disabilities. Some pages described accessibility information by publisher.

Technology: Software and Hardware/Equipment

Eighty-seven percent (93) of the webpages referenced accessibility software, and 53 percent (57) also provided a list of the software provided. However, few provided information about the specific edition of the software, and some pages referred to software not by name but by general function ("screen reader software," "voice recognition software"). Eight webpages did not include a list, but instead included a link to another university webpage implied to contain this information.

The four most commonly mentioned software programs were JAWS, Zoom Text, Kurzweil, and Dragon. A list of software programs mentioned by three or more pages is included in appendix A. Software programs mentioned that might have accessibility features, but were not accessibility-specific, such as Microsoft Office and Adobe Acrobat, were omitted.

Compared to software, specifics around hardware and equipment were much less commonly discussed on accessibility webpages. While there was no type of equipment that was mentioned in the majority of the webpages, the following equipment was mentioned on at least ten webpages: scanners, specialized mice, specialized keyboards, magnifiers, CCTV, and headphones. In three instances, headphones were specified as being noise cancelling, while in another three instances they were specified as having an attached microphone. Six pages mentioned braille embossers. For the keyboards, four were specified as being large print, two as Intellikeys brand (which creates programmable alternative keyboards), one was high contrast, and two were specified as large key. Widescreen monitors were mentioned on some pages, and there were general references to wheelchair-accessible stations and viewing carrels that supported closed captions. In appendix B there is a list of less infrequently mentioned items.

Although the authors did not look for information on such items from the outset, multiple libraries addressed loanable accessibility equipment and/laptops loaded with assistive technology, accessible phones, and lockers. Read-aloud spaces, specialized carts, and loanable wheelchairs were also included on some pages.

Other Resources: Campus Resources and External Resources

Ninety-three percent (100) of the webpages listed one or more campus resources external to the library. However, the majority of the webpages included only a single link to external campus resources, typically to the central campus page for the Disability Office or Accessibility Services. Much less commonly, links were included to adaptive technology centers, human resources office, other employment-related links, parking services, general campus accessibility information, and campus maps.

Only 21 percent (23) of webpages were found to list one or more community resources. From the webpages with community resources listed, there were 35 listings total. While there were few commonalities among pages in terms of what community resources were listed, links to the ADA were found in several pages. Some webpages included links to state-level services or policies, such as Michigan Commission for the Blind Braille and Talking Book Library, Disability Rights California, and Relay Texas, and a few included links to information about disabilities or to organizations working on disability rights and awareness.

Discussion

The authors originally anticipated that ARL libraries' accessibility webpages would have made substantial gains since the findings of Cassner et al. (2011), with potential information deficits largely found in less examined accessibility areas such as lighting, navigation information, and quiet spaces. While slight gains were made in the percentage of ARL libraries found to have an accessibility webpage, with Cassner et al. finding 88 percent (87/99) had such a page,[34] and this study finding 93 percent (107/115) had a page, most pages demonstrated considerable room for improvement across all of the reviewed categories of content. Items such as elevators, restrooms, proxy borrowing, and emergency procedures that were frequently omitted a

decade ago[35] were still absent from most pages, and information pertaining to the top three content priorities by interviewed students with disabilities—sensory information (noise, privacy, lighting), information about library materials with accessibility features, and details about physical building accessibility[36]—also proved to be in short supply.

Overall, users with disabilities at ARL libraries who are trying to assess whether they will be able to successfully navigate the library space and find a suitable place to study, or get assistance other than book retrieval and information about accessibility software, will typically **not** find the needed information on libraries' accessibility webpages. Indeed, they might not be able to even locate the accessibility page to begin with, given that fewer than half had a link to it from their homepage that was not concealed within a dropdown menu, and almost a quarter did not link to it from their homepage at all.

While the findings of this study clearly indicate shortfalls in online documentation of content on accessibility webpages, which were largely consistent with deficits found by Vaughan and Warlick (2020),[37] what is less clear is the reason for these shortfalls. In some cases, it is possible that the omitted content indicates a genuine lack of available services or resources. The low documentation of information on proxy borrowing, book delivery, or expanded options for interlibrary loan may unfortunately indicate that many ARL libraries do not formally offer these services, which were not specifically inquired about in the 2018 Accessibility and Universal Design survey.[38] It is likewise possible, although somewhat surprising, that accessibility-oriented hardware and equipment may not be part of most institutions' holdings. While scanners with OCR capabilities, speakers, microphones, and magnifiers or CTVs were indicated to be owned by more than half of the responding ARL libraries in the SPEC kit, it may be the case that the responding libraries tended to be ones that were further along with their accessibility efforts and that the availability of these items in the ARL libraries that did not respond was significantly lower.

In other cases, it seems highly probable that there is a disconnect between what libraries have or will provide and what is documented on their accessibility webpages. The clearest example of the disconnect came in the comparative paucity of information about internal and external spaces, as all libraries have restrooms, lighting features, and furniture, and most likely have dedicated quiet spaces and elevators. Some of this information may not have ever been documented, but other components likely have already been compiled and documented but simply not included in this page. For example, while none of the websites reviewed by Vaughan and Warlick included information or links to library floor plans,[39] and fewer than 10% of the accessibility webpages in this study did, when Wilkinson searched library websites more broadly they found the vast majority included floorplans—usually within a page containing broad "About" style information about the library or a page specific to spaces.[40]

Despite the disappointing aggregate results, it is worth noting that some libraries have clearly invested considerable time and effort into these pages, and even more sparse webpages sometimes provided information about interesting offering or services. There were 15 sites that the authors flagged as potential exemplars, typically either due to an overall feeling of comprehensiveness or notably strong content in a particular area, such as descriptions of physical spaces. These are listed in appendix C with notes highlighting some of their particular areas of strength. Interestingly, several of the potential exemplars were Canadian institutions; these were excluded from both the study from Cassner et al. and the one from Graves and German, which focused on only US academic ARL members' websites.[41] Some

accessibility webpages also made it clear that they were actively interested in getting feedback from stakeholders, with one library soliciting recommendations for loanable assistive technology; another specifying that they had regular sessions with the campus accessibility office to review the accessibility of the website, information, resources, and services; and one asking assistive technology users to consider joining their accessible testing participant pool.

Overall, improving and expanding the library's accessibility webpage is a task that all academic libraries can engage in, and regular audits of this page can help identify needed updates or expansions based on changing circumstances. In appendix D, a suggested audit guide is included, with options to indicate if each content item is represented on the page and, if not, whether it is currently documented elsewhere and can be easily added, if information would need to be compiled, or if this would represent a new offering. While certainly not definitive, this audit can also be used to help more broadly assess the current availability of resources, services, and information about facilities for users with disabilities that the library currently provides.

Limitations and Further Research

During the process of data collection, some institutions' accessibility webpages moved or changed; and, while care was taken to try to ensure that the same webpage was reviewed for all collected data, it is possible that some discrepancies could have emerged. Data collection also coincided with the beginning of many institutions going virtual due to the pandemic, which may also have impacted some pages.

While the researchers hoped to do some basic assessment of the welcoming, or exclusionary, nature of the introductory language used on the webpages by looking at word choice and term frequency, it was determined both that terms and phrases could not be meaningfully assessed outside their specific context, and that individual interviews, or focus groups, with user with disabilities would be a much more appropriate way to assess this content. Also, initially data regarding Search Engine Optimization (SEO) for these pages was collected to look at findability of these page outside the library homepage, but ultimately the approach taken was determined to be insufficiently rigorous.

In terms of other future research, it would be very beneficial to get feedback from not only more potential users of accessibility pages, but also those who have independently navigated to these pages to learn more about what brought them to the page and what is useful or missing based on their particular point of need. Research that provides a larger picture of users' interactions with the library, such as the Photovoice method used in Eamon Tewell's (2019) study on the experiences of marginalized students,[42] could also provide useful context to inform accessibility webpages and library staff's training and approach to working with users with disabilities. It is worth noting that in Brunskill's previous interview study no participants identified themselves as blind/low vision or deaf/hard of hearing. As such, specific inclusion of participants who identify as blind/low vision and deaf/hard of hearing could be very beneficial.

Conclusion

Accessibility webpages can allow users to better understand a space they have not yet explored, to learn about services they might not otherwise have known to exist, and can empower them to pursue additional needed assistance. Unfortunately, a bird's-eye view of all the ARL pages

shows the extent of information that is still commonly omitted from these pages, with most accessibility pages not covering expected and needed information about the library's facilities, resources, and services. Clarity around what is available to students with disabilities is critical, especially since users may otherwise be uncomfortable asking and library staff may not even know the answer. An accessibility webpage provides the opportunity to connect users with disabilities with the library and its resources and to support library staff assisting these users, so greater attention to promoting and expanding these pages could pay considerable dividends. The authors hope libraries will be inspired to use their accessibility webpages as a way to better document and market information about what is available to their users with disabilities and also to identify current gaps in services, facilities, and resources that can be rectified.

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APPENDIX A. Assistive Software Listed on Webpages

Software	# Pages Mentioning	Type of Software
JAWS	60 (56%)	Screen reader
Zoom Text	53 (50%)	Magnification
Kurzweil	47 (44%)	Can vary based on product, not always specified
Dragon	35 (33%)	Voice recognition
Read & Write	15 (14%)	Literacy software, focus on text to speech
Open Book	10 (9%)	Text to speech, convert to large print
FS Reader	8 (7%)	Free with JAWS
Magic	8 (7%)	Magnification
Inspiration	6 (6%)	For visual mapping, outlining, writing, and making presentations
Natural Reader	6 (6%)	Text to speech
NVDA (NonVisual Desktop Access)	5 (5%)	Screen reader
SensusAccess	5 (5%)	Format conversion
ABBY Fine Reader	4 (4%)	OCR tool
Duxbury	5 (5%)	Braille translation
VoiceOver	3 (3%)	Screen reader
Narrator	3 (3%)	Screen reader

APPENDIX B. Additional Equipment/Hardware Mentioned on Webpages

- Adaptive peripherals
- Adjustable lighting
- Antiglare lamps
- BOOX Concussion monitor/tablet
- Braille printer
- C-Pen Readerpen
- High-power Ledu reading lamp
- JAWS dongles
- Livescribe EchoPen
- LOC talking books cassette player
- Logitech Touchpad
- MAGic dongle
- Panasonic Talking Calculator
- PEARL Portable Reading Camera
- Perkins Braille typewriter
- Perkins Brailler
- Phonic Ear Easy Listener
- Pocketalker Pro personal amplification devices
- Printing House for the Blind tape recorder
- Proximity readers
- Shopping carts
- Simeon Soundfield portable voice amplifier
- Smart pens
- Speakers
- Tape and digital audio recorders
- Task lighting
- Whiteboards
- Wheelchairs

APPENDIX C. List of Potential Exemplars

University	URL for Accessibility Page	Notes
Arizona State University	https://lib.asu.edu/disability	Notably strong content in: Assistive technology and equipment, as well as information by location
Florida State University	https://www.lib.fsu.edu/accessibility	Overall feel of being comprehensive
Iowa State University	https://www.lib.iastate.edu/help-services/accessibility-services	Notably strong content in: Collections and furniture descriptions
McGill University Library	https://www.mcgill.ca/library/services/access	Notably strong content in: Information by location
Michigan State University	https://lib.msu.edu/general/accessibility/	Overall feel of being comprehensive and notably strong content in: Format conversion and services
North Carolina State University	https://www.lib.ncsu.edu/accessibility-services	Notably strong content in: Parking, building access and evacuation
Rutgers University	https://www.libraries.rutgers.edu/accessibility	Notably strong content in: Information by location
Syracuse University	https://library.syr.edu/accessibility/index.php	Overall feel of being comprehensive
University of Alabama	https://www.lib.ua.edu/using-the-library/accessibility/	Organization of content
University of California Irvine	https://www.lib.uci.edu/accessibility	Overall feel of being comprehensive
University of Guelph	https://www.lib.uoguelph.ca/using-library/library-accessibility-services	Notably strong content in: Format conversion and services
University of Illinois Urbana Champaign	https://guides.library.illinois.edu/usersdisabilities	Notably strong content in: Reference services and contact form
University of Manitoba	https://libguides.lib.umanitoba.ca/accessibility	Overall feel of being comprehensive
University of Michigan	https://www.lib.umich.edu/accessibility	Overall feel of being comprehensive and notably strong content in: Detailed and actionable descriptions
University of North Carolina Chapel Hill	https://library.unc.edu/services/disability-services/	Notably strong content in: Information by location

Appendix D: Recommended checklist for audit

Date of audit:_____

Existence and findability							
	Yes						No
Do you have an accessibility webpage?	☐	URL:					☐
Is there a top-level link to it from the library webpage?	☐	Top-level link name:					☐
Introduction & Contact information							
	Yes	Yes, but needs update	No		This is already documented & can be easily added	Information needs to be compiled	This would be a new offering
Is there introductory language explaining the purpose of this page?	☐	☐	☐	If no →	☐	☐	☐
Is clear contact information provided for accessibility questions?	☐	☐	☐	If no →	☐	☐	☐
Are there options other than phone or email listed?	☐	☐	☐	If no →	☐	☐	☐
Language around provision of services/resources in terms of disabilities							
	Yes	Yes, but needs update	No				
Any language indicating/ interpretable as some resources/services being limited to particular disabilities?	☐	☐	☐	If yes →	Is this language based around restrictions from an outside entity, such as HathiTrust? Yes No Not sure		

Software & Equipment							
	Yes	Yes, but needs update	No		This is already documented & can be easily added	Information needs to be compiled	This would be a new offering
List of available accessibility software?	☐	☐	☐	If no →	☐	☐	☐
If yes, is software version information included?	☐	☐	☐	If no →	☐	☐	☐
Information on where this software can be accessed?	☐	☐	☐	If no →	☐	☐	☐
Information about accessibility equipment (Scanners, headphones, trackpads, adjustable tables...)?	☐	☐	☐	If no →	☐	☐	☐
Information on photocopying specifically pertinent to users with a disability?	☐	☐	☐	If no →	☐	☐	☐
Information on scanners specifically pertinent to users with a disability?	☐	☐	☐	If no →	☐	☐	☐
Information on printers specifically pertinent to users with a disability?	☐	☐	☐	If no →	☐	☐	☐
Interior spaces							
	Yes	Yes, but needs update	No		This is already documented & can be easily added	Information needs to be compiled	This would be a new offering
Information/images about library furniture (other than presence of adjustable tables)?	☐	☐	☐	If no →	☐	☐	☐

Study rooms/private spaces?	☐	☐	☐	If no →	☐	☐	☐
Information about quiet spaces?	☐	☐	☐	If no →	☐	☐	☐
Distraction free spaces?	☐	☐	☐	If no →	☐	☐	☐
Elevators?	☐	☐	☐	If no →	☐	☐	☐
Restrooms?	☐	☐	☐	If no →	☐	☐	☐
Any areas of the library not wheelchair accessible or are otherwise unaccessible?	☐	☐	☐	If no →	☐	☐	☐
Statements about ADA compliant stacks/other internal accessibility features?	☐	☐	☐	If no →	☐	☐	☐
Information about lighting?	☐	☐	☐	If no →	☐	☐	☐
Exterior spaces							
	Yes	Yes, but needs update	No		This is already documented & can be easily added	Information needs to be compiled	This would be a new offering
Accessible entrances (ramps, push buttons/ automatic doors)?	☐	☐	☐	If no →	☐	☐	☐
Information about parking (location, cost, handicap spaces…)?	☐	☐	☐	If no →	☐	☐	☐
Other transportation options (campus shuttle, bus, train, rideshare...)?	☐	☐	☐	If no →	☐	☐	☐
Maps (internal & external)?	☐	☐	☐	If no →	☐	☐	☐

Services							
	Yes	Yes, but needs update	No		This is already documented & can be easily added	Information needs to be compiled	This would be a new offering
Information about format conversion?	☐	☐	☐	If no →	☐	☐	☐
Book paging service?	☐	☐	☐	If no →	☐	☐	☐
Proxy borrowing?	☐	☐	☐	If no →	☐	☐	☐
Book delivery service?	☐	☐	☐	If no →	☐	☐	☐
Accommodations for interlibrary loan?	☐	☐	☐	If no →	☐	☐	☐
Accommodations for information literacy instruction?	☐	☐	☐	If no →	☐	☐	☐
Circulation assistance/ practices specific to users with disabilities?	☐	☐	☐	If no →	☐	☐	☐
Information about research assistance?	☐	☐	☐	If no →	☐	☐	☐
Research assistance available specific to students with disabilities?	☐	☐	☐	If no →	☐	☐	☐
Information about HathiTrust?	☐	☐	☐	If no →	☐	☐	☐
Library materials with accessibility features (readaloud, closed captioning)?	☐	☐	☐	If no →	☐	☐	☐

Information on emergency/evacuation procedures?	☐	☐	☐	If no →	☐	☐	☐
Is there information for both branch libraries and the main library?	☐	☐	☐	If no →	☐	☐	☐
Service or emotional support animals?	☐	☐	☐	If no →	☐	☐	☐
Links to external resources & services							
	Yes	Yes, but needs update	No		This is already documented & can be easily added	Information needs to be compiled	This would be a new offering
Other campus resources related to disabilities?	☐	☐	☐	If no →	☐	☐	☐
Community resources related to disabilities?	☐	☐	☐	If no →	☐	☐	☐
Other							
Is there other information that you noticed is missing from this page? Anything else that needs to be edited/updated?							

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What Can "Marriage Announcements" Tell Us? A Content Analysis of News Articles on Library-Press Collaboration

Mei Zhang and Xiaofei Wei

More university presses and academic libraries have started to collaborate in the scholarly publishing field, and it becomes important to investigate how this message of collaboration has been delivered to the academic community, since this community includes both creators and users of scholarly works. This study collects 23 news articles on the collaboration between university presses and academic libraries from the formal news sites of the affiliated institutions and then conducts content analysis on these articles, focusing on their content coverage and purposes. These news articles covered topics including the background and benefits of collaboration, how the collaboration worked/would work, and how libraries and presses can contribute to the collaboration. The analysis reveals that these news articles aim not only to inform their readers about the collaboration, but also to provide rationales to the collaboration. The news articles also demonstrate an unbalanced depiction between press and library by focusing more on the press, and this study interprets this phenomenon as a result of two assumptions held by the news articles: the audience's unfamiliarity with the press and more challenging financial viability issues the press encountered.

Introduction

The Wayne State University Press reinstated its terminated leadership and switched its reporting from the Dean's Office of University Libraries to the Office of the President in February 2020—it had only been a few months since it joined the university library in fall 2019. This unsuccessful partnership between university press and the library immediately sparked discussions within and outside the scholarly publishing community. As people also noticed the existence of many successful library-press collaborations, they asked questions about the reasons to form such collaborations, as well as the problems and future of similar partnerships between university presses and academic libraries.

Although studies show an upward trend of the collaboration between university presses and academic libraries, we notice an uneven representation in the scholarly literature on the library-press collaboration, emphasizing the perspective of insiders—librarians and profession-

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als in the scholarly publishing industry over the perspective of the wider academic community—including but not limited to faculty, researchers, students, and staff. Not surprisingly, librarians and scholarly publishing professionals have published a large body of scholarly library literature examining the library-press collaboration in terms of its background, benefits, collaboration details, and challenges, either theoretically or through case studies. However, much less attention has been paid to the academic community's perception or reaction of such collaboration, and none of the literature explores how this library-press collaboration has been communicated with the academic community, even though the academic community plays a critical role in scholarly publishing as the creators and consumers of scholarly works.

The lack of research on the academic community's perception and reaction of library-press collaboration encourages us to explore how the differing stakeholders—the library, the university press, and others in the university—inform the academic community about such collaborations. As the message communicated to the academic community would impact how they understand and respond to the new collaboration initiative, it is important to first explore what message has been delivered to the academic community about library-press collaboration before we can really understand and interpret, or even predict reactions to such collaborations. In this study, we borrow the term "marriage" to describe library-press collaboration from Charles Watkinson when he used it to depict the "long term, and deeply embedded partnership" in such collaborations.[1] We examine how this "marriage" has been communicated to the academic community through official "marriage announcements"—news articles published on the official websites of affiliated institutions, and we focus on answering the following two research questions:

1. What information is covered in the news articles about library-press collaboration?
2. What are the purposes of these news articles on library-press collaboration?

Literature Review

Background of Library-Press Collaboration

Current literature from both library and publishing communities discusses several background factors that encourage the collaboration between university presses and academic libraries. Some studies view this collaboration as a way for presses to solve the financial pressures when publishing scholarly monographs.[2] This type of pressure was largely brought by the increasing price of monographs and diminishing sales of titles; consequently, presses cannot meet researchers' demands to publish many scholarly monographs, which was described as the "crisis of the scholarly monograph."[3] As scholarly monograph publishing is considered to be university presses' "truly unique contributions that are essential to academic,"[4] university presses take multiple strategies to reduce their financial pressures in this crisis, such as moving from publishing hard copies to paperbacks and expanding the list of titles to include some trade books or textbooks.[5] Meanwhile, some presses decide to collaborate with academic libraries to solve the sustainability issues in their scholarly monograph publishing based on the "natural" partnership between press and library.[6]

Another factor mentioned by several studies as a background for the press-library collaboration is the academic libraries' intention to enter into the scholarly publishing field, particularly through open access publishing. As more academic libraries started their publishing programs or projects, one issue discussed by both librarians and presses is the relationship between library and press.[7] Some practitioners recognize that library publishing cannot replace university presses

in scholarly publishing, since the reputation of library publishing cannot really compete with the long-term established prestige of university presses in the field. They point out that libraries and presses should be collaborators rather than competitors due to their complementary skills.[8] This attitude also echoes with the findings from a 2012 AUP survey of libraries and university presses about the library-press collaboration, where 69 percent of participants believed that library publishing should "complement" rather than "reinventing or duplicating" press publishing.[9]

Additionally, a few articles have depicted the library-press collaboration as both parties' reactions to the rapidly changing scholarly publishing environment brought by the developments or even revolutions in information technology and digital scholarship.[10] Based on the shared mission/values between libraries and press in disseminating and preserving the scholarly works, their collaboration seems to be natural along with the various benefits it can bring to both parties.

Types of Library-Press Collaboration

Many researchers and practitioners agree that the library-press collaboration should have various formats as the collaborating institutions have different needs and contexts, and no "one size fits all" model could work for all cases.[11] Raym Crow, in his widely discussed work on issues in campus-based publishing partnership, identified five types of library-press initiatives within a same institution, including the following: backfile digitization projects, library online provision of press print titles and supplements, press distribution of library content, creating digital research or reference services, and providing digital publishing platform.[12] However, as Richard Clement pointed out that Crow's classification primarily focuses on the collaborations that are "programmatic", which suggests the press and library collaborate in a program/project with shared expertise and resources while still "remaining an independent unit."[13] Clement then identified another type of library-press collaboration, where the press reports to the university library under the same organizational structure. Clement called this reporting structure "library and press integration," and he noticed that there are different degrees of such integration.[14] Watkinson further created a taxonomy to systematically describe the different types of library-press relationships, including five types from the least integrated type as "little evidence of currently active relationships between press and library" to the most integrated type as "shared vision approaches."[15] Detailed information about Watkinson's five types of library-press relationships will be provided in the methodology section, as it inspires us to develop our classification of different types of library-press collaborations.

Benefits of Library-Press Collaboration

Many articles examine how libraries and presses can benefit from the library-press collaboration. One common way to frame the benefits is to discuss mutual advantages for both parties. Several scholars claim that the collaboration would enhance library and press's mutual understanding of scholarly publishing;[16] others mentioned some general benefits of collaboration, including shared expertise, reduced cost, and broadened perspectives, which would better prepare both parties responding to the rapidly changing scholarly publishing environment.[17] Additionally, literature also outlines the benefits for press and for library separately, as described below.

The most-discussed benefit for the press is that the collaboration could improve the press's organizational visibility in its home institution. Scholars claimed that the press, before the collaboration, used to be treated as an auxiliary unit in university; the collaboration with

library allows the press to better demonstrate its value in disseminating scholarly works to the affiliated university, which then help the press move from the marginalized position to the center of the university.[18] Another benefit for the press is the collaboration would provide the press with financial and technical support to experiment with different publishing models.[19]

The benefits libraries could gain from the collaboration with the press focus on helping the library enter into the publishing field. Press's expertise and skills in the acquisition, design, and production of books could help libraries better interact with scholars as the content creators rather than library patrons; and eventually the partnership with press will allow libraries to improve the legitimacy and reputation of library publishing, especially outside the affiliated university.[20]

Challenges of Library-Press Collaboration

Some articles describe the challenges for library-press collaboration. Cultural differences between library and press is an often-mentioned challenge for the collaboration. Particularly, Mary Alice Ball claimed that library usually treats scholars as researchers; thus, its focus is service and access. Conversely, university press treats scholars as content providers, thus focusing on content production and protection of the intellectual rights.[21] Patrick Alexander further argued that library focuses on serving patrons inside a university, while press often serves scholars outside its home institution.[22] Monica McCormic noted that library tends to say "yes," as its main function is to provide services to patrons, while university press tends to say "no," as it cannot publish everything submitted to the press.[23] All these cultural differences between two organizations make it challenging for library and press to build a mutual respect and understanding environment and thus find a common ground to "be nimble and experimental together."[24] Another main challenge of library-press collaboration lies in their different financial operations: university press is a revenue-generating organization, whereas library operates on "subsidized, expenditure-based budget";[25] therefore, library sometimes does not fully understand press's revenue-driven operations to maintain its financial viability.[26]

Limitations of Current Literature

The literature review demonstrates that the majority of these articles were written by stakeholders either from libraries or university presses and have covered a relatively comprehensive range of the topics on the library-press collaborations. However, what we do not know from these articles is how the library-press collaboration has been communicated with a wider audience beyond the library and press communities. Since the collaboration not only affects the two parties—libraries and university presses—but also impacts the academic community, which are the actual creators and users of the content in scholarly publishing, it is important to investigate how this larger academic community perceives library-press collaboration. Surprisingly, little scholarship exists on both parties' or universities' efforts to actively communicate this collaboration with a wider audience; therefore, our study aims to investigate such efforts of library/press/university by analyzing articles from university news sites that officially announced the formation of the collaboration.

Methodologies

Data Collection

We focus on investigating how an institution informed its academic community about the

library-press collaboration through formal news channels; therefore, the first step is to identify these news articles. We conducted three rounds of web search to collect news articles in April, June, and July of 2020 to ensure we captured the latest news on targeted topics. Specifically, we used keywords ("university press AND librar*) combined with one of the following verbs—(merge/join/collaborat*/partner*/ integrat* /report /unite / move/ work together / transfer / embed)—to initiate multiple Google searches, and then we went through the inclusion and exclusion criteria, as listed below, for the first 100 web pages returned by each Google search.

Inclusion criteria: 1) We collected only news articles from the university/institution's formal news website. Particularly, we used two ways to identify formal news sites: first, a report is found on the news site with a URL of the institution's official website, like .edu or .org; second, the report is found on the campus newspaper, even though its URL ends with .com, like *The Michigan Daily* (https://www.michigandaily.com/). Among our collected 23 news articles, all but two were identified in the first category, and table 1 provides detailed information about the news sites that held those news; 2) The news articles should primarily focus on the library-press collaboration; 3) The academic library and the press in the collaboration should be located in the United States.

Exclusion criteria: 1) We did not collect any news article published on a national news platform, like *Inside Higher Ed*, or *The Chronicle of Higher Education*; 2) We did not collect news articles where the reported collaboration was NOT between library and press. For instance, if a news article reported on the collaboration between a press and a scientific society on open access publishing with the funding from a library, then we will not collect this report in our dataset; 3) We did not treat a library's purchase of resources published by a university press as library-press collaboration; 4) We did not collect multiple reports of the same collaboration. Therefore, if there are multiple news articles found on the same collaboration at different stages, we only collected the first report on the launch of this collaboration.

After applying the inclusion and exclusion criteria to the webpage returned by Google search, we identified 23 news articles from 2007–2020 as our dataset for further analysis. Table 1 demonstrates the basic information about these 23 news articles. The discussion of how we developed the types of collaboration can be found later in this methodology section.

TABLE 1
Basic Information about News Articles Collected in This Study

Report #	Library	Same Institution Press?	Year of Report	Report News Site	Type of Collaboration	Report Title
1	Oregon State University Libraries	Y	2007	*The Messenger**	Type 4	OSU Press Joins OSU Libraries
2	Cornell Library	Duke University Press	2008	Cornell Chronicle	Type 3	Duke University Press Joins Cornell Library to Expand 'Project Euclid' by Putting Independent Journals Online

**The Messenger* is a magazine published twice a year by OSU Libraries and Press and distributed to donors to Oregon State University.

TABLE 1
Basic Information about News Articles Collected in This Study

Report #	Library	Same Institution Press?	Year of Report	Report News Site	Type of Collaboration	Report Title
3	University of Michigan Library	Y	2009	The Michigan Daily	Type 4	University to Merge Publishing Operations with Library
4	Utah State University Libraries	Y	2009	Utah State Today	Type 4	Utah State University Press Merges with Merrill-Cazier Library
5	Digital Library of Georgia	University of Georgia Press	2011	UGA Today	Type 3	The University of Georgia Press and the Digital Library of Georgia Collaborate on Open Access E-book
6	Indiana University Libraries	Y	2012	IU News Room	Type 1	IU to Establish New Office of Scholarly Publishing
7	Robert Frost Library at Amherst College	Y	2012	Amherst College News	Type 2	Amherst College to Launch First Open-access, Digital Academic Press Devoted to the Liberal Arts
8	Library Affairs at Southern Illinois University Carbondale	Y	2014	SIU News	Type 4	Dewey Center, SIU Press Join Library Affairs
9	California Digital Library	Y	2015	CDLINFO News	Type 3	UC Press and the CDL Receive $750K Grant from the Andrew W. Mellon Foundation
10	Texas Tech University Libraries	Y	2015	The Daily Toreador	Type 4	Tech University Press Merges with Tech Libraries
11	Humboldt State University Library	Y	2015	myHumboldt Message Center	Type 2	HSU Library Launches Humboldt State University Press
12	University of Cincinnati Libraries	Y	2016	UC News	Type 2	UC to Launch New Academic Press
13	Kent State University Libraries	Y	2017	e-Inside	Type 4	Kent State University Press Reports to University Libraries

TABLE 1
Basic Information about News Articles Collected in This Study

Report #	Library	Same Institution Press?	Year of Report	Report News Site	Type of Collaboration	Report Title
14	Fordham University Libraries	Y	2017	Inside Fordham	Type 3	Fordham University Press and Fordham Libraries Awarded NEH/Mellon Grant
15	Cornell Library	Y	2017	Cornell Chronicle	Type 4	Cornell Press Finds New Home at Cornell Library
16	College of University Libraries and Learning Sciences at the University of New Mexico	Y	2018	UNM Newsroom	Type 4	UNM Press Joins College of University Libraries and Learning Sciences
17	University of Washington Libraries	Y	2018	UW Libraries News & Announcements	Type 4	UW Press Joins UW Libraries
18	Texas A&M University Libraries	Y	2018	Texas A&M TODAY	Type 4	Texas A&M University Press to Merge with University Libraries Press Room
19	MIT Libraries	Y	2018	*MIT Libraries News* (also available on *MIT Press News*)	Type 3	The MIT Press to Launch Print and Open Access Book Series with Support from the MIT Libraries
20	University of Virginia Library	Y	2019	UVA Today	Type 3	UVA Library, UVA Press Partner to Make Original Scholarship Freely Available
21	University of Wyoming Libraries	University Press of Colorado	2019	UW News	Type 5	UW Libraries Joins University Press of Colorado
22	Wayne State University Libraries	Y	2019	Today@Wayne	Type 4	WSU Press Joins Library System
23	University of Tennessee Libraries	Y	2020	The University of Tennessee, Knoxville News	Type 4	UT Press Joins the University Libraries

Data Analysis

Coding Process

We conducted a content analysis on the collected news articles to systematically capture the meaning of materials. Specifically, we divided the 23 articles into five groups, with four to five articles in each group. Then one author inductively developed the initial codebook from the first group of four articles, and then discussed the codebook with another author to ensure we developed the same interpretation of the codebook. We further revised our codebook together based on the coding of another four articles in the second group. Later, two of us used the revised codebook to code the articles in groups 3–5 separately. After coding articles in one group independently, we compared and discussed our codes one by one before we moved to the next group; this comparison and discussion process helped us agree and remain consistent with our assignments of codes. Finally, we turned to the four articles in the first group and updated our coding based on the revised codebook.

In our codebook, we identified two categories of codes: the codes about the content coverage of the news articles and the codes about the identified interviewees. Table 2 provides the list of our primary codes along with their descriptions, and we also identified subcodes for some of our primary codes.

TABLE 2
Primary Codes Identified in This Study

Code	Description of the Code	# of News Articles Assigned with the Code
Category 1: Content Covered in the Report		
Background of collaboration	Description of the background of the library-press collaboration, like the environment depiction	20
Benefits for library	Benefits of collaboration for the library	8
Benefits for press	Benefits of collaboration for the press	14
Benefits for both library and press	Benefits of collaboration for both library and press described together	9
Benefits for others	Benefits of collaboration for parties other than press or library	21
Brief description of the press	Description of the press about its previous and/or current services, or the general history of the press	19
Brief description of the library	Description of the library about its previous and/or current services, or the general history of the library	4
Brief description of the institution	Brief history or description about the university where the press and/or library are affiliated with	2
How collaboration worked or would work	Description of how the collaboration would work or worked—it might be a plan, or a description of the working mechanism of current collaboration	23
What is offered by library	Any resource library can bring into the collaboration	10
What is offered by press	Any resource press can bring into the collaboration	13

TABLE 2
Primary Codes Identified in This Study

Code	Description of the Code	# of News Articles Assigned with the Code
Category 2: Interviewees in the Report		
Librarian	Name and title of librarian interviewed in the news	22
Staff from press	Name and title of press staff interviewed in the news	14
Person in both library and press	If a person holds titles from both library and press, then code his/her name and titles here	2
Others	Name and title of person outside library and press interviewed in the news	10

Identifying the Type of Collaboration

As we intended to identify different types of library-press collaboration in the news articles, we first planned to use the classification developed by Watkinson, which includes five types of library-press collaboration:

- Type 1: little evidence of currently active relationships between press and library
- Type 2: good relationships between the press and one or more libraries, but no reporting
- Type 3: reporting and joint projects, but relative autonomy and no physical collocation
- Type 4: physical collocation, reporting, but relative autonomy
- Type 5: more integrated, shared vision approaches

However, we encountered two challenges when applying this classification to our data: first, indicators of Types 1 and 2 cannot be found in the news articles, probably because these two types of collaboration were either very common across different institutions or were less worthy to report on; second, key information needed to distinguish Types 3, 4, and 5 were missing in the news articles, as the information might be too granular for most readers of the news articles.

Because of these challenges of applying an existing classification to our data, we decided to develop our own classification of library-press collaboration inductively from the collected news articles, which also includes five different types:

- Type 1: established a new office that includes components from both library and press
- Type 2: launch of a new press under library or supported/funded by library
- Type 3: joint projects
- Type 4: structure reorganization, including merge or integrations between library and press, reporting structure between two parties
- Type 5: library becomes a member of a consortial press

Table 1 under 3.1 demonstrates the different types of library-press collaboration we identified based on our own classification.

Methods Used for Code Coverage and Bigram Analysis

To better understand the focus of our news articles, we calculated the coverage percentage of primary codes and the most frequently used bigrams throughout these news articles. The

results of both analyses can be found in the Findings section. Specifically, we took a few steps to calculate the coverage percentage of primary codes. First, the coverage percentage of each code was calculated by dividing the sum of the coverage percentage in each source by the total number of sources (23). Then, the percentage of each code was converted proportionally such that the sum of all the percentages is 100 percent.

In this study, we used bigrams to display the most mentioned topics in the news articles. Bigram is a sequence of two words extracted from a text, and the most frequently occurred meaningful bigrams in a text can largely reflect the important topics of the text. Particularly, we used the following process to identify the most frequently occurred bigrams in the news articles. We first exported the references of each primary code in NVivo as separate word documents and then combined them into one document. Only the texts from the news articles were kept. Then we removed some property phrases, like the names of university/library/press, and the names of interviewees. We also removed "university press," "university library," and "university libraries," as these bigrams do not provide substantive information to our analysis. Then we conducted general text cleaning process, including converting text into lower case, removing common stop words, removing punctuations and extra white spaces. After the preparation, the document was processed using R and a few packages, including "tm," "RWeka," "wordcloud," and "ggplot2," to calculate the most frequently occurred bigrams and generated an initial bigram cloud. We further identified and removed irrelevant bigrams from the bigram list, like "he said" and "press will," and then generated the final frequency list and bigram cloud, as shown in figure 3.

Findings

Basic Information about the Reports

Type of Collaboration

Table 1 shows basic information of our news articles, which range from 2007 to 2020, and more than 65 percent of them were released in 2015 and after. As for the types of collaboration covered in these reports, 12 articles (52.2%) reported a Type 4 collaboration, which brings organizational structure changes to library and press; six articles (26.1%) represented Type 3 collaboration about joint projects between library and press; two articles (8.7%) covered Type 2 collaboration on the launch of a new press supported by library; we only found one article (4.4%) reported on Type 1 collaboration, where a new scholarly publishing office was launched to include the press and component of library; and one article (4.4%) on Type 5 collaboration, where a library became a member of a consortial press. Figure 1 further depicts the distribution of news articles by their publishing year and type of collaboration.

News Titles and Primary Codes Coverage

We found some interesting patterns in the titles of the news articles. Among the 23 news articles, eight of them used the pattern "press joins library," while none of them used "library joins press"; four used pattern "university press merges with University library"; two used pattern "University launches press." Additionally, four articles included the purpose of library-press collaboration, like "open access" or "make publications freely available online."

FIGURE 1
Distribution of News Articles by Published Year and Type of Collaboration

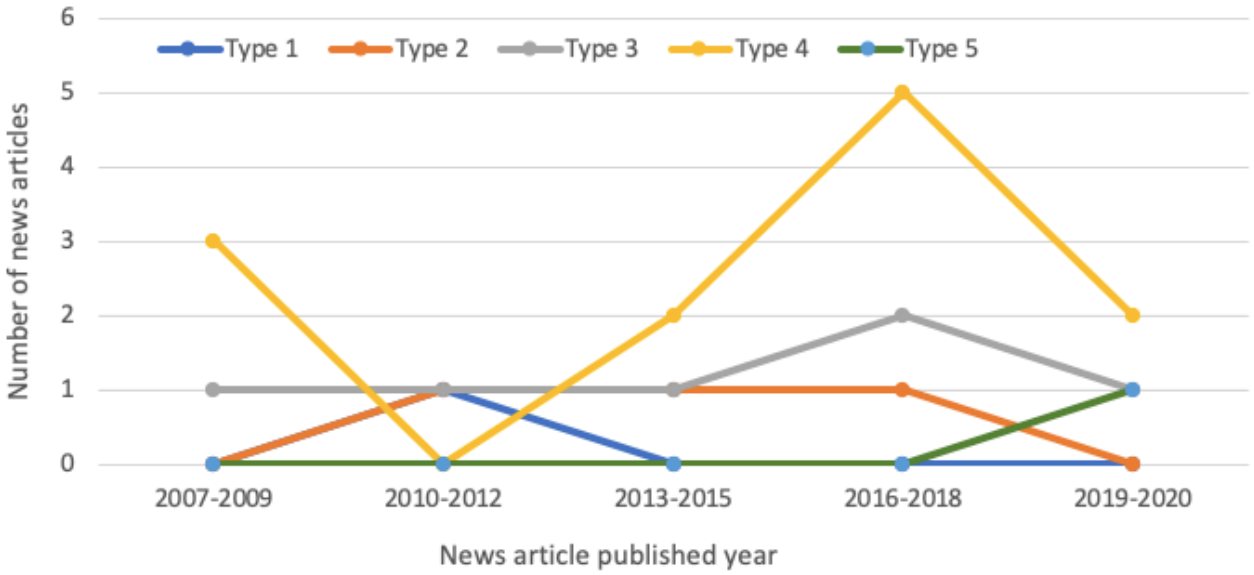


Figure 2 illustrates the coverage of our primary codes. Here we further create a parent code for the primary codes with related/similar meanings. For instance, we created a parent code "benefits" to include all four primary codes on benefits. The codes in the outer circle in figure 2 are our primary codes identified in the coding process, as shown in table 2, while the codes in the inner circle are the parent codes we created for the coverage analysis. Both the percentage of the original primary codes and their parent code can be found in figure 2.

FIGURE 2
Coverage Percentage of Primary Codes

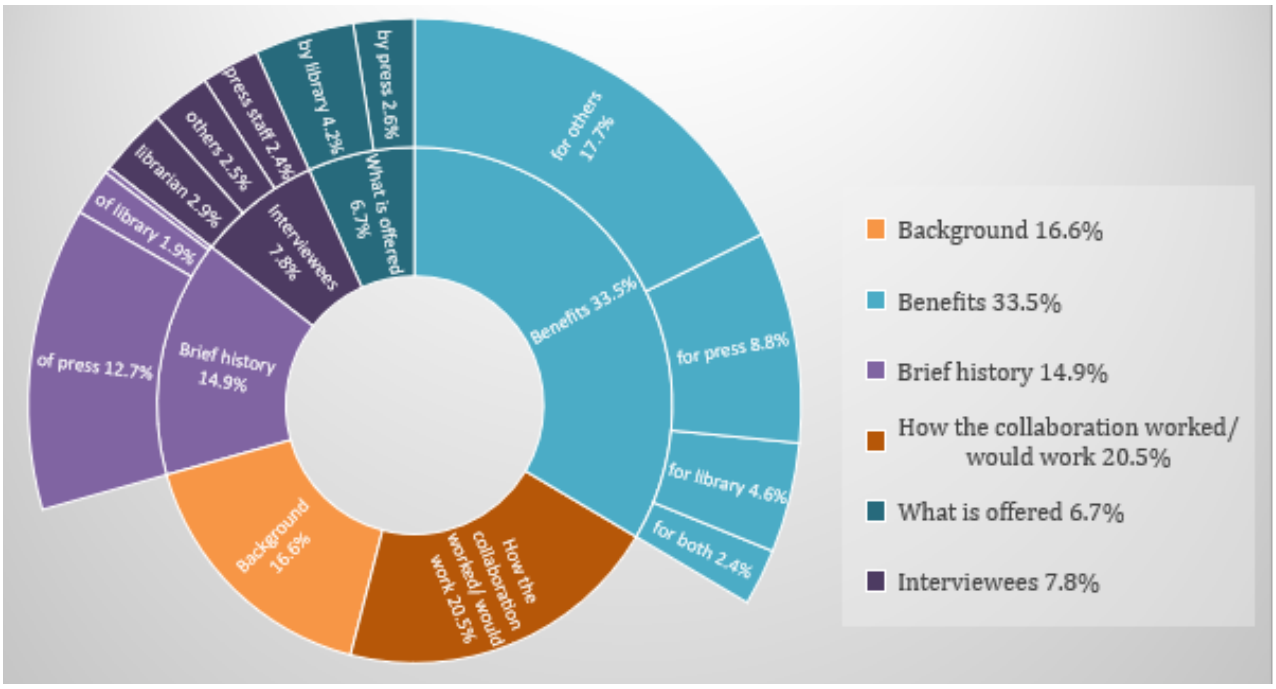


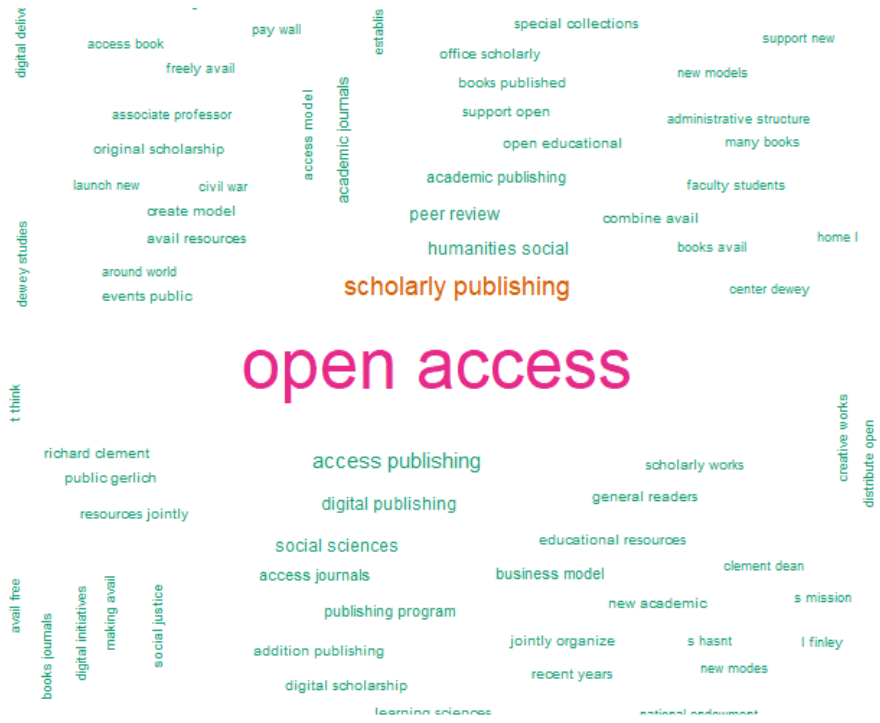
Figure 2 shows that the codes with widest coverage are "benefits" (33.5%) and "how the collaboration worked/would work" (20.5%), followed by background of the collaboration (16.6%), brief history of the press/library/host institution (14.9%), and other codes. Among the primary codes under "benefit," the coverage of "benefit for others" (17.7%) makes up more than half of the coverage of "benefits" (33.5%). Besides, it is worth noting that the coverage of "benefit for press" (8.8%) is almost twice as much as that of the "benefit for library" (4.6%). Further, when it came to the history/description, the news articles mainly provided history of the presses (12.7%), while very few coverages were on the history of the library (1.9%) or of the host institution (0.3%).

Most Frequently Used Bigrams

We identified the most frequently used bigrams in our dataset. Figure 3 shows the bigram cloud of references from all codes on the left and lists the frequency of most-used bigrams on the right. As shown in figure 3, "open access" is the most frequent bigram, followed by bigrams related to scholarly publishing, such as "scholarly publishing," "access publishing," "digital publishing," "access journals," "peer review," "access models," and "business model." We found some frequent bigrams indicating the disciplines/domains of the publishing involved in the collaboration, including "social sciences," "humanities social," and "educational resources." Another bigram worth noting is "business model."

FIGURE 3
Bigrams of All the Coded Text in the News Articles

Bigrams	Frequency
open access	77
scholarly publishing	21
access publishing	15
digital publishing	10
humanities social	10
peer review	10
social sciences	9
academic publishing	8
access journals	8
academic journals	7
business model	7
publishing program	7
access model	6
educational resources	6



Interviewees and Their Sentiment in the News

We also identified the interviewees covered in the news articles, which depicted the stakeholder's information in the collaboration. Among our 23 articles, 22 interviewed librarians,

mainly library director/dean or similar position; 14 included staff from press—mainly press director; two included persons holding dual positions at both library and press; 10 individuals were interviewed outside of library and press, including (vice) president of a college/university, provost, and professors in humanities.

The stakeholders interviewed in the news articles expressed an overall positive sentiment toward the collaboration. For example, some press directors said they were "excited," "thrilled," or "enthusiastic" about the collaboration, and some mentioned "exciting things" they can do together. Some library staff praised the role of the press; for example, the MIT libraries director said the MIT press "has long been an innovator in digital publishing and open access" (#19). Another librarian was enthusiastic that the collaboration was a good opportunity for the library to become the producer of knowledge: "this is a historical turning point for libraries" (#20).

Themes Covered in the News

Background of the Library-Press Collaboration

We identified three major themes in the news as the background of the library-press collaboration.

1. Demand for new publishing model

Most news articles depicted the library-press collaboration as a response to the academic community's demand for a new publishing model, especially a demand for open access publishing in humanities. Those articles outlined the drawbacks of traditional publishing models by focusing on the increasing price of books and the reduced number of published titles, which created barriers for academic communities to disseminate and get access to knowledge. For instance, one article (#7) claimed that "current models of scholarly publishing do far more to lock down information than to disseminate it to those who need it." Additionally, we identified two other factors that generated the demand for a new publishing model, including university presses' technical and financial challenges in digital publishing and the lack of online publishing venues in humanities and social sciences. Then these articles introduced library-press collaboration as an opportunity for the two parties, especially for university press, to engage in a new publishing model—primarily the open access model—to solve the problems brought by traditional publishing models, since open access would provide free access to the scholarly works for all readers around the world.

2. Following vs. leading

Interestingly, we notice that about half of collected news articles framed the library-press collaboration as the local press/library's move to follow the trend in scholarly publishing. These articles emphasized that many peer presses and libraries, including some leading ones, had established collaboration especially in open access publishing, and thus the local press/library collaboration was an effort to join the "emerging trend" or "national trend" (#4).

Different from the "follower" perspective, we also observed the "leader" perspective in several articles. Although these articles covered a wide range of time periods in our data, all of them either emphasized the leading roles of the local press/library in library-press collaboration or open access, or, addressed their all-time "innovative" characteristics in digital publishing.

3. Positive relationship between press and library

About 30 percent of the news articles discussed the positive library-press relationship in the background of the collaborations. These positive relationships came from two sources:

prior partnership and shared missions. Specifically, some of these articles reported that the library and press had already partnered in different projects, while other articles addressed the shared missions or visions between the two parties in creating, disseminating, and preserving knowledge, all of which would allow them to better understand the other party's needs in the collaboration.

Benefits Brought by the Library-Press Collaboration

All articles outlined some benefits of the library-press collaboration. Compared to the eight reports that mentioned the benefits for the library, the majority of our reports had more coverage on the benefits for the academic community (21 reports) and the benefits for the press (14 reports), which will be described below.

1. Benefits for academic community: The most-discussed benefit in the news articles is that library-press collaboration would promote the accessibility and dissemination of knowledge. It echoes with our finding in the "background" section, where many articles discussed the academic community's demands of a new publishing model as a motivation for such collaborations. These articles framed library-press collaboration as an opportunity for both parties to explore open access publishing of scholarly works, particularly monographs in humanities areas; thus, it would help scholars as the creators of scholarly works to promote the visibility and dissemination of their works on the one hand and help them as the users of scholarly works obtain access to more materials on the other hand. Moreover, several articles pointed out the financial benefits for students, as such collaboration would also help develop open educational resources or open e-textbooks, which would greatly reduce the cost of college education. Additionally, some articles reported that scholars would receive better publishing services, like peer-review process, content editing, and marketing of their works. Several articles further claimed that the collaboration could promote the reputation of the affiliated university as a research-oriented institution through digital publishing services in areas in which the university has distinctive expertise.
2. Benefits for the press: Our findings in the benefits for the press covered in the news articles are similar to the ones discussed by other scholarly literature as shown in the literature review section, albeit with different emphasis. The most discussed benefit is to improve the financial viability of the press by reducing its deficit, lowering the operation cost, and increasing revenue in the collaboration with library. Note that we found the words "sustainability" or "sustainable" have been mentioned many times in the texts under the code of "benefit for press," which implies the importance of sustainability to a university press. Moreover, some news articles reported that collaboration would provide new business and service opportunities for the press, such as participating in the university's digitization efforts and experimenting with multiple scholarly publishing models. The third type of benefit revealed in our dataset is that the collaboration could help the press become more visible in the local community by providing improved publishing services to the local community.
3. Benefits for the library: Not surprisingly, we observed a very limited number of news articles reporting the benefits of such collaboration to the library. Most of these articles focused on its effect on library's exploration of open access publishing, by

claiming that the collaboration would empower or give legitimacy to library's open access publishing efforts. Additionally, one article mentioned that merging with the university press would provide extra off-site storage facilities for the library so that it would have more on-site space for its users.

How the Collaboration Would Work/Worked

All articles covered some information about how the library-press collaboration would or did work. The most important information is about the specific type of collaboration, which has already been discussed in the first part of the Findings section. Another important and frequently mentioned bit of information is about the arrangement of leading positions in the collaboration. Most of our news articles reported about the new roles for library director/dean or press director in the position, while others, especially those reporting a Type 2 collaboration (launching a new press), described hiring a director of the press as an immediate need or first priority. Additionally, many articles provided operational details of the collaboration, like how the open access would work, the disciplinary coverage of publishing, and funding of the press or collaborative project.

What Are Offered by Each Party in the Collaboration

About half of the news articles mentioned what each party would offer in this collaboration, although most of them did not go into details. To summarize, the resources offered by the presses include: expertise and experience in scholarly publishing, close relationship with authors, and space. The resources offered by the libraries include: expertise and skills in copyright, information technologies and human resources, financial support, special collections, and space for presenting titles from the press.

Brief Description of the Parties in the Collaboration

In our dataset, 19 out of 23 collected news articles provide a brief description of the university press involved in the collaboration. These descriptions provide information about the history of the press, disciplinary coverage of the press, the number of published titles, and its reputations in the field. Interestingly, only four articles include a short description of the library, mainly about its collection and organizational structure. Further, we identified two articles that briefly described the home institution of the collaboration on the number of its student population and academic programs.

Discussions

Purpose of News Articles—How to Justify the Collaboration

We argue that the most straightforward purpose of news articles on library-press collaboration is to inform the local academic community about such collaboration. Similar to public marriage announcements, the main purpose of our collected news articles is to inform the relevant community about the "marriage" of library-press collaboration. Our content analysis of the news articles demonstrates that all articles reported the critical information about the collaboration: the two parties involved in the collaboration, the time schedule of the collaboration, and how the collaboration worked or would work. With this information, the local academic community should be able to develop a basic understanding of the collaboration.

We further argue that another important purpose of these news articles is to justify the library-press collaboration to the local community. Providing rationales to such collaboration to the local academic community could help the two parties obtain support from this community, which is important for the success of the collaboration in the future. We identified several strategies the news articles used to provide justification to the library-press collaboration:

1. Emphasis on the benefits to the local community: We found that the benefit brought by the collaboration is the topic with the highest coverage across all news articles, as shown in figure 1, while the benefits to the academic community, including scholars as both the creator and user of knowledge and students as consumer of educational resources, have more coverage in the news than other types of benefits. This finding suggests news articles' effort in persuading the local academic community of the actual benefits they could receive from the collaboration.
2. Leading/following the trend in scholarly publishing: More than 65 percent of our news articles are published in or after 2015, which echoes the findings from other studies that library-press collaboration has become a trend in the scholarly publishing field. Interestingly, we observed two different depictions of the local collaboration in such a trend. On the one hand, we noticed that some news articles, particularly those published in recent years, described the collaboration as their local reaction to the trend in the field, which uses the following logic to justify their local collaboration: many other libraries and presses, particularly the leading ones, have established similar library-press collaboration, and we haven't heard any report on the negative impact of such collaboration; therefore, it should be safe and cost-effective for us to just follow our peers to create such collaboration locally, and it is also hard not to do what everyone else seems to be doing.

On the other hand, we observed several news articles that described the local collaboration as their effort to play the leading role in the scholarly publishing. These articles employed the following logic to justify their local collaboration: Our local organizations (library and/or press) have a history and/or characteristics as the leader or innovative player in the field, and this library-press collaboration would be another innovative attempt to solve the problems in scholarly publishing. By doing that, we can also take a leading role in the field by providing solid evidence of the effectiveness of the library-press collaboration to other libraries and presses.

3. Absence of challenges: Interestingly, none of our news articles discussed the potential problems or challenges of their local library-press collaboration. It is not an unexpected finding especially if we compare the news articles to the marriage announcements, where the challenges of marriage are often excluded from the announcement. Likewise, our news articles did not cover the challenges probably because first, they do not intend to lead the local academic community to question the rationales of such collaboration; and, second, the organizations involved (library/press/university) are unaware of the actual challenges of this collaboration, particularly in the debut of such collaboration.

Unbalanced Depictions between Press and Library

Our findings on the code coverage illustrate an unbalanced presentation between press and library in the news articles. As discussed earlier, the collected news articles covered much

more on "benefit for the press" and the "brief history/description of the press" than that of the library. We argue that there are two assumptions for those news articles to provide more depictions on the press side than the library.

First, news articles assume the audience of the reports—the local academic community—are unfamiliar with the press. This assumption is supported by some other literature, where they pointed out that university presses are often marginalized in the host institutions, largely because presses usually serve the academic community outside of the host institutions.[27] Consequently, the local academic community often lacks knowledge about the affiliated press. Unlike the university presses, libraries in a university focus providing services to the local community and thus are well recognized by the community. Based on the local community's unbalanced familiarity between press and library, we argue that the news articles attempted to bring the press to the center of community by providing more background information in their reports, as the press is not a subordinate but rather an indispensable party to the collaboration.

Second, news articles assume the press has encountered a much higher level of financial pressure than the library, which has also been discussed by other literature.[28] Particularly, the financial difficulty has even directly affected the long-term viability of the press, while libraries often do not have the same level of financial pressure. Therefore, these news articles spend more coverage on the benefits a press could receive from the collaboration, especially from financial perspectives; and that is also the reason we found the words "sustainability" and "sustainable" have occurred many times when the news articles reported the benefits for the press.

Limitations and Implications

One limitation of our study lies in the data collection method. As outlined in our method section, we relied on keyword searches through Google to identify news articles on library-press collaboration; however, we cannot guarantee this method would allow us to collect all relevant news articles, which means there might be several news articles that meet our inclusion/exclusion criteria but are still not included in our dataset. Another limitation is that we only analyzed the news articles released on the institution's official news sites, and there might be other ways for the institution/library/press to inform its academic community about library-press collaboration, like email announcements or brochures posted campuswide. Consequently, we cannot safely conclude that our findings can be applied to other communication methods employed by the institution/library/press to inform their academic community about the library-press collaboration.

With the limitations discussed above, this study reveals how the message of library-press collaboration has been delivered to the local academic community through content analysis of relevant news articles released through official channels. The findings would work as a prerequisite to further investigation of the academic community's perception and reaction to library-press collaboration, which would in turn impact the success of such collaboration, and we plan to further explore the actual effect of those news articles on the academic community's response of library-press collaboration through interviews with stakeholders, including librarians, press staff, and researchers. Moreover, this study will inform the academic library and university press communities about their initial purpose and expectations of such partnerships, which would help them reflect on the current status of existing collaborations

and prevent the dissolution of such partnerships. These reflections would play a critical role in improving the sustainability of the scholarly publishing field. Additionally, the findings from this study would encourage LIS educators to think about how they should depict and educate future librarians on the issues of library publishing in higher education, particularly the relationship between academic libraries and university presses.

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Phrasing in Reproducible Search Methodology: The Consequences of Straight and Curly Quotation Marks

Katie Barrick and Amy Riegelman

In recent years, various disciplines have engaged in efforts to increase research reproducibility including the adoption of replicable search methodologies. With the development of reporting checklists and guidelines for systematic reviews such as the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Statement, authors are expected to transparently report search strategies. Replicable search strategies are critical since the included studies will be screened for inclusion in some forms of evidence synthesis, which could have practice and policy implications. In cases where search strategies miss germane literature, studies are open to further criticism and can face difficulties in peer review. In some cases, search strategies that contain nonalphanumeric or special characters may not retrieve pertinent literature due to a search platform's capacity for handling said characters. In this study, we explore issues with phrasing search strategies containing curly and straight quotation marks tested in 40 search platforms. The discovery platforms were tested using quotation characters and the absence of said characters to investigate platform behavior. Searches were categorized into one of five groups: CI (curly ignored), CA (curly acknowledged), CU (curly unclear), NP (no phrases), and UC (unsupported characters). The study found that 42.5 percent of platforms ignored curly quotation marks and interpreted the test term as a phrase, 30 percent of the bibliographic platforms acknowledged curly quotations and completed the phrase search, and one platform flagged curly quotation marks as an unsupported character.

Introduction

In this article we examine search platform functionality regarding double quotation marks. Due to reporting checklists and guidelines for systematic reviews and other evidence synthesis methods (such as meta-analyses and scoping reviews), there is an expectation that authors report key details about their search. Search strategies and the search syntax affect the reproducibility of the search. In a perfect world, researchers should be able to perform a search as transparently reported in a manuscript and receive the same results used in the sample of a review. In evidence synthesis, the studies that are screened and coded are the crux of the research. If pertinent studies are not

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included, authors may face resistance as a manuscript is peer-reviewed or publicly criticized via social media. Examples of criticized reviews include a Cochrane systematic review critiqued for not including several eligible randomized trials and an entomology meta-analysis claiming decline of the entomofauna, which has been coined as insectageddon.[1] In the latter case, the researchers used the keyword declin* in a Web of Science (WoS) search that skewed the studies included in their sample. As acknowledged by many scientists including Thomas, Jones, and Hartley, using declin* "immediately biases the meta-analysis toward exaggerated estimates of decline rates, even assuming there is no underlying publication bias in the literature."[2]

The present study is relevant to the work of academic libraries because the librarian skillset is valued in evidence synthesis methodologies. The librarian role and value in supporting systematic review literature searches is well documented in Campbell and Cochrane Handbooks as well as other research networks.[3] Additionally, studies conducted by librarians have shown that librarian-involved published reviews are more reproducible.[4] The work of librarians to transparently report the search methods is necessary for either reproducing a search or replicating and extending a review. Without being provided the key details of information retrieval methods, a replication attempt is very challenging, if not impossible, as has been shown in attempted replications of empirical cancer research in Reproducibility Project: Cancer Biology.[5] Without transparently reported research methods and/or cooperation from original authors, other scholars struggle to replicate.[6]

For the purposes of this paper, we specifically studied phrasing strategies wherein curly or straight quotation marks are used. *Straight* is used to describe quotation marks (sometimes called the double quote) labeled below in table 1. Alternative names for straight quotation marks are neutral, vertical, dumb, typewriter, or American Standard Code for Information Interchange (ASCII) quotation marks. Left and right straight quotation marks are identical and both symmetrical. Alternative names for *curly* quotation marks include typographic, smart, curved, or book.

TABLE 1
Depiction and Character Codes of Straight and Curly Quotation Marks

	Curly Quotation Marks		**Straight Quotation Marks**	
	Left	Right	Left	Right
	“	”	"	"
ASCII Character Code	NA	NA	00100010	00100010
Unicode Character Code	U+201C	U+201D	U+0022	U+0022

For this study, readers may benefit from familiarity of both ASCII and Unicode, character encoding systems. ASCII has 128 characters, was originally developed in 1963, and evolved from telegraph and teleprinter computing.[7] The 128 characters are represented by seven-digit binary sequences of zeros and ones. The binary sequence for quotation marks is 00100010.[8] ASCII's limit of 128 characters is due to the 128 combinations of seven digits of zeros and ones.[9]

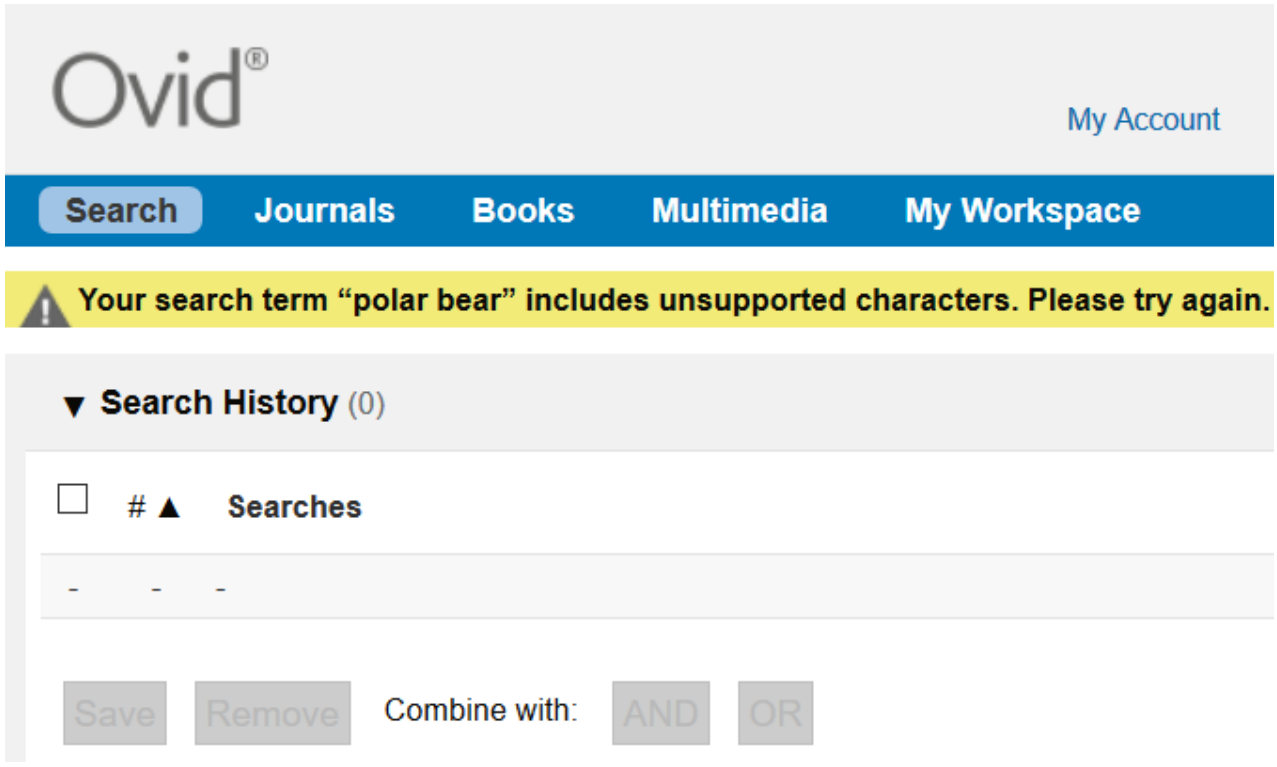
Developed in 1991, Unicode is more compatible with international writing systems and languages. Characters are assigned unique identification numbers, also known as code points. Computer operating systems then use the code points to identify characters within font files, resulting in how the characters are displayed. A dramatic difference between ASCII and Unicode is in the number of available characters. Whereas ASCII has only 128 characters, there are 137,000 Unicode characters as of May.[10]

Curly quotation marks do not exist in the ASCII character set. For the purposes of this study, it is important to recognize that, if curly quotation marks are used in a bibliographic platform that is not compatible with curly quotation marks, the search results could reflect a number of different scenarios as reflected in the results section of this manuscript.

When scholars seek peer-reviewed and grey literature on a given topic, they have many options for search platforms, and these platforms have differing search syntaxes and algorithms for displaying results that can shift over time without any indication to the user. One common search functionality is phrasing; in phrase searching, a searcher is able to seek results with the exact words in the exact order. When a searcher inputs a search phrase (such as "polar bear"), they perhaps expect the search results to list only results that contain those words in the exact order. Before engaging in this study, the authors were aware of at least one search platform, Ovid, that informs searchers that curly quotation marks are an unsupported character (see figure 1). Among other search platforms, this messaging is inconsistent or nonexistent. Assumedly, misconceptions about search input and special characters are partly due to the "blackbox" or proprietary nature of search products and the absence of technical knowledge needed to fully understand search engines.

Complicating matters, the direct input of quotation marks in Google Docs and Microsoft Word (specifically Office 365, Office Online, Office 2019, Office 2016, Office 2013, Office 2010) automatically appear as curly quotation marks. If a search strategy is developed in one of these word processors and copied/pasted into a search platform, the curly quotation marks could become problematic in that the phrasing is completely ignored or the search is flagged as having unrecognized characters.

FIGURE 1
Ovid Error Message for Unsupported Characters



Phrase search is particularly important for systematic reviews. Systematic reviews aim to collect and analyze evidence regarding a specific research question and to provide a summary of said evidence. According to guidance from the Center for Disease Control, literature searching for systematic review purposes should consider both recall and precision—"Recall (sensitivity) is defined as the number of relevant reports identified divided by the total number of relevant reports in existence. Precision (specificity) is defined as the number of relevant reports identified divided by the total number of reports identified."[11]

Some research methodologies require transparent reporting of search strategies. Examples include systematic reviews, meta-analyses and other evidence synthesis methodologies compliant with reporting guidelines and checklists such as PRISMA. These documents include guidance on what search method details need to be reported in a manuscript or supplemental materials. The guidelines often mention the need to report search strategies and search syntaxes to ensure that the search strings could be input by another user and therefore result in the search query producing the same results.

PRISMA Statement, Checklist, and Extensions

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) is intended to help authors ensure transparent and reproducible methods. In 2009 PRISMA replaced the pre-existing Quality of Reporting of Meta-analyses (QUOROM). As of January 2020, 185 journals and editorial organizations have endorsed PRISMA.[12] Adhering to PRISMA requires that authors transparently report a full search strategy for at least one database and include any limits.[13] The transparent reporting of this search strategy is often reported in the appendix of a manuscript. Depending on the search itself or stylistic preferences of the journal, the published search strategy could include either straight or curly quotation marks and may be changed from the authors' manuscript during copy editing. PRISMA indicates that the transparent search be communicated in a way that allows for it to be reproducible. This may mean that a search strategy is copied and pasted into a search platform to reproduce or replicate (such as by extension or update) the reported search methods. Examples below identify language used in PRISMA documentation relevant to the present study.

PRISMA Checklist:
"Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated."

PRISMA for Scoping Reviews (PRISMA-ScR)
Item 8:
"Report the search in a manner that allows for easy replication by others" and "Provide the entire search strategy for at least one database either in the text, a table or an Appendix"

Preferred Reporting Items for Systematic review and Meta-Analysis Searches (PRISMA-S) provides guidance for expert searching and reporting. The authors explain the need for this extension: "Each platform offers different ways of searching the databases, such as platform-specific *field codes…*, phrase searching, truncation, or searching full-text versus abstract and keyword only. Different platforms may contain additional data that are not available in the original database, such as times cited, social media impact, or additional

keywords. These differences between the platforms can have a meaningful impact on the results provided."[14] This extension advises that searchers report the "search strategies for each database and information source, copied and pasted exactly as run."[15]

Methodological Expectations of Campbell Collaboration Intervention Reviews: Reporting standards (MECCIR) are the standards for Campbell Collaboration reviews. These reporting standards indicate that reviews are required to present the search strategies "used for each database in an Appendix, including any limits and filters used, so that it could be replicated."[16]

Methodological Expectations of Cochrane Intervention Reviews (MECIR) are the standards for Cochrane reviews. C36 of the *Cochrane Handbook for Systematic Reviews of Interventions* indicates that the search strategy must be reported with enough detail to ensure that "all the searches of all the databases are reproducible."[17]

Meta-analysis of observational studies in epidemiology (MOOSE)
These standards are specifically for meta-analyses of observational studies in epidemiology. This document explains that the search methods should include the search strategy including keywords, databases, and "software used, name and version, including special features used (e.g., explosion)."[18]

Peer Review of Electronic Search Strategies (PRESS)
PRESS is a tool used to peer-review search strategies. This source reinforces that accurate reporting is needed "to ensure critical appraisal, replication, and updating.[19] This tool prompts users to consider ways in which precision could be improved, and this text includes language on phrasing: "Could precision be improved by using proximity operators (e.g., adjacent, near, within) or phrase-searching instead of AND?"[20] Users are asked to consider search syntax differences between search platforms. Specifically: "Are there any errors in system syntax; for example, the use of a truncation symbol from a different search interface?"[21]

Literature Review

While the reporting guidance offered by guidelines and checklists is valuable for consistency across various studies and potentially improved reproducibility and replicability, an exploration into the scholarly literature on special characters revealed two different themes: concern over the use of special or nonalphanumeric characters in literature and the perceived impact of these characters on citation counts.

The concern regarding the use of special characters or nonalphanumeric characters in scholarly literature and their perceived impacts on citation counts of articles may be due to issues with search retrieval. Hartley asserts the citation counts of article titles containing colons, also known as titular colonicity, are not negatively impacted by the special character, while Jamali and Nikazad reported titular colonicity does negatively impact citation counts.[22]

The use of nonalphanumeric characters in article titles is increasing, from colons to question marks.[23] Ball reported the number of life sciences articles using question marks in titles increased from 50 to 200 percent over four decades, from 1966 to 2005.[24] Similarly, Buter and

Raan examined the use of 29 nonalphanumeric characters in the titles of scientific articles and found 68 percent of the sampled WoS articles, published between 1999 and 2008, contained at least one nonalphanumeric character.[25]

The increase of nonalphanumeric characters in scholarly literature paired with developments in citation analysis research are impacted by an additional factor: the capacities of bibliographic platforms. Zhou, Tse, and Witheridge examined the robustness of Scopus and WoS using metamorphic relations and found articles with titles containing hyphens negatively impacted citation counts.[26] The results of the Zhou et al. article "[challenged the common belief that citation counts and journal impact factors (JIFs)] are reliable measures of the impact of papers and journals, as they can be distorted simply by the presence of hyphens in paper titles."[27] WoS issued a response to Zhou et al. stating that article titles are not used to link citation to source records as they are "entirely aware that this field can be ambiguous and prone to error" and claimed that hyphens within article titles do not prevent the linking between a source and a cited reference.[28] WoS also analyzed unlinked citations wherein titles contained hyphens and found issues were actually linked to citation errors and/or missing metadata.

Studies on phrase searching also identified limitations and errors. In a study conducted by Salvador-Oliván, Marco-Cuenca, and Arquero-Avilés about the impact of errors in search strategies on the quality and validity of systematic reviews, 5.8 percent of their sample included

FIGURE 2
ProQuest Automatically Correcting Spelling Error in Search String

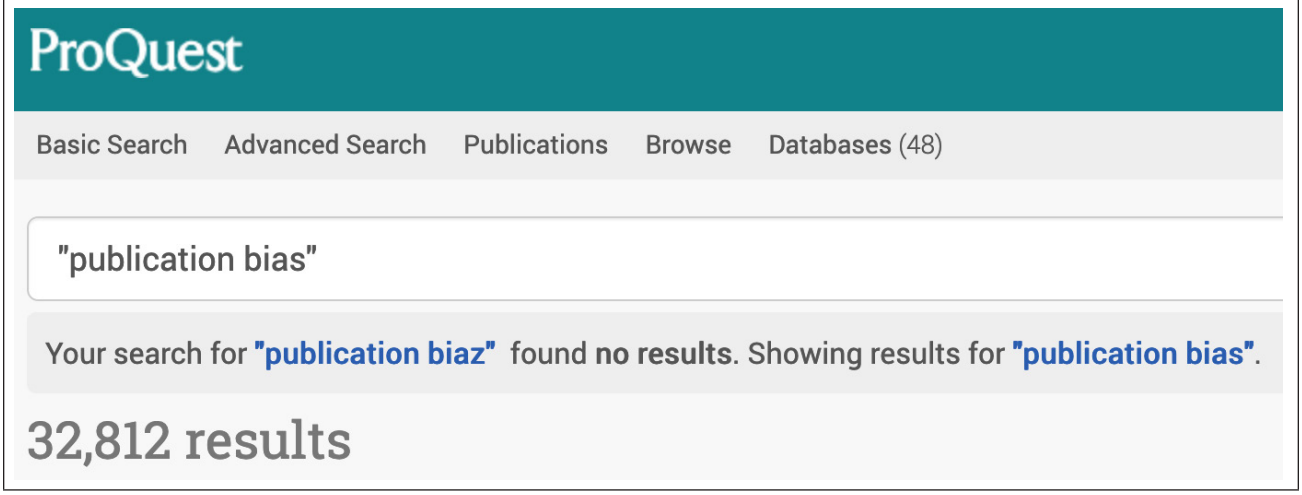
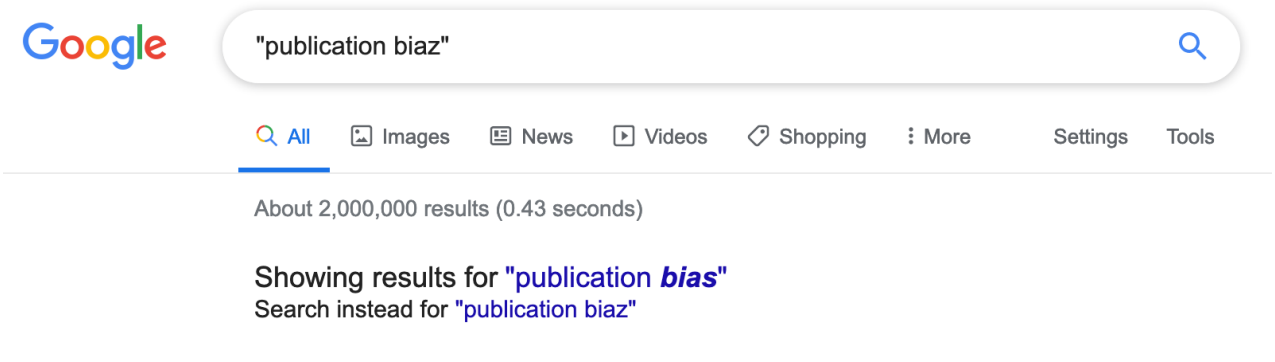


FIGURE 3
Google Automatically Correcting Spelling Error in Search String



errors in searching for phrases.[29] An example of the challenges of search platform differences revolves around search truncation in PubMed, wherein only the last term in a phrase should be truncated to retrieve items correctly. Salvador-Oliván et al. note that "it is also important to be knowledgeable regarding the principles of information retrieval in order to avoid committing basic errors and to apply these principles to the particular characteristics of the search language of the database used."[30] A gap in this type of knowledge creates the kind of concern identified in literature regarding special characters or nonalphanumeric characters in literature.

TABLE 2
Search Syntax Terms and Definitions

Terms	Definitions
input	word or words (in the form of characters) inserted into a platform's search query area
search query	word or words (in the form of characters) used to request information from a search engine
search engine results page (SERP)	display of results in an order according to an algorithm in response to query
recall (sensitivity)	"Recall (sensitivity) is defined as the number of relevant reports identified divided by the total number of relevant reports in existence." (CDC)
precision (specificity)	"Precision (specificity) is defined as the number of relevant reports identified divided by the total number of reports identified." (CDC)
query expansion	search platform attempts to improve information retrieval performance by expanding a query with one or more techniques (a couple of examples: stemming, correcting spelling errors)
lemmatization	use of an algorithm to determine the inflected words. If the base word (mouse) is used in a query, inflected forms (mice) could influence the search results
stemming	Regardless of context, the base form of terms treat other terms as synonymous if they have a common base word (for example: race, races, racecar). When a search engine stems words, they are referred to as stemmers, stemming programs, or stemming algorithms
validation	input is checked to ensure certain criteria (such as unclosed quotation marks)
sanitization	input is modified to meet validation criteria (like adding the missing quotation marks)
search syntax	could vary by search platform but generally includes a search string with fielded (examples: title, author) searches, compound queries with boolean operators (AND, OR, NOT), or phrasing
character encoding	allows a computer to interpret numbers as representing characters; a search word or words includes characters from a character set
phrase-searching	query is performed to reflect search terms in an exact order; example of precision
search truncation	a portion of a word is searched, usually with a symbol such as an asterisk, to specify the beginning of a term but retrieving variations on the term (for example, *search** retrieves sources containing the terms *search*, *searcher, searchers, searches*, and *searching*)
metamorphic testing	metamorphic testing is a software technique used to address the test oracle problem, wherein the oracle is a mechanism used to determine whether or not test outputs match expected test outcomes
metamorphic relations	relations between inputs and outputs found after metamorphic testing

Additionally, platforms have the ability to change how phrase search works when attempted by users. This ability is at times more noticeable to users such as query expansion. For example, both Google and ProQuest will correct a misspelled query such as "publication biaz" to "publication bias" and inform users of the change on the search results page.

In other cases, changes may not be as explicit or clearly communicated to users, such as updates made in ProQuest's search interface in 2010.[31] As documented by Notess, the legacy version of ProQuest would search queries with two terms (for instance: publication bias) as a phrase search by default, but the newer version made changes to how multiple term queries were performed.[32] The newer version assumes an AND operator exists between each individual term. ProQuest is just one example of a vast array of search interfaces with the ability to change syntaxes with or without any notification to the users. This reduces the transparency of the search algorithms and, by extension, may reduce the reproducibility of the study.

Methods

The purpose of this study is to examine if straight quotation marks and curly quotation marks perform differently in various search platforms. The methods for this study were preregistered on the Open Science Framework on March 27, 2019.[33] The authors compared the total search results in each platform for curly, straight, and no quotation marks. We collected data for each platform and then analyzed how the platforms responded to curly and straight quotation marks in an exact phrase search. We expected to observe one of the following outcomes for each platform:

1. The search results when using straight quotation marks and curly quotation marks were the exact same
2. There was a variance between search results when using straight quotation marks compared to using curly quotation marks
3. The use of curly quotation marks was rejected due to unsupported characters

Forty platforms were tested between March 28, 2019 and April 8, 2019. These dates were captured as search performance may vary greatly due to changes within search platforms. The sample was selected based off institutional usage statistics, grey literature platforms desirable for systematic reviews, and uniqueness. Uniqueness was part of the selection criteria because some platforms operated under the same search syntax. For example, Ovid Medline and PsycINFO via Ovid are expected to react the same to straight and curly quotation marks. The platforms selected represent indexing of literature from many different disciplines.

The following platforms were tested by the authors, and result totals were input into a spreadsheet. The full list of platforms tested is viewable in table 3. Variations of *publication bias* were used as a search query and tested three times in each platform: once using straight quotation marks, once using curly quotation marks, and once without quotation marks.

TABLE 3
Search Platform Results According to Quotation Mark Variations

Observed Platform	Results Straight	Results Curly	Results Without Quotes	Results Performance
AGRIS	16	41	41	CI
EThOS (e-theses online service)	39	384	384	CI
F1000Research	57	532	532	CI

TABLE 3
Search Platform Results According to Quotation Mark Variations

Observed Platform	Results Straight	Results Curly	Results Without Quotes	Results Performance
Gale Databases	8	16	16	CI
HathiTrust	691	839,014	839,014	CI
Hispanic American Periodicals Index (HAPI)	0	1	1	CI
OpenGrey	14	23	23	CI
OSF Preprints	43	401	401	CI
OSTI	53	384,758	384,758	CI
PeerJ Preprints	173	3,506	3,506	CI
POPLINE	71	124	124	CI
SHARE	2,461	397,533	397,533	CI
Social Science Open Access Repository	6	76	76	CI
SSRN	160	268	268	CI
Project Muse	82	6,341	6,341	CI
PubAg	403	542	542	CI
WHO Library and Information Networks for Knowledge	370	5,928	5,928	CI
arXIV	22	226	1,721	CU
Campbell Collaboration Library	19	0	32	CU
IDEAS (RePEc)	201	0	3,356	CU
INSPIRE High-Energy Physics	5	0	1,457	CU
OCLC (like WorldCat, OAIster)	2263	0	13,182	CU
Science.gov	1,429	2,208	2,411	CU
bioRxiv	187	187	5,598	CA
Cochrane Library	217	217	1,111	CA
JSTOR	3,126	3,126	101,838	CA
ERIC via Department of Education	96	96	877	CA
EBSCO Databases	24,260	24,620	25,817	CA
Google Scholar	324,000	324,000	3,950,000	CA
HeinOnline	541	541	201,100	CA
PubMed	13,716	13,716	16,111	CA
Scopus	14,810	14,810	25,736	CA
Proquest	196	196	25,639	CA
Theses Canada	16	16	43	CA
Web of Science	12,706	12,706	18,618	CA
Mathematical Physics Preprint Archive	12	12	12	NP
NCJRS	35	35	35	NP
Columbia International Affairs Online (CIAO)	1	1	1	NP
Preprints.org	10	10	10	NP
Ovid	13,663	0	13,663	UC

Results

Results were organized into five categories: CI (curly ignored), CU (curly unclear), CA (curly acknowledged), NP (no phrases), and UC (unsupported characters). Table 3 reflects the search results and assigned category.

Of the 40 bibliographic platforms tested, 17 (42.5%) platforms ignored curly quotation marks (CI) and did not interpret the test term as a phrase. Four (10%) platforms did not recognize either straight or curly quotation marks and did not recognize phrase search. One platform flagged curly quotation marks as an unsupported character. Only 12 (30%) of the bibliographic platforms acknowledged curly quotations and completed the phrase search when used. For the remaining six (15%) platforms, curly quotation marks were not treated the same as straight quotation marks, but it was unclear to the authors as to how they were read and interpreted.

The six platforms categorized as "CU" were contacted to clarify platform functionality with respect to curly quotations. Five out of the six platforms responded. Four organizations affirmed it was unclear how the search engine read and interpreted curly quotation marks and passed our query on to platform developers. The remaining organization shared that straight quotation marks were recognized, while curly quotation marks were ignored, thus resulting in terms being searched independently.

Discussion

As indicated by the results, there are consequences to using either straight or curly quotation marks in the various search interfaces. The authors have recommendations based on these findings.

Recommendations

In order for search strategies to be transparently reported and reproducible, search platforms should transparently report the search syntax as well as when or if modifications are made to the search syntax. Since search strategies abiding by evidence synthesis guidelines are required to report the date of the search, a syntax change could affect the number of search results from one day to the next. When search platforms act as a blackbox, searchers and potentially evidence-based practice and policy are at a disadvantage. Search platforms could transparently report changes similar to how software companies maintain release notes or change logs. Release notes are used to communicate product updates such as changes in functions, deprecations, or entirely new features. They are typically versioned as either major releases (such as a new feature) or minor releases (like a minor bug fix).

Librarians, information specialists, and other expert searchers performing comprehensive and transparently reported searches need to be aware of how a search query is or is not affected by different characters. Studies like this could bring more awareness to this topic. Authors and copy editors need to maintain the integrity of the search strategy as performed. For example, if a search string is reported as "publication bias," the straight quotation marks should not be modified to curly quotation marks due to journal stylistic preferences. The straight quotation marks in this instance could serve an important purpose. Changing the quotation marks from straight to curly could alter the search reproducibility.

Settings on both Google Docs and Microsoft Word could be adjusted to default to straight quotation marks. To change settings on Google Docs, select *tools, preferences* and then uncheck

Use Smart Quotes. For Microsoft Word 2016, the settings could be adjusted by selecting *Files*, *Options*, and then *Proofing* followed by *AutoCorrect*. Then in the *Replace as you type section*, input " and " in the *Replace* category followed by " and " in the *With* category. Specific to reproducible and transparent literature searching, one would first need to know that curly quotations could cause oddities in the search results, and following, they would need to take several additional steps to revert the quotation marks to straight.

Journal Stylistic Preferences

The issue is exacerbated by stylistic preferences of journals committed to style guides. Ten style guides representing different disciplines were consulted for their stance on quotation marks. While all style guides contained some direction regarding quotation marks, guidance was generally limited to usage and proper placement within the body of text. Of the 10 style guides, one guide gave clear direction on the type of quotations to use: *The Chicago Manual of Style*. *The Chicago Manual of Style* states the preference for curly quotation marks and points.

> "Published works should use directional (or 'smart') quotation marks, sometimes called typographer's or 'curly' quotation marks. These marks, which are available in any modern word processor, generally match the surrounding typeface. For a variety of reasons, including the limitations of typewriter-based keyboards and of certain software programs, these marks are often rendered incorrectly. Care must be taken that the proper mark—left or right, as the case may be—has been used in each instance."[34]

The conflict between stylistic preferences and reproducible search strategies may have consequences. Should a journal alter a search strategy that contains straight quotation marks

TABLE 4
Style Manuals and Curly/Straight Quotation Mark Preferences

Style Guide	Version Referenced	Curly/Straight Preference	Preference Guidance
The ACS Style Guide: Effective Communication of Scientific Information	3rd	None	N/A
American Medical Association	10th	None	N/A
American Psychological Association	6th	None	N/A
American Sociological Association	5th	None	N/A
Bluebook	20th	None	N/A
Chicago Manual Style	17th	Curly	CMOS Online, 6.115: "Smart" quotation marks
Council of Science Editors	8th	None	N/A
IEEE	V 11.12.18	None	N/A
Modern Language Association	8th	None	N/A
Vancouver/NLM's Citing Medicine	2nd	None	N/A

to curly quotation marks, the stylistic choice would therefore alter the reproducibility of the search. Despite the fact that many style manuals do not refer to quotation marks (see table 4), curly quotation marks are generally a desired stylistic choice made by journals.

Limitations

Our study is a snapshot in time. The dates that the searches were performed matters greatly in terms of our results due to the ability of a search platform to make significant search syntax changes and not inform searchers. The platforms may be revisited in the future to investigate how previously retrieved literature may change in the interim due to unadvertised changes to search syntaxes. The characters preferred in journals evolve over time. More could be explored regarding direct search input of various devices—that is, iOS. Stylistically, manuals change periodically as well. Our study is also focused on characters belonging to the English language and is centered on the United States. Additional research needs to be done with other languages and more inclusive of a global perspective.

Future research should study the vast array of characters as well as search platform transparency regarding search syntax. Examples of characters that should be studied include emoticons and emojis, which have started to appear in newspaper article titles. For example, the shruggy emoticon, ¯_(ツ)_/¯, appears in 11 article titles in ProQuest's U.S. Newsstream as of January 22, 2021.

Implications for Higher Education and Libraries

As indicated earlier, a search platform's capacity for handling special and nonalphanumeric characters may impact the replicability of search strategies used in systematic reviews and meta-analyses conducted by researchers and librarians. The lack of clarity regarding changes made to search syntax by platforms may further complicate the trustworthiness of and replicability of some studies, as researchers and librarians may not be aware of said changes. Further education, communication, and awareness must be brought regarding the robustness of search platform capacities and specialized search.

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Citation and Referencing Support at an Academic Library: Exploring Student and Faculty Perspectives on Authority and Effectiveness

Lydia Dawe, Jackie Stevens, Bob Hoffman, and Morgann Quilty

Libraries expend considerable time and effort in providing instructional resources to help students learn the "mechanics" of citation and referencing. However, there are few studies that examine the efficacy of these resources. Using focus group methodology, the authors explored student and faculty perspectives about citation practices through their use of the library's online referencing guide. It was found that faculty struggled to instill "real world" meaning for students around academic integrity practices, while students reported feeling confused and somewhat intimidated about the scholarly writing process. Findings reveal the importance of situating referencing within a positive, holistic approach to academic integrity that emphasizes critical thinking and student autonomy.

Introduction

At the University of Notre Dame Australia (NDA), instilling the values of academic integrity in students is a shared priority among academic faculty, library professionals, and other instructional support services.[1] NDA adopts the definition of academic integrity from the International Center for Academic Integrity: "adherence to the values of honesty, trust, fairness, respect, and responsibility" by all of those involved in scholarship.[2] Citing sources, or "referencing,"[3] is generally accepted to be a vital part of this concept. The Association of College and Research Libraries' (ACRL) *Framework for Information Literacy for Higher Education* describes the citation process as both a method of acknowledging and respecting the ideas of others ("Information Has Value") and as a way of showing diverse or competing perspectives on a topic ("Scholarship as Conversation").[4] However, the literature shows that faculty struggle to convey the importance of referencing as both an ethical concern and a practical skill to students.[5] Students frequently focus their attention on the "mechanics" of citation (the formatting of references) in an effort to avoid adverse outcomes.[6] Meanwhile, libraries strive to meet students at the point of need.

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A cursory Google search shows that many academic libraries in Australia, North America, and the UK offer a range of referencing and citation instruction, guides, and Q&A services. At NDA, referencing instruction is mostly provided by faculty within courses, with the library offering workshops in the first weeks of the semester. Beyond these sessions, students can access referencing support through the library's chat and video call services, guides, FAQs, and help desks. As evidence showed that student use of referencing support services had been increasing, we felt that it was important to explore how they were used, whether they were effective, and in what ways they might be improved.

Background

Responsibility for the provision of citation assistance and advice tended to fall to the NDA library by default rather than by directive. An inconsistent approach to citation guidance existed at the University, with some faculty taking responsibility for creating citation guides and providing associated instruction, and others leaving these duties to the library. This placed the library in a reactive position when offering support, as it became apparent that "local" variations between faculty or discipline-based citation guides resulted in confusion for students and for the library staff members assisting them. Examples and rule interpretations varied widely, and were sometimes contradictory. This made it problematic for library staff to provide authoritative advice when it appeared to be at odds with individual instructors' positions.

In an effort to improve the student experience with referencing, the library and the University's Academic Council—our primary academic committee—discussed ways to address these inconsistencies. It was concluded that the library was best positioned to act as the "authority" for the application of citation styles. The number of citation styles endorsed for use at the University was then reduced from fourteen to three, consisting of an author-date style (*American Psychological Association Publication Manual* – "APA"), a footnoting style (*Chicago Manual of Style – Notes & Bibliography* – "Chicago"), and a legal citation style (the *Australian Guide to Legal Citation* – "AGLC"). The Academic Council agreed that teaching faculty should refer questions or minor disagreements about how to apply the styles to the University library for resolution. The library was also to create an examples-based online referencing guide (henceforth referred to as the "Guide") to provide supplemental instruction.

The new Guide was published on the library website the following semester. After reviewing twelve months of usage statistics and user anecdotes, library staff generally felt confident that the Guide improved students' experience. Focus groups were used to further explore the user perspective of the citation process and determine the efficacy of the guide. We also wanted to ascertain whether the library's role as the authority in this area was clear to staff and students. The research questions for this project were:

- What are the student and faculty opinions of the Guide?
- What are the student experiences of the citation process?
- What is the faculty perspective on student citation skills?
- Who do students and faculty think should be teaching citation skills?

Literature Review

Faculty play a key role in teaching, assessing, promoting, and supporting academic integrity, but approaches and attitudes to developing student ability in this area tend to be uneven across and within institutions.[7] Mixed messages about roles and responsibilities can start at a policy

level. In their review of Australian university academic integrity documents, Bretag et al. observe that statements on accountability and punishment are largely aimed at students, with only 36 percent naming the roles of other key stakeholders (such as faculty or the university itself).[8] Academics surveyed by Löfström et al. agreed that academic integrity is an essential part of the research process and that academics have the knowledge and competence to teach it.[9] However, there was disagreement about methods (for example, should it be taught in a classroom or modeled in practice?) and principles (such as whether academic integrity is a skill or a value). Peters, Boies, and Moran's investigations describe a "haphazard" approach to teaching in which faculty assumed both active and detached roles depending on the skills being taught.[10] Michalak et al. found that faculty disagree on the very definition of plagiarism and how much emphasis it should be given in the classroom.[11] Vardi goes further, contending that, as students do not necessarily intend to deceive when making referencing errors, it is a mistake for faculty to equate those errors with cheating and plagiarism.[12]

Student understanding of and adherence to principles of academic integrity, including citation practices, is of increasing concern.[13] Greenwood et al. found that 97 percent of students considered citing sources to be important or very important in their work.[14] The large survey on academic integrity in Australian universities conducted by Bretag et al. showed that 89 percent of students agreed they received enough "information" on the topic, while 68.2 percent agreed they received enough "support and training."[15] When students are supposed to get this "support and training" is disputed. Peters and Cadieux found that 82 percent of faculty surveyed expected undergraduate students to have sufficient referencing skills *prior* to commencing their studies, whereas 94 percent of students expected referencing skills to develop *during* their studies.[16] Driven by fear of failure, students often devote most of their attention to the mechanics of citation, losing confidence in their academic literacy skills.[17] Interviews with faculty show that by being "hung up" on style, students tend to overlook the relationship between citation and credibility in academic writing.[18] However, faculty themselves are not immune from defaulting to a mechanical approach. Content analysis by Head and Eisenberg of 191 assignment handouts showed that most instructors favored a "checklist" approach that emphasized outcome (standards and grades) instead of process (researching and referencing).[19] These results show an inclination to present research as linear rather than iterative, as if students will succeed if they just follow the right steps.

Although the ACRL's *Standards for Libraries in Higher Education* includes academic integrity support as a key professional value, external perceptions of the librarian's role in its instruction vary.[20] While some faculty view collaboration with librarians as important to academic integrity instruction,[21] Ard and Ard's faculty survey on library roles revealed that "educating students about plagiarism" and "teaching citation styles" were ranked low among the library's perceived responsibilities.[22]

The ubiquitous availability of online materials and many new types of materials has made citing sources more challenging.[23] In his 2014 study, Kargbo found that 62.1 percent of undergraduates were not confident in their ability to cite sources correctly and that even those who considered themselves confident often produced inconsistent references.[24] This growing complexity of source types may be one of the reasons libraries are fielding an increase in student citation questions.[25] Another may be the unique position libraries have in students' academic life. Libraries also tend to be more accessible to students than other support services, as they are open long hours and are available at the moment of need.[26] Buranen describes

libraries as a "safe place" for students to check their citation practices, as library staff focus on supporting learning rather than investigating misconduct.[27] Although positioned at the center of the academic experience, librarians are outside the power structure of assessment and grading; they are often part of an interdisciplinary academic skills team.[28] This combination of factors may contribute to libraries becoming a de facto rather than a designated position as the authority for citation expertise.

The literature shows that libraries are expending a lot of time and attention in providing specialized citation advice, including online tutorials, guides, FAQs, instruction, and specialized one-on-one support services.[29] To measure a service's success, libraries have traditionally relied on quantitative data (door counts, circulation statistics, downloads, page views, reference desk queries); however, such data is limited in what it can reveal.[30] As Priestner and Borg state:

> …the efforts undertaken are immense and the services [libraries] deliver are fiendishly complicated to manage and sustain. Unfortunately, however, far fewer efforts are directed towards evaluating the success and efficacy of the services we provide: how well they meet user needs; whether user experience of them is good, bad, or average.[31]

Despite the ubiquity of these services, we encountered a dearth of literature regarding the evaluation of library citation guides or support materials. This study will help to fill this gap in the research and provide a foundation for further studies on citation support.

Method

Following approval of the study design by the School of Education's Research Committee, four librarians launched the investigation. In April 2016, 33 undergraduates, two postgraduates, and 14 faculty members participated in focus groups held at Notre Dame's Fremantle and Sydney campuses. In the interests of gathering the largest possible number of participants, the research team did not limit recruitment to specific disciplines, academic levels, or genders. Undergraduates were recruited through class visits by library staff and via flyers posted around the campuses; postgraduate students were contacted via email through the university's Research Office. Faculty were contacted via email through the relevant staff email lists. Tea, coffee, and pastries were offered to incentivize participation.

Focus group participation was defined by population (undergraduate, postgraduate, or faculty) and by the citation style typically used in their discipline area (APA, Chicago, or AGLC). Groups were generally made up of three to six participants, and sessions were led by a facilitator. A note-taker was also in attendance to write down impressions of the group's dynamics, record conversation topics, and note body language. The session notes were later used to verify the main points in each discussion and illustrate the nature of consensus on a topic, as well as to highlight any other nonverbal elements that indicated the importance or relevance of a point. Discussions were audiorecorded using an iPad and the Voice Record Pro app,[32] and a laptop displaying the Guide was available to consult. A set of semistructured questions were preprepared for facilitators (see appendix), though free association was encouraged to allow the group to explore topics related to citation, even if they deviated from the original questions.

Following the focus group sessions, the audio recordings were transcribed by the research team; participant responses were de-identified. The research team used NVivo 11 software[33]

to collate and analyze the transcripts. We used the steps outlined in Braun and Clarke's guide to thematic analysis to code the results.[34]

Results

In focus group studies, the unanticipated nature of participants' responses is one of the rich outcomes of the data collection. As a result, answers to the discussion questions are consolidated into broader themes.

Faculty participants conveyed the complexities of teaching critical scholarly writing skills. When and how to introduce citation mechanics was an important issue: "it is a balancing act." One faculty member felt that, if introduced too early, the "real world" implications could be overlooked. Another agreed: "the biggest challenge is to get the students to realize that this is something that needs to stay with them throughout their whole degree… and beyond, in professional practice." On the other hand, if introduced too late, the skills could not be applied properly in coursework. A few participants were concerned that messages about referencing were not reinforced properly in subsequent courses and that "a little booster" instruction would be helpful.

Citation instruction appeared to be inconsistent across undergraduate courses at our institution. Some students received several weeks of instruction, whereas others would have one assessment or in-class activity that focused on citation. Some students relied on optional workshops provided by the library. Others mentioned that academic staff did not always set a good example regarding formatting references in course materials. One student described a situation where she had copied a citation directly from the course outline and was then told her formatting was incorrect. Another student was frustrated by the inconsistent ways referencing was explained to her by various tutors. When these comments were put to academic staff in a focus group session, staff members responded, "Our own modelling…it's more than inappropriate," and "if we can't do the right thing, why should they?" Some academics admitted that not all instructors had the same level of competency with the university's chosen citation styles; as a result, they were inconsistent in their assessment standards.

Students also found that some instructors were very insistent about APA document formatting, whereas others had no set preference: "I'm doing [course name], she wants it like this, I'm doing [other course name], she wants it like this." Academic staff acknowledged the difficulty of implementing a set format for documents across the faculties: "You wouldn't get uniform acceptance. I think you'd be opening a can of worms."

In spite of comments around inconsistencies in citation instruction, student responses reflected a strong degree of trust in both library staff and their lecturers and tutors when asking for help. Both faculty and librarians were considered to have authority and expertise, though, in general, students saw librarians as having more specialized knowledge on citation than faculty: "If I was going to ask anyone I would probably ask one of the librarians," "It probably should be [librarian's name] because all the professors when they don't know something they go to [her]…I just get that impression," and "I would [go] to the lecturers, but also more to the library, because I do have [librarian]'s email I would probably ask him." This type of answer was particularly prevalent in students who had experienced librarians teaching their courses. However, one student had doubts about going to the library desk: "I have gone to the library to ask questions, but the librarian I asked wasn't familiar with [Chicago style]." Despite this, most students felt that faculty had the ultimate authority on citation styles given

that they are responsible for grading the work. One group felt differently, pointing to the official standard itself: "If everyone is looking toward the reference guide then the reference guide needs to be the authority."

Faculty varied in their views on the process of teaching and assessing citations, although it was generally agreed that it was important to be well-informed: "if you're setting the assessment rubrics… allocating the grades…that's an academic responsibility." However, it was also acknowledged that there was often not enough space in a curriculum to devote to the topic: "I wouldn't have time to give up a tutorial just for referencing." Most faculty felt that the "final say" on citation issues should lie with them as discipline experts, in consultation with the official manuals. However, librarians were frequently referred to by faculty as consultants in the process: "the library's contribution has been invaluable to my unit," or as support personnel: "I can direct [students] to [the library] if they're having trouble or needing some feedback." A few faculty were happy to defer completely to librarians: "that seems to be your area of expertise."

The focus groups proved insightful in providing the student perspective on the process of citing sources. A few undergraduate participants had learned about referencing during high school or in previous study, but most were learning for the first time in their current degree programs. First-year students found the information-overload at the start of semester particularly overwhelming: "I think that was something that, especially for the first week, was pretty intense." Some students reflected on the negative way that referencing was introduced to them:

> You always get the same talk: [if] you don't reference, you're plagiarizing. If you're plagiarizing, we find you, you'll have to repeat the unit. It's always the same. They're doing it for a reason because they're trying to emphasize [that] if you don't do it properly, you're not going to pass Uni. But as a first-year student, you're sitting there going, "I'm the only person in this class. I'm going to die."

Most of the students interviewed said that they would "reference as [they] go," usually by jotting down notes about sources at key points in the document. A few students said they would wait until the end of assignments to add references. Some students complained that they were not provided with a clear process for incorporating references into their workflow: "I learned to after…but [course instructors] didn't tell you ways to reference. So my first assignment I'm like drowning in paper and I've highlighted things and I'm like 'AARGH!'" Others were more successful in their workflows as they had experience from previous degrees, had participated in library classes, or had taken an academic preparation course or workshop.

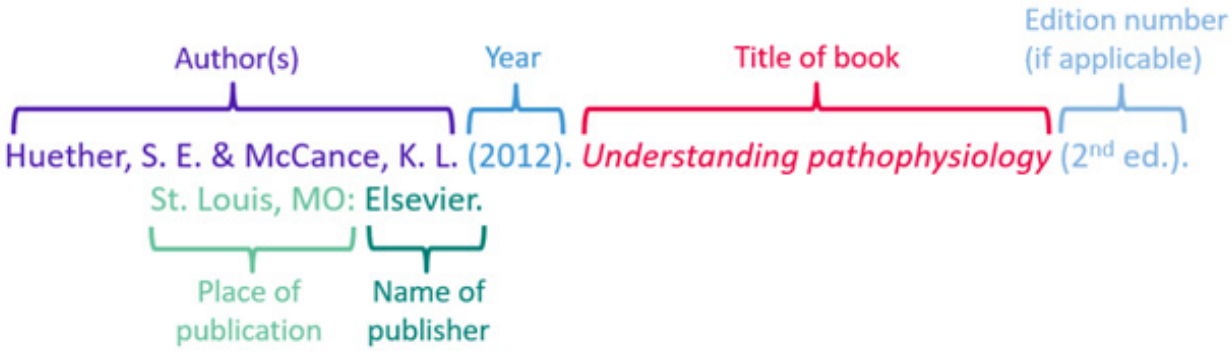
Many students (and some faculty) declared a preference for having a printed copy of the Quick Guide (an abridged, printable version of the full guide provided by the library) on hand as they worked. As a result, some suggested that the entire NDA guide be available in a print-friendly format: "I think that should be there for people who do like having a hard copy," or "something I can print out and just have on hand."

While student comments revealed that their attitudes and practices around citing sources was varied, faculty responses demonstrated the underlying complexity of their role in instructing and assessing students' understanding and skills. All participants in the faculty focus groups were involved in teaching or grading citations in either undergraduate or postgraduate

work, though there was a mix of assessment approaches. For some, grading referencing was specific (generally in first-year undergraduate courses), and others assessed student practice in general. We first asked faculty to describe their experiences in assessing student work. One participant found that, while some students did well in the technical aspects of citations, they faltered when it came to incorporating research into their work: "[students make] broad statements without supporting it with citation literature." Another participant agreed, adding: "they see [referencing] as a formality, a hoop to jump through…[instead of] 'No, this is about you critically evaluating the research that you read and knowing what it's actually saying.'" One faculty member, who worked in an academic advisory role, had also witnessed students' mechanical approach: "I don't think they have an understanding of their voice and then [using] evidence to support their voice. I think they see referencing as just getting the bit in italics that needs to be in italics. I think when we talk referencing, those students see mechanics." She also described students coming to her with completed essay drafts that contained no references, with the student assuring her that the sources would be "added in after."

One of the original study questions was to assess users' experience with the guide. Overall feedback from all participants was positive, which affirmed that the approach the library had taken was seen to be broadly valued by the community. Both faculty and students appreciated the number and variety of examples that the online format allowed. Some faculty mentioned that students often struggled with how to classify certain sources and required guidance in locating examples: "they're not always sure whether it comes under web source or a couple of different slots." Several students confirmed that common sources (such as books and journals) were easily found, but web sources proved more challenging: "like a website that refuses to be a website and it's actually a journal article or something like that." Several participants mentioned how much they appreciated the multicolored sample citation placed at the top of each page, which illustrated the components of a reference (see figure 1). This tallies with Van Note Chism and Weerakoon's findings that students find color coding more "user friendly" and "efficient" to use than plain print.[35]

FIGURE 1
Multicolored APA 6th Edition Sample Citation



Each group was asked if they used the guides' search function to find information. Several participants mentioned that search boxes can be problematic "if you don't know what you're looking for." Other participants suggested that the search box contain suggestions that appeared as the user typed, similar to Google.

Finding information on secondary source citations appeared to be of pressing concern to students. APA's *Publication Manual* does not encourage the practice of using secondary source citations, so the library had made this information less prominent in the guide. Several academics were quite firmly against providing instructions: "I tell them to find the original source and if they absolutely can't, not to [use it as a] reference." However, others acknowledged the "shades of grey" in the situation, especially when important sources are locked behind subscription paywalls or unavailable locally in print. Students struggled to identify a likely location in the guide for this information and often did not have a word or phrase to describe this kind of citation, making it difficult to search for.

In creating the guide, the library aimed to match the language of the style manuals for consistency's sake. However, a few issues with the language were mentioned, including the words "parentheses" ("we all mean brackets"), "secondary source citations" ("I wouldn't know that phrase"), and "multimedia" ("not that hard a word, but—I don't know if I would necessarily think of it"). As some of the terms are not self-explanatory, participants suggested that more explanation be provided in the guide.

Faculty members reinforced the importance of the university providing a well-vetted in-house citation guide for students to use rather than having them browse manuals or the internet: "[students] don't know how to interrogate the quality of that information to know if it's current and accurate." Although most students used NDA's citation guide, they also used guides from other universities. The library's two citation management tools, EndNote and RefWorks, were mentioned by students as helpful but fallible: "you've got to check them…minor mistakes can come through." Faculty tended to caution students against using these tools before they had a solid understanding of a citation style: "I've corrected [students'] references and they say 'but I used EndNote!' […] obviously it's not doing it correctly. You still need to know [how to reference]."

Another key source of citation assistance was the library's "AskUs" service (LibAnswers by Springshare), in which users could either submit a question to library staff for a response or search the knowledge bank of answers to existing questions. However, it appeared that this service was not visible enough to students, as several students called for a "question and answer" service for citation questions in particular. One student even proposed the model of the AskUs service without knowing that it already existed:

> [The library should have] an "ask question" thing on the website…You put it up there and then the library could go "look, this is how you do it." Like you know how you go to Yahoo Questions or whatever? You type in the question and it already comes up, someone has already answered it.

The library also offered video tutorials on the mechanics of citation on the website. Several students were aware of these, but there were mixed responses regarding their usefulness. Interestingly, some students considered the video format cumbersome in terms of access ("sometimes I'm in the middle of class or in the library and I don't have my headphones") and time ("I like videos but I don't think I would watch the whole thing") even though the videos were generally only 3 minutes long.

Discussion

The main limitation of this study was the small sample size and lack of participant diversity.

The students were mostly undergraduates, there were very few faculty represented, and the majority were from the Fremantle campus. However, the focus group dynamics were positive and responsive for the most part, and the format allowed participants to bring forth issues that were clearly important to their experiences in learning and teaching citation methods at the university.

The aim of this project was to gather faculty and student opinions of the library's citation guide, as well as to gain insight into the teaching and learning process. The library team also sought to determine who participants felt was the "authority" in providing citation support and instruction. We feel that our project achieved these aims, and the more meaningful findings are outlined in the themes below. However, we gained less information than expected regarding the guide's layout, content, and structure, as well as the overall student user experience. We found instead that participants preferred to discuss the bigger-picture issues surrounding citations and scholarly writing skills—the way it is contextualized, taught, and assessed. We decided that, in future, live user testing on a revised prototype guide, as recommended by usability experts Steve Krug and Andy Priestner,[36] would yield more specific results in this area.

Many academics agree that students need to understand more than just the rules surrounding academic integrity; ethics, standards, and values are key parts of the conversation.[37] However, as research tends to focus on the lack or absence of academic integrity, there is a tendency for faculty to frame the conversation in a negative way.[38] It appears that the ways citation skills were contextualized, taught, and graded at NDA created a stressful situation for the students we questioned. Positioning citation skills alongside punitive outcomes (such as accusations of plagiarism) created unfavorable associations with academic literacy from the start. Ominous lectures about the consequences of plagiarism were particularly troubling to first-year students. Gravett and Kinchin conclude that anxiety from "scare speeches" results in students losing a sense of self-motivation and agency.[39] Sefcik et al. suggest trying a more holistic approach to academic integrity that encourages students to develop their own values, principles, and beliefs, creating a sense of autonomy and avoiding a "culture of fear."[40]

First-year undergraduates are often unfamiliar with the types of sources they are expected to use at university.[41] Most of our student participants were new to referencing and had no sense of what process to follow. Seemingly as a result, students become preoccupied with citation mechanics. To faculty participants, it appears that students view referencing as an unpleasant formality, separate from the spheres of evaluation or argument. There are a number of ways to possibly address this issue. Vardi suggests removing citation skills from the context of plagiarism, spending less time on mechanics, and emphasizing the relationships among referencing, critical thinking, and analysis.[42] Margolin and Hayden's undergraduate "Research Toolkit" website presents the research process in a nonlinear fashion and guides students toward more conceptual models of inquiry.[43] The role for the NDA Library in citation and referencing instruction remains ambiguous. In the literature review *Positioning the Academic Library within the Institution*, John Cox reflects that academic libraries are increasingly expected to "give up territory, recognize interdependencies and embrace ambiguity."[44] This phrase reflects the challenges that NDA Library faces with citation instruction. Both student and faculty participants reported inconsistencies across university courses. Possible reasons for this may include curriculum space, assumptions about prior instruction, and differing opinions on the importance of the topic. As this issue arose unprompted in all the student focus groups, it may be indicative of a widespread problem. Students appeared bewildered

and stressed by the differences they observed as they moved between classes. When citation instruction was present, it tended to be added to the already packed first-year curriculum, with emphasis tapering off in subsequent years. While the library has streamlined matters by standardizing the "how" (mechanics) of referencing, it appears that messages about the "why" (academic values and "real world" applications) can become complicated by the circumstances of the messengers.[45]

Our findings also suggest that students still struggle to categorize document types. Student participants became frustrated when citing less conventional information sources, or, as one student put it, "a website that refuses to be a website." This echoes studies that reveal persistent confusion about how to define and evaluate online information sources.[46] As a result, clear instruction about information structures, characteristics, and authorship (as described by the ACRL *Framework*[47]) remains essential when teaching students citation skills. We also found no consensus among faculty or students on who was perceived to be the "authority" on the application of citation standards. However, it was heartening to see that both students and faculty held the library in high esteem, with strong praise for the citation expertise of librarians. In the time since our study was conducted, the library has been increasingly involved in executive-level conversations and projects and continues to advocate for a more unified approach to academic integrity across the university. To maintain our reputation for citation expertise, the library will also continue to promote and further develop our referencing support services to all stakeholders. There were several useful participant suggestions about the guide and citation and referencing support services that the library welcomed. Table 1 below summarizes the main points made and how the library intends to respond to them.

TABLE 1
Participant Suggestions for Citation and Referencing Support Services

Participant Comment	Library Response
Make a long-form hard copy of the guide available	Creation of a more comprehensive printable version of the guide
Make a "question and answer" service available; provide prompts when typing in the search box	Increase promotion and visibility of the library's AskUs knowledge bank
Make "secondary source citation" information more obvious	Provide examples on each relevant page of the guide, along with a statement describing appropriate ways to use the method.
Clarify language within the guide	Choose more explicit terms such as "secondary citation (source within a source)" and "Video and Audio"
Fix access issues with video tutorials	Add captions to all video tutorials
Improve the user experiences of staff support at service desks	Increase efforts to train staff to ensure positive user experiences

Conclusion

Citation and referencing instruction and support provide an essential foundation for students who are beginning their academic journey. The library's move to become the designated authority on citation styles arose from the need to improve the user experience in this area. The study outlined in this paper was designed to give the library and wider university

community an insight into the experience of staff and students who had engaged with the online citation guide and investigate whether the library was meeting its remit to actively and accurately support students in using the three endorsed citation styles. The findings from this study highlighted the considerable challenges experienced by faculty and students when teaching and learning citation skills. Results indicate that students motivated by fear of adverse outcomes will divert their attention to mechanical aspects while losing sight of the logical and ethical reasons for citing sources. Librarians and faculty fulfill complementary roles in providing referencing support. Positive messages about academic integrity along with clear, consistent referencing support materials are important components in nurturing confident learners. Just as referencing is an iterative process, so is ensuring that a referencing guide is effective. Future studies will involve live usability testing to better understand the needs of our users.

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Notes

1. In Australian higher education institutions, librarians hold nonfaculty professional status. This paper therefore uses the term "faculty" for academic educators and "library professionals" to describe those employed in an academic library.

2. International Center for Academic Integrity, *The Fundamental Values of Academic Integrity* (2017), accessed November 8, 2020, https://www.academicintegrity.org/wp-content/uploads/2017/12/Fundamental-Values-2014.pdf. 16; The University of Notre Dame Australia, *Policy: Academic Integrity (Students)* (2020), accessed November 8, 2020, https://www.notredame.edu.au/__data/assets/pdf_file/0012/2037/POLICY-Student-Academic-Integrity.pdf. 6.

3. "Referencing" is used as a gerund in this paper; it is frequently used for citation/citing in academic parlance in Australia and the United Kingdom. Referencing and citation/citing are used in this paper interchangeably.

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26. Park, Mardis, and Ury, "I've Lost My Identity."

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Developing the Informed Learning Scale: Measuring Information Literacy in Higher Education

Michael Flierl, Clarence Maybee, and Emily Bonem

Academic libraries continue to face challenges communicating their value. One dimension of this challenge is in demonstrating how information literacy relates to important measures of student learning, like course grades and motivation. This study documents the development and exploratory pilot testing of the Informed Learning scale—which is intended to produce data for institutional reporting purposes at scale in alignment with contemporary IL theory, specifically Informed Learning. Preliminary findings include small correlations between the Informed Learning scale and course grades and moderate correlations between the scale and student perceptions of their learning climate and self-determined motivation.

Introduction

Documenting and communicating the value of academic libraries is an essential challenge of the profession.[1] Part of this challenge lies in how Information Literacy (IL) supports the teaching and learning missions of colleges and universities. Using self-perception data from scales measuring IL has been a common and useful approach to demonstrating the impact of IL educational efforts. Self-perception scales provide a solution to the formidable challenge of scalability—how to measure IL across thousands of students. However, many extant IL scales are based in the now-rescinded ACRL IL *Standards*.[2]

Theoretical and practical problems with the *Standards* are well documented.[3] The *Standards* have been described as treating research as a linear, reductive process rather than iterative and dynamic,[4] lacking transferability and ignoring disciplinary aspects of IL,[5] and promoting a deficit-model of instruction.[6] There is a clear need to measure IL in accordance with contemporary theoretical developments in IL, such as sociocultural,[7] critical,[8] or Informed Learning[9] approaches, which accentuate the contextual nature of IL as many IL assessment instruments currently in use rely on a standards-based conception of IL. Results from a 2017 systematic review indicate that the two most popular IL instruments measuring students' IL self-efficacy,

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ILSES and IL-HUMASS, are both based in a standards-based conception of IL.[10] Informed Learning, the theory that underpins the scale that is the focus of this research, emphasizes the role of engaging with information within the learning process.[11] Seeking data on how students use information or the library's resources is useful and important for librarians and administrators, as this provides evidence for how academic libraries support desired student outcomes like improved general education performance and retention.[12] However, there are additional opportunities to learn about the role IL plays in student learning by examining the relationship between IL, course grades, and other variables related to student learning.

The authors present a new IL scale with two purposes in mind. The first purpose is to create an instrument where IL is viewed as relational and contextually dependent (as opposed to a skills-based conception not taking into account disciplinary and other factors), as aligned with an Informed Learning theoretical approach. In this new instrument, IL is related to learning, and the knowledge or practices to be learned are drawn from a disciplinary context, such as engineering, or history. The second purpose is to pilot the collection of IL data in such a way that will correlate with other important institutional measures of student learning, including course grade, student motivation, and learning climate. This paper will describe how and why the Informed Learning scale was developed as well as sharing preliminary findings to demonstrate the value of such a scale.

Problem Statement

Existing scales for measuring IL are primarily grounded in skills-based conceptualizations of IL.[13] Such scales were primarily created during a time when the ACRL (2000) *Information Literacy Competency Standards for Higher Education* guided IL work in academic libraries. Rescinded in 2016, the five standards describe IL as: 1) determining needed information; 2) accessing information efficiently; 3) evaluating information; 4) using information effectively; and 5) using information ethically and legally. The IL scales developed during this time tend to measure discrete skills that align with the *Standards*, such as the ability to frame an information need or evaluate an information source. These kinds of measures align with the data-reporting practices that emerged in the 1980s, which marked the beginning of what Drabinski refers to as the "time of compliance" in which educational institutions provided data to prove they were meeting outcomes to accrediting agencies and funding bodies.[14]

While there is value in collecting data related to learners' abilities to perform basic information skills, it is difficult to find efforts in library and information science literature to examine data related to more complex theoretical understandings of IL. For example, Informed Learning, the theoretical perspective on IL developed by Christine Bruce (used in this research), views IL as part of the process of learning.[15] An Informed Learning perspective views IL within a larger theoretical context that cannot be examined using scales designed only to measure specific information skills, but rather requires examining how information is used in relationship to disciplinary learning. Skills-based IL scales are not sufficient to measure IL within the learning process.

Audiences external to academic libraries are often concerned with evidence of student learning and success for large numbers of students. Developing instruments that reveal how IL data relates to student outcomes and success metrics may more closely align with data considered meaningful by administrators, accrediting agencies, and funding bodies.[16] To address these needs, the current exploratory research aims to develop a scale that produces data

for institutional reporting purposes at scale, but also provides data more in alignment with contemporary theoretical developments in IL—providing insight concerning how students understand IL in the context of learning within undergraduate courses.

Literature Review

Introduced by Zurkowski in 1974, the academic library community adopted the concept of information literacy as necessary for developing the U.S. workforce, framing it as a set of skills needed by college students for academic and professional success.[17] While early views of IL were behaviorist, a number of process models were created that were grounded in cognitivist theory, especially constructivism. One of the most influential models in higher education is the Information Search Process (ISP) developed by Kuhlthau (1993), which takes a constructivist approach that considers students' affective states as they engage in a research process. Views of IL as a set of skills or a process underpinned the development of the ACRL *Standards*.[18] In turn, the *Standards* framed the development of several instruments used to measure IL in higher education. However, new approaches have emerged over the last several decades that ground IL using specific theoretical lenses, such as critical, sociocultural, and Informed Learning.[19] Nevertheless, extant instruments for measuring IL remain largely associated with the now rescinded ACRL *Standards*.[20]

Instruments used to measure learners' abilities to use information in various contexts tend to rely on self-reported data.[21] A recent systematic review of IL scales found 45 studies reporting on 22 scales.[22] Such instruments include: IL-HUMASS, Project SAILS, the IL Self-Efficacy Scale (ILSES), B-TILED, and the IL Test (ILT). While some of these instruments may draw from additional theoretical foundations, such as IL-HUMASS drawing from the Society of College, National and University Libraries (SCONUL)—and ILSES from the Big 6 skills, Seven Pillars, and ANCIL standards—all of these measures are primarily based on the ACRL *Standards*. Additional instruments based on the ACRL *Standards* include the IL Test for Higher Education,[23] Locally Developed IL Test,[24] the Virtual Orientation Seminars IL Assessment (VOILA),[25] and the Information Skills Survey.[26]

It should be noted that some measures use performance and behavioral data or evidence of cognitive development to assess the mastery of IL skills to bypass issues typically associated with self-reported data, such as students overreporting their abilities.[27] Multiple-choice tests,[28] information search tasks,[29] and rubrics analyzing student work[30] are some examples of these types of measures. Concept maps, portfolios, and many other forms of measuring student work have been used to measure students' IL abilities as well.[31]

A number of different conceptualizations of IL are being adopted in higher education that offer a different definition of IL than outlined in the *Standards*.[32] Based on work by Mackey and Jacobson,[33] the ACRL *Framework for Information Literacy for Higher Education* argues that IL is a metaliteracy, a composite of "behavioral, affective, cognitive, and metacognitive" engagements within an "information ecosystem."[34] Metacognition enables learners to analyze their own cognitive processes, such as how they understand information skills and processes. The *Framework* conceptualizes IL more as "knowledge-based learning and discovery" than a demonstrable set of skills.[35] New instruments are being developed that aim to measure the concepts outlined in the *Framework*. For instance, the Threshold Achievement Test contains disposition items to indicate "students' willingness to consistently apply the skills they have learned in one setting to novel problems in new settings."[36]

Other emerging approaches link IL to the context in which information is being used. Lloyd outlines a sociocultural approach to IL in which information practices are considered part of a larger "practice" within a discipline or professional setting—such as enthusiast car restorers and renal nurses.[37] In contrast to focusing on the context of a practice, Informed Learning emphasizes the learning environment as the context of IL.[38] Informed Learning defines learning as experiencing changes in awareness related to both using information and disciplinary content. Adopting an Informed Learning approach in higher education emphasizes students learning to use information within a discipline—which in turn better prepares students to use information to learn in their personal and professional lives outside of educational settings. Three principles guide the development of Informed Learning pedagogy:

1. Build on learners' previous Informed Learning experiences;
2. Promote simultaneous learning about disciplinary content and the information-using process;
3. Enable learners to experience using information and disciplinary content in new ways.[39]

While it is being implemented as an approach to IL education in higher education, questions remain about how to measure the results of applying an Informed Learning approach.[40] The situated and context-dependent nature of Informed Learning make answering fundamental questions about how students use information difficult. Comparable to other theoretically grounded approaches, measuring IL from an Informed Learning perspective requires a different approach from measuring discernable skills, practices, and dispositions, as instruments based in the *Standards* or *Framework* attempt to do. An Informed Learning approach to IL is less concerned about specific skills that could be measured in an assignment than with how students describe their experiences using information in a disciplinary context. Therefore, to investigate IL from an Informed Learning lens, we need to evaluate student perceptions of information use in a disciplinary context. Measuring IL from a context-dependent theoretical lens at scale, across disciplines, presents further challenges. Accordingly, the Informed Learning scale attempts to discern undergraduate students' self-perceptions of their ability to use information to learn in various disciplinary contexts.

Methods

Initial Question Design

The purpose of this Informed Learning scale is to measure student perceptions of using information as it relates to learning in a course. Therefore,12 of the initial set of 16 statements deployed in the scale (shown in table 1) were created by drawing key concepts from the three core principles of the Informed Learning model.[41] Previous IL research conducted by the research team informed the other four statements used in the initial scale.[42]

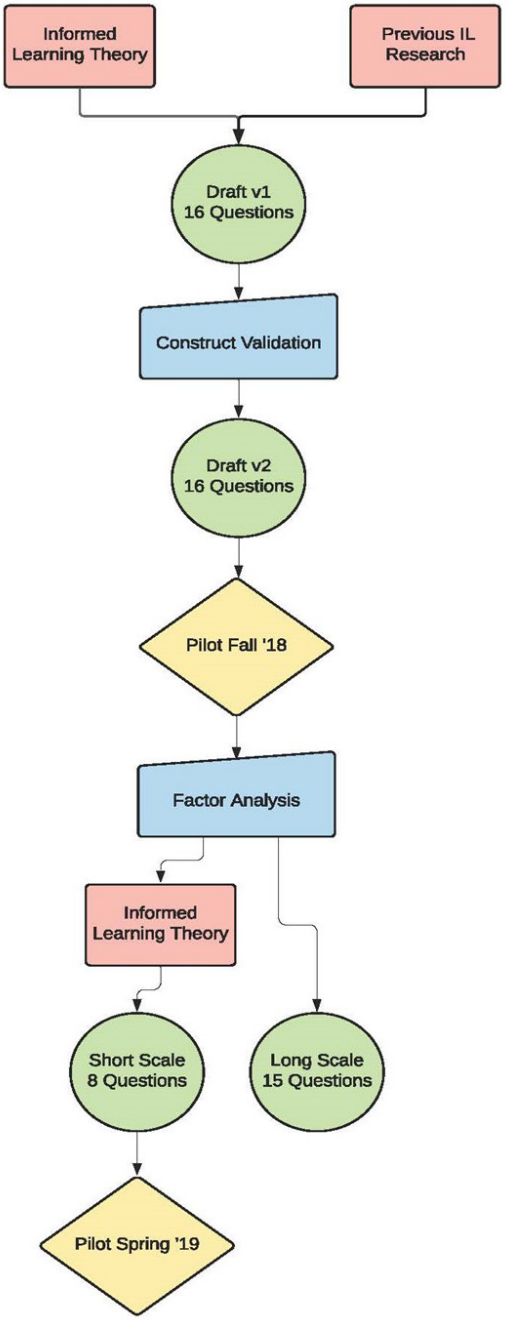
The 12 statements that were part of the initial scale that related to Informed Learning were in three sets of four statements each evaluated on a 7-point Likert scale ranging from 1 ("Strongly Disagree") to 7 ("Strongly Agree"). Each of the three sets aligned with one of the core principles of Informed Learning.[43] For example, the statement "I build upon my previous experiences of using information to learn subject content in this course" relates to the first core principle that focuses on *building on learners' previous Informed Learning experiences.* The statement "I believe I can learn in this course by using information" relates to the second principle, which emphasizes *simultaneous learning about disciplinary content and the information-using process.* The statement "My instructor encourages me to use information in new ways

to complete assignments" relates to the third principle of *enabling learners to experience using information and disciplinary content in new ways.* Originally, these three sets of four statements were intended to create subscales to measure different aspects of student perceptions about their ability to use information to learn disciplinary content.

To allow for comparison with the part of the initial scale related to Informed Learning, four statements were also included that were grounded in a local description of IL derived from the AACU Value Rubric for IL, which emphasizes five skills: 1) determining a need, 2) access, 3) evaluating, 4) effectively using, and 5) ethical use of information.[44] The AACU Value Rubric was adapted to define IL for Purdue University's Core Curriculum, so these four questions are particularly important in the authors' local context.[45]

Drawn from previous research, the four statements that were included in the scale were intended to measure student perceptions of using information generally; that is to say, not in relationship to learning. For example, one statement focused on the importance of evaluating information within the course, while another emphasized feeling confident in one's "ability to synthesize information from different sources." The inclusion of these statements was intended to provide data to show how students perceived using information generally and how that compared to their perceptions of using information to learn.

FIGURE 1
Informed Learning Scale Development



Expert Validation

To determine content validity for the scale, a team of five IL experts provided feedback on the initial 16 questions. The five experts were selected for the quality and quantity of their IL-related scholarship, as well as representing diverse theoretical perspectives on IL. The experts were asked to rate each item on a 3-point scale—either "This item is valid," "This item has some validity," or "This item is not valid." The survey also included an open-ended text box so that qualitative feedback and suggestions could be collected for each question. A final prompt asked the five experts to share questions and comments as an opportunity to provide holistic feedback about the scale overall. Wording was modified to address the expert's qualitative feedback provided on individual questions as well as the final open-ended prompt. All questions were rated as being valid, or having some validity, by at least four of the five experts.

Data Collection and Participants

Data were collected at a large, public, research-intensive university in the United States across two semesters (fall 2018 and spring 2019) from undergraduate students and the registrar. Student data were collected through end-of-semester student-perception surveys sent to all students enrolled in a course that had completed a large-scale course redesign program, Instruction Matters: Purdue Academic Course Transformation (IMPACT),[46] in which faculty and staff from the Purdue University Libraries, the Center for Instructional Excellence, and other units at Purdue participate. Levesque-Bristol et al. describe how IMPACT data are collected and compared with various information related to student performance, including course grades, converting typical letter grades to a 4-point scale, and course failure or drop (known as DFW) rates (2019).[47] The authors currently or have served in leadership positions in IMPACT and accordingly wanted to investigate how students who completed the program were using information to learn in their courses. Drawing from this sample met an institutional need to show the libraries' value for participating in IMPACT and also provided access to a larger and more diverse dataset than would have been possible otherwise. Informed Learning is a part of IMPACT's curricula, so this instrument was created, in part, to measure changes in student perceptions about how information is used to learn in their course. There were a total of 18,927 student-perception surveys sent out to students enrolled in 151 courses across the two semesters, and 7,992 surveys were completed by 6,791 unique students (42% response rate).

Measures

The student-perception surveys included the Learning Climate Questionnaire,[48] the Situational Motivation Scale,[49] students' Basic Psychological Need Satisfaction and Frustration Scale,[50] and the newly created Informed Learning scale. During the fall 2018 semester, the full 16-item Informed Learning scale was used. Based on initial analyses from fall 2018, a short version of the Informed Learning scale, consisting of 8 items, was used in spring 2019. University records were accessed to provide student demographics and numerical course grade data for the students who participated in the survey in either semester.

Factor Analysis

It is common to use factor analysis to analyze data for exploratory scales in library and information science research.[51] Factor analysis is useful with survey data to model the interrelationships between variables with the aim to reduce the number of variables by identifying underlying factors. Factor analysis can also provide some support for the construct validity of the scale by providing evidence that the scale is measuring the correct underlying constructs. To determine whether a factor analysis was appropriate for the Informed Learning scale, several well-recognized criteria were assessed using the fall 2018 data with the Kaiser-Meyer-Olkin (KMO) and Bartlett's tests. Both tests provide insight as to whether data are appropriate for a factor analysis—specifically if multiple variables can be meaningfully reduced into a fewer number of factors. The KMO measure of sampling adequacy was .96, well above the recommended value of .6. The KMO test examines the proportion of variance among variables that may be shared variance to determine whether there may be distinct underlying factors. Statements that have a lot of shared variance (such as I like dogs and I like puppies) are likely measuring the same construct (enjoying dogs) whereas two statements that have low shared variance (such as I like dogs and I like kittens) are likely measuring separate constructs. Bartlett's test

of sphericity was also significant ($\chi 2$ (120) = 46929.69, $p < .01$) indicating that the variables are not completely unrelated. Finally, correlations were above .30 for all of the Informed Learning scale questions except one ("I think that learning subject content and using information are the same thing"); that item had correlations ranging from .21 to .40 but was kept in the factor analysis due to theoretical considerations. However, it is plausible that this question is more opinion-based than other questions, which tended to focus on students' opportunities or abilities related to using information to learn, and the item was eventually excluded from the final scale.

An exploratory factor analysis using a principal-axis factor extraction was then conducted to investigate the number of constructs measured in the scale in an effort to find the fewest number of factors that can account for the variance expressed in the data. Two factors were extracted with eigenvalues over 1.00—indicating that these factors explain more than a single variable; however, since all of the items that loaded onto the second factor had higher loadings on the first factor, only one factor will be discussed. This provides evidence that the Informed Learning Scale is predominantly measuring one phenomenon or experience as expressed in

TABLE 1
Factor Analysis Constructs

	Factor Loading	
Item	**1**	**2**
Factor 1: Informed Learning (α = .962)		
16. I feel confident in my ability to use information to learn subject content in this course.	.85	–.14
9. I build upon my previous experiences of using information to learn subject content in this course.	.84	.07
10. I think my previous experiences of using information support my learning subject content in this course.	.84	.06
2. I understand how my previous experiences of using information support my learning subject content in this course.	.83	.14
12. My instructor encourages me to use information for specific purposes.	.82	.11
14. I feel confident in my ability to use information in this course.	.80	–.002
11. I will be able to use information to learn in my future course work.	.80	.02
5. I believe I can learn in this course by using information.	.80	.15
15. My instructor encourages me to use information in new ways to complete assignments.	.78	.08
1. My instructor encourages me to learn subject content by using information.	.77	.14
13. When I consider my life after college, I feel confident in my ability to learn when engaging with information sources.	.77	–.49
3. I believe it is important for me to carefully evaluate the information I use in this course.	.77	.15
8. I believe it is important for me to learn to use information.	.77	–.08
7. For this course my instructor encourages me to use my prior experience of using information.	.76	.17
6. I feel confident in my ability to synthesize information from different sources.	.76	–.48
4. I think that learning subject content and using information are the same thing.	.37	.17
Note: The short scale is composed of the bolded items.		

the survey. One item was removed (question #4 on the Informed Learning long scale) as it did not load onto any factors. The single factor explained 60.39 percent of the variance. Loadings of variables on factors are shown in table 1.

Reliability Analysis

Cronbach's alpha reliability coefficient was calculated to determine the internal consistency of the Informed Learning scale. High levels of reliability indicate that participants are answering scale items similarly, indicating that there is a common, underlying factor for the scale. With the 15 items identified by the factor analysis, the reliability was high for all items (α = .962). The 8-item shortened version of the scale also demonstrated a high level of reliability (α = .928).

Findings

Correlation Matrix

To determine how the Informed Learning scale related to other variables associated with student learning, we examined correlations between the Informed Learning scale and the other measures in the student perceptions survey using the spring 2019 data (see table 2). The short version of the Informed Learning scale showed moderate correlations with student perceptions of the learning climate (r = .620, p <.001) and their self-determined motivation (r = .615, p <.001). There was also a small correlation between the Informed Learning scale and student achievement, as measured by overall course grades (r = .191, p <.001). These findings suggest that the way students perceive how they use information to learn disciplinary content may be an important link to how they perceive their classroom, how motivated they are to learn, and, ultimately, how they perform on graded assessments.

TABLE 2
Correlation Coefficients

This table shows the correlation coefficients between the Informed Learning scale and other student outcomes including learning climate, student motivation, and academic performance as measured by final grades.

	IL Scale	Learning Climate	Self-Determined Motivation	Academic Performance (Final Grade)
Informed Learning Scale	1.00			
Learning Climate	.620**	1.00		
Self-Determined Motivation	.615**	.526**	1.00	
Academic Performance	.191**	.165**	.165**	1.00

**p < .01

Discussion

The Informed Learning approach to IL views learning as changes in awareness of aspects related to both using information and disciplinary content.[52] The Informed Learning scale is a tool that aims to bridge the divide between an educational theory—Informed Learning pedagogic theory—and educational practice in the form of academic libraries' assessment activities. The scale sheds light on student perceptions of IL as it relates to learning across undergraduate courses.

IL theories that emphasize the situated nature of IL, such as Informed Learning, are not commonly associated with standardized assessment techniques like surveys. Instead, they typically require the analysis of student products or reflections. We argue that this stance is problematic. Measurements of student work products are only practical on a small scale, and so are unlikely to provide adequate evidence to demonstrate the value of IL to student learning at a curricular level, across thousands of students from different majors. Given quantitative assessment demands (often tied to funding and other resources in higher education), there is a real need to investigate whether academic librarians, through their work in IL instruction, further disciplinary learning goals. The Informed Learning scale addresses this need by providing quantifiable assessment data of student perceptions of their ability to use information to learn. While other scales use more questions—we suggest that a short instrument is beneficial as it allows the Informed Learning scale to be used in tandem with other scales. Collecting data about student learning at the same time and in a similar way as one collects data about IL better enables exploring how using information relates to student motivation, learning climate, and academic performance.

Given that the *Standards* focused on developing a set of IL skills, many measures aimed to assess student behavior and performance regarding IL-related work. This is a valid and useful way to measure IL from this theoretical perspective. However, using a definition of IL based on Informed Learning theory, we argue that student perceptions of their ability to use information in their disciplinary context is equally important—as Informed Learning is concerned with whether students experience using information in ways that are conducive to learning subject content. Additionally, the results of our exploratory study indicate that the Informed Learning scale is correlated with course grades, suggesting that the scale might act as an acceptable proxy in situations in which no other measure of student performance related to IL is feasible. A liaison to an engineering department would likely find it easier to ask a civil engineering administrator to add eight questions to an existing student survey than to work with various instructors on how information enables students to learn disciplinary content across multiple courses. Informed Learning Scale results could be shared with an academic unit—pointing to areas where library resources should be used. As the Informed Learning scale is a short, context-independent measure, it could be administered broadly to target specific courses or contexts that might benefit from closer engagement with IL.

The Informed Learning scale provides academic libraries a platform to share data that is of interest to a broad audience by allowing a comparison of student perceptions of using information to learn with student learning outcomes as defined by grades or other learning measures like learning climate and motivation. Instructors could use these data to refine learning outcomes, assessments, or classroom activities. Administrators both internal and external to an academic library could better determine the value of academic libraries in furthering student learning across a curriculum, department, or college. Too many variables can account for differences in overall GPA—Kuh et al. note that high school academic preparation, full- and part-time status, student engagement, and first-year experience in the classroom, among others, are all predictors of desired educational success.[53] Black and Murphy also note that GPA "may not always be the most appropriate measure for communicating a library's impact."[54] While individual assignment grades may not be of interest to a broader institutional audience, course-level grade data across different majors may be ideal for assessment efforts aiming to provide actionable data for instructors, administrators, and funding agencies.

In linking IL to measurements of student learning like course grades, the Informed Learning scale may be used in a variety of ways to address specific assessment needs. In the initial pilot research, the scale was completed by 6,791 unique students (42% response rate) enrolled in 151 courses, but it could also be implemented in one course or a sequence of courses. If implemented in a pre-/post- fashion in which students complete the scale before and after undergoing instruction, the data collected could shed light on changes of students' perceptions of using information to learn as a result of instruction. The scale could also be used longitudinally to track large cohorts of students' perceptions of using information to learn as they advance through a curriculum.

Data gathered through the implementation of the scale may be linked to demographic data to measure certain student populations and their perceptions of using information to learn. Successful instructors, courses, or programs who are able to foster more sophisticated understandings of using information to learn could be identified and their successful methods and approaches replicated. Results from the Informed Learning scale could also provide targets for embedding IL into curricula by indicating courses where students do not feel confident in their ability to use information to learn disciplinary content. Linking data from the Informed Learning scale with data from other aspects of student learning, like motivation, could provide academic librarians with evidence for *how* embedding IL into their course could improve student motivation. This could shift librarian-instructor conversations toward motivation and learning climate—and the role IL may play in such aspects of student learning. If IL can be discussed in relation to other important measures of student success that faculty use for promotion and tenure, this may provide useful data in support of the importance of embedding IL into curricula.

This research is exploratory in nature, and the preliminary findings are not generalizable to other contexts. Further analysis—for instance, seeking discriminant and convergent validity—could be useful. Additionally, Informed Learning is one IL theory among many that argue for a situated and context-dependent approach to IL. This limits the findings to focusing on students' perceptions of their ability to use information to learn as our theoretical lens focuses on this exact phenomenon. Nonetheless, other self-reported scales could capture data relating to different aspects of IL in the disciplinary classroom, such as sociocultural elements or power dynamics. Such instruments would further enrich scholarly inquiry about how IL relates to student learning. Future research using similar data could be analyzed in terms of student demographics—providing insight on the possibility of substantial discrepancies of outcomes for certain student populations.

The Informed Learning scale attempts to address two major issues: 1) demonstrating how IL data can be related to other important measures of student learning; and 2) measuring IL in alignment with recent theoretical advancements where IL is context dependent. Such an approach may yield valuable insights into the relationship between IL and student learning—as suggested by our initial findings identifying correlations between students' self-perceptions of their ability to use information to learn and measures of student learning like course grade, motivation, and learning climate across thousands of students. Though this research describes an exploratory pilot of the Informed Learning scale, preliminary results suggest that the scale can advance academic library assessment efforts by using contemporary theoretical developments in IL while linking IL data with important measures of student learning.

Conclusion

This paper describes the development and initial implementation of the Informed Learning scale. Initial findings suggest that it may be a useful tool to measure how students perceive their ability to use information to learn in various disciplinary contexts at scale in higher education. It is also proof of concept for how an IL scale can be developed from a theoretical perspective that views IL as more than just a set of skills. While still preliminary, findings suggest that such a scale may offer useful evidence for providing a demonstrable link between how students use information to learn disciplinary content and important metrics of student learning like motivation, learning climate, and course grade.

In practice, this may provide justification for IL instruction efforts to focus more on helping students achieve disciplinary learning goals. Using the Informed Learning scale may also help to foster close partnerships between academic librarians and instructors by using metrics that instructors care about, namely student learning and motivation gains. Perhaps, most importantly, librarians who use a scale based in a relational approach to IL may be better equipped to articulate their role as educators by showing how their instructional efforts impact measures of student learning and success in concrete ways.

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Reference and Instructional Services to Postsecondary Education Students with Intellectual Disabilities

Mirah J. Dow, Bobbie Sartin Long, and Brady D. Lund

This paper presents the results of a survey completed by academic librarians at United States colleges and universities identified on the ThinkCollege.net website, a project of the Institute for Community Inclusion at the University of Massachusetts Boston funded by grants from the Office of Postsecondary Education, US Department of Education. The objective of the study was to learn about the reference and instructional involvement of academic librarians in providing resources, library services, and learning activities with enrolled college students with intellectual disabilities (ID). The results reveal several recommendations for academic libraries and librarians toward improving access to postsecondary education for students with ID.

Introduction

High school graduation and transition to undergraduate college and university programs are fortunately opportunities in reach of individuals with disabilities (ID). As a result of protections in American law, there has been increased enrollment by individuals with ID in higher education.[1] (*Higher education* is defined as educational opportunities provided through colleges and universities.) Neurodiversity in higher education has ushered in implications for how higher education institutions include individuals who experience intellectual differences.[2]

Traditionally, higher education was designed for eligible students who were viewed as those who have high-grade point averages in academic content areas; excellent oral and written communication skills, problem-solving and social skills; above-average confidence and self-determination; and career goals and references who attest to superior involvement in extracurricular and volunteer activities. These views of eligible students have evolved, and educational practices are changing. Broader understandings of eligible individuals include those with characteristics considered to be diverse such as race, ethnicity, nationality, gender, sexual orientation, religion, age, socioeconomic status—and ability. In a contemporary higher education environment, diversity is achieved when traditionally underrepresented groups are included in the learning environment.

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The purpose of this study is to learn about the reference and instructional involvement of academic librarians in providing resources, library services, and learning activities with enrolled college students with ID. To determine how many colleges and/or universities offer postsecondary education (PSE) programs and in which areas of the United States programs are located, the researchers analyzed the ThinkCollege.net website, a project of the Institute for Community Inclusion at the University of Massachusetts Boston funded by grants from the Office of Postsecondary Education, US Department of Education. There are currently adult learning PSE opportunities for individuals with ID in 49 states with an array of college and university course types attended by students with and without disabilities including nondegree programs (60), certificate programs (169), and other combinations (56) of options for nondegree, certificate, and degree programs. The authors intend to use the findings of this study to make recommendations for improving postsecondary education for students with ID by strengthening library-related key elements in the areas of awareness, policy, and capacity building.

Literature Review

For this study, it is important to describe ID, review statistics about numbers of students with ID who are eligible for PSE opportunities, identify literature about educational needs of students with ID, clarify standards for inclusive higher education, and review recent literature affirming college and university libraries serving individuals with ID.

What Is Intellectual Disability?

According to the American Association of Intellectual and Developmental Disabilities (AAIDD) website, "[i]ntellectual disability is a disability characterized by significant limitations both in intellectual functioning (reasoning, learning, problem-solving) and in adaptive behavior, which covers a range of everyday social and practical skills. The disability originates before the age of 18."[3] Further, according to the AAIDD website, the term *intellectual disability* (ID) denotes the same population once labeled *mentally retarded* (MR). It has taken time for MR language to disappear in legislation, regulations, names of organizations, and public use. Unlike the diagnosis of MR, ID is not determined by an IQ (intelligence quotient) test; instead, ID is diagnosed by a complex assessment in the areas of intellectual functioning and adaptive behavior, which includes an assessment of conceptual, social, and practical skills. This present research reveals that individuals with ID may also be identified as having nonverbal learning disabilities: learning disabilities, attention-deficit hyperactivity disorder, behavioral/emotional disorders, or Autism Spectrum Disorder.[4]

Postsecondary Education for Individuals with ID

The US Department of Education, National Center for Educational Statistics, *Digest of Education Statistics*, 2017 (NCES 2018-070), Chapter 3 indicates that in 2015–16, 19 percent of male students and 20 percent of female students in PSE (any education beyond high school) reported having a disability, including ID.[5] NCES reports that, between 2000 and 2017, total undergraduate enrollment in degree-granting postsecondary institutions was 16.8 million students. Annually, education after high school has become an opportunity for an estimated 2,000–3,000 students with ID who are eligible for PSE opportunities.[6] Education after high school for the population is extremely important given the research indicating that, when compared with their peers, individuals with ID typically earn less, are engaged in lower skills jobs, experience higher

rates of poverty, and have limited access to employee benefits.[7] Decreasing the high number of unemployed individuals with ID must be a matter of serious concern for all PSE educators and academic librarians who have a stake in the future of higher education.

When addressing the complex layers of Title II of the Americans with Disabilities Act Amended Act (ADAAA), Section 504 of the Rehabilitation Act of 1973, or the Individuals with Disabilities Education Act (IDEA), educational needs of individuals with ID have significant implications for content area faculty, instructional librarians, and learning experiences for students with ID.[8] When writing about the educational needs of individuals with ID, Kelley and Westling state that educational programming beyond high school is "not two-year vacations, respite care, or full-time activity centers," but in contrast, "a postsecondary education program for individuals with ID should intentionally provide the structure, support, and learning opportunities that will be success-oriented and lead to greater independence as an adult."[9] Unlike when educating students without diagnosed disabilities, students with ID should benefit from higher education policies and practices that embrace institutional collaboration with social service agencies and/or school districts to identify, collect, and analyze student evaluation data. Plotner and Marshall assert that, when students are served under the IDEA, PSE programs may be required to collaborate with adult agency partners when planning and delivering courses to improve the likelihood that knowledge and skills gained during PSE will lead to appropriate employment outcomes for students with ID.[10] Sheppard-Jones, Kleinert, Druckemiller, and Ray further point out that, even when adults with ID complete PSE programs, they often require ongoing supports through state and federally funded developmental disabilities waivers.[11]

Under IDEA, two- and four-year public and private higher education institutions often provide programs with federal support for high school graduates with ID, age 18 to 22.[12] PSE programming for individuals with ID is a response to advocacy predominantly by parents who want information and guidance, safety, and a focus on employment for their students. Other disability advocates maintain that federally funded institutions must open their doors to enable individuals with disabilities to benefit from rights to education until their twenty-second birthdays.[13] Until recently, many individuals with disabilities had no choice of where to receive education services guaranteed by the law except to remain in high school. For individuals with intellectual and physical disabilities, remaining in high school until their twenty-second birthday was typically considered unacceptable when compared to typical peers who graduate at age 18. Therefore, though it was an option to stay in high school for three more years, it was not an acceptable option for most.

Standards for Inclusive Higher Education

According to Grigal, Hart, and Weir, the *Think College Standards for Inclusive Higher Education* created at the Institute for Community Inclusion at the University of Massachusetts Boston provides a framework for a model PSE program and guidance for facilitating participation for students with ID on college campuses.[14] Their model includes eight key elements: academic access, career development, campus membership, self-determination, alignment with college systems and practices, coordination and collaboration, sustainability, and ongoing evaluation. Grigal et al. stress that students with ID need access and support to participate in college and university organizations and residential life facilities; to participate in cocurricular activities such as student organizations, practica, and service-learning opportunities; and to use technology devices for communication and completing assignments. Also, individuals with

ID need to engage in social activities with students without diagnosed disabilities who serve as role models and natural supports. The current transition to increased diversity in higher education environments, together with the use of the *Think College* standards, suggests many implications and opportunities for instructional librarians to be directly involved in teaching information literacy skills.

Used together, the *Think College* standards alongside the Association of College and Research Library's *Framework for Information Literacy for Higher Education* can provide instruction and reference services librarians a comprehensive outline for identifying information literacy skills instruction and reference services designed to meet the needs of individuals with ID.[15] Moreover, in academic libraries there are accessible spaces that can be designed to reduce student intimidation, anxiety, and uncertainty about obtaining reference services; using public access computers; and studying for and taking exams in a space that is free from major distractions yet open to all students. It is increasingly common for centers for listening, speaking, and writing to be located in academic library buildings to make available both library faculty instructors and informed student assistants. Academic librarians are prepared to learn from subject faculty about various aspects of course content, assignments, and projects designed for students with ID, and they can serve as instructors online and/or present in the library to communicate with the students.

Standards-based information literacy instruction can be provided when students with ID use the library in person. Additionally, guidance can be provided in accessing needed public or personal transportation, and academic library personnel can answer questions and assist in facilitating bus, taxi, ride-sharing, and other naturally occurring transportation options. Academic librarians can guide and facilitate students' access and communication with disabilities services provided by that college or university office. In addition to library orientation sessions and tours, academic librarians can provide personal instruction or small or group instruction about the use of needed technology such as personal devices to text, email, and access electronic resources and platforms for instructions. Individuals with ID, along with their peers, can use the library to meet with mentors, tutors, and campus ambassadors. And, as Hall, Meyer, and Rose suggest, academic librarians are well positioned to provide education and training to college and university faculty on universal design for learning principles, which are now referred to by name in IDEA and other US laws.[16] Academic librarians can also provide parents and guardians access to information and resources about their rights to participate in their students' PSE programs.

Library, Librarians, and Students with ID

A review of published literature reveals that, while librarians have continuously improved physical access to library spaces and access to content, there are only a few, yet some significant, publications about how pre- and in-service librarians are active and involved in addressing the learning needs of enrolled students with ID. For example, Albertson and Whitaker reported that an LIS master's student service-learning project provided access to technology and training contributing to personal empowerment in individuals with ID. The master's students gained insights about the learning needs of individuals with ID.[17] Advocating for college students with learning disabilities, Nall at East Carolina University (ECU) asserted that the principles of Universal Design for Learning by academic librarians should be used to build a comprehensive response to a wide variety of learning needs.[18] According to Kavanagh,

Webb, and Hoover, also at ECU, academic librarians in Joyner Library used Universal Design for Learning elements to review an existing biology LibGuide and revise it to include audio, visual, kinesthetic, and text methods of instruction.[19] They reported that using "a systematic approach to tutorial design that uses both the instructional design process of ADDIE and the design principles of UDL to differentiate means of representation of information will result in a positive educational experience for all students, not just those with learning disabilities."[20] At the Cushing Memorial Library and Archives, Texas A&M University, academic libraries found positive results from using the font Open Dyslexic in creating library exhibits, an open-source font designed to increase the level of access to objects and explanatory text for all including students with Dyslexia.[21]

Brannen, Milewski, and Mack reported that the University of Tennessee (UT) Knoxville formed an Assistive Technology and Accessibility Committee with the mission to assess and make recommendations about UT Libraries' practices for serving college students with disabilities using library-owned instructional materials and technologies.[22] They also recommend incorporating universal design when planning for library instruction and outreach to college students with ID. Anderson reported evidence that librarians' awareness of Autism Spectrum Disorder through educational opportunities is the first step in tailoring the library environment, providing access to resources, and creating special interest group opportunities for social interactions for individuals who are otherwise typically alone.[23] Conner and Plocharczyk provided evidence that the academic library can successfully offer book clubs for learning and socializing aimed at college students with ID.[24] Kowalsky and Woodruff created and published a guide for creating inclusive library environments.[25] Murphy, Amerud, and Corcoran stated that, although partnerships between academic libraries and institutions' disability services vary across North America, it is encouraging that interunit partnerships exist to provide opportunities for enhanced student services and learning supports promoting success for individuals with ID.[26]

Research Questions

To learn about academic librarians' involvement in serving students with ID at the colleges and universities identified on the ThinkCollege.net website, following a series of demographic questions, our study was designed to answer three central questions:

1. What instruction and/or reference service accommodations are made by academic librarians for students with ID?
2. What professional preparation have instruction and reference service librarians had for serving students with ID?
3. What would help academic librarians to better serve students with ID?

Methods

Questionnaire design was used for this study. Questions were developed by the researchers based on best instructional practice suggestions for students with disabilities discussed by Carter in 2004 including adapting teaching styles, clarifying, making information more accessible, and sensitivity to users' needs.[27] The researchers also used their knowledge of the learning and support needs of individuals with intellectual disabilities as well as their knowledge of academic library operations and services. These questions were further refined based on the feedback provided by academic library professionals affiliated with the researchers but not

part of the research team. Qualtrics, an online survey platform, was used to build the questionnaire. The final questionnaire consisted of 21 multiple choice/multiple answer questions about the demographics of the respondent (where, geographically, they work; their educational background; their experience with individuals with disabilities), their opinions on library services to students with intellectual disabilities, and their opinions about modifications to reference and instructional services. A copy of the questionnaire is provided as an appendix.

The population for this questionnaire was librarians at institutions identified on the Think-College.net website that offer programs for students with intellectual disabilities. Librarians were identified from these institutions' websites, and their email addresses were collected. Questionnaires were delivered as an anonymous link via librarians' email addresses. The first invitation to participate was sent via email on April 24, 2020, with follow-up emails on May 4 and May 14. In total, potential respondents were given approximately one month to complete the questionnaire.

Following the data collection, an analysis was performed among both the aggregate findings and all demographic groups and based on distinctions among groups. For the latter analyses, chi-square tests were used to identify any presence of a statistically significant deviation in responses to service-related questions based on responses to demographic questions. Those analyses that yielded statistically significant results are included in the results section.

Results

Descriptive Statistics

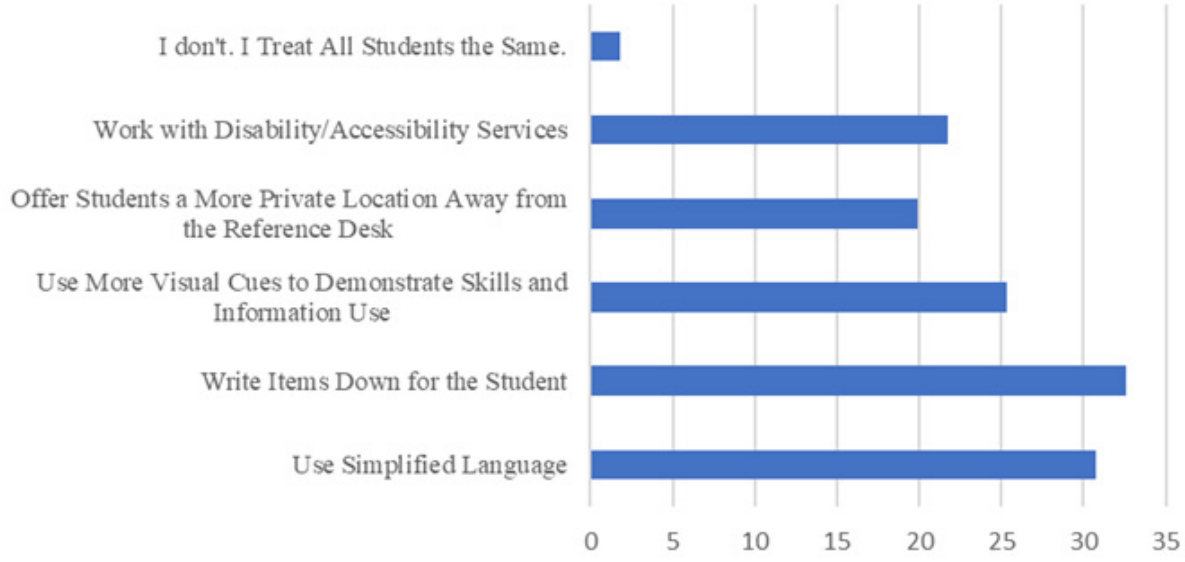
Thirty-eight (38) complete responses were received from an initial population of 102 librarians at universities that offer PSE programs for learners with ID (37% response rate). These respondents (see table 1) were distributed roughly equally on the eastern and western halves of the United States from librarians with an affiliation with a four-year public university. Twenty-eight (28) of 38 respondents (74%) were from a college or university with a student population of fewer than 10,000. All respondents hold a master of library science and/or master of library and information science degree. Most of the respondents (53%) had extensive professional librarian experience (21 years or more); 32 percent of respondents had between 10 and 20 years of professional experience, while 15 percent had 9 years of experience or less. Most respondents lacked any library and information science coursework on serving individuals with disabilities, while about one-half had an educational background in technology, teaching, or social services.

About 10 percent of respondents to the survey personally identified as having a disability, while more than two-thirds of respondents indicated that someone they know or care about has a disability. Although the majority of respondents indicated that they had experience serving individuals with disabilities (68%), 11 respondents (29%) were not sure whether they had ever served a student with a disability, and one (3%) indicated that they had never served a student with a disability.

TABLE 1
Participant Locations

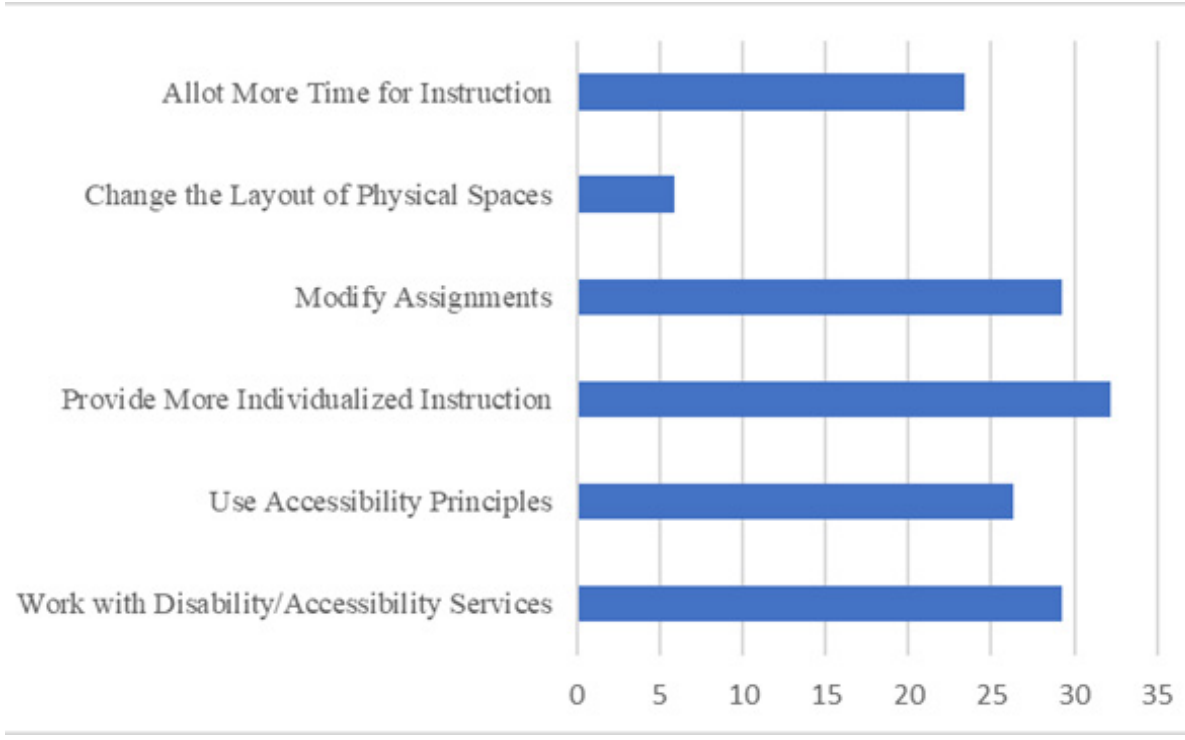
State	Number of Participants
Alabama	1
California	4
Colorado	1
Connecticut	2
Florida	2
Georgia	1
Illinois	2
Indiana	2
Iowa	1
Kansas	1
Kentucky	2
Louisiana	1
Massachusetts	2
New Jersey	2
New York	3
Ohio	1
Oklahoma	2
Pennsylvania	2
South Carolina	2
Texas	2
Wisconsin	2
Total	38

FIGURE 1
What Reference Services Accommodations Are Made for Students with ID



Displayed in figure 1 are responses to the (multiple answer) questions, "How do you modify reference services for students with ID?" Only a couple of respondents noted that they do/would do nothing different, instead treating "everyone the same." The most cited adjustments were accommodations of language/communication: using simplified verbal language; writing items down; and using more nonverbal cues. On the other hand, modifications to instructional sessions, as shown in figure 2, focused equally on communication techniques

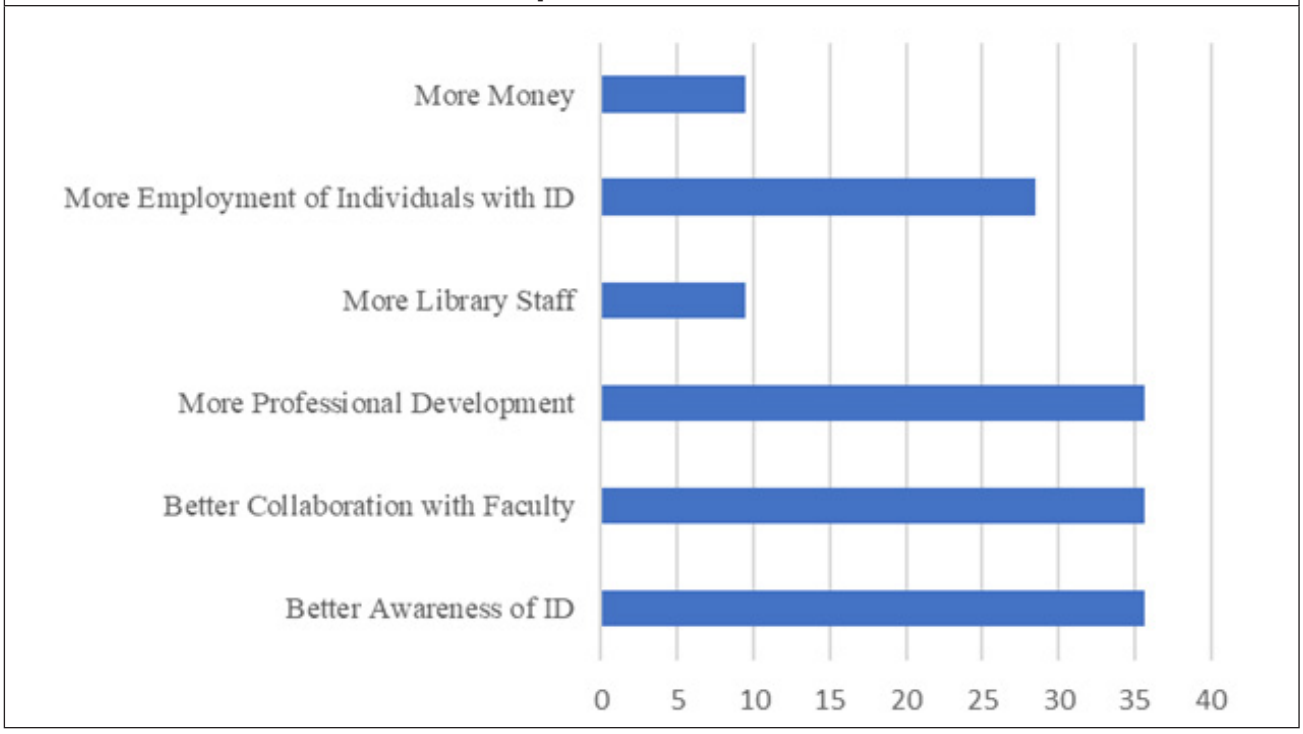
FIGURE 2
What Instructional Accommodations Are Made for Students with ID



like more individualized instruction and intermediary techniques like working along with disability/accessibility services. Respondents were more likely to select multiple answers with the reference services question than the instructional services question.

Figure 3 displays the results to the question, "What would help you better serve students with ID?" Surprisingly, "more money" was not a top choice. Rather, respondents were much more interested in acquiring a greater knowledge about ID and with improving collaboration relationships with subject matter faculty. Better representation of individuals with disabilities on the college/university campus was also cited as desirable. Only about 25 percent of respondents indicated that increased funding was necessary to better serve students with ID.

FIGURE 3
What Would Help Better Serve Students with ID?

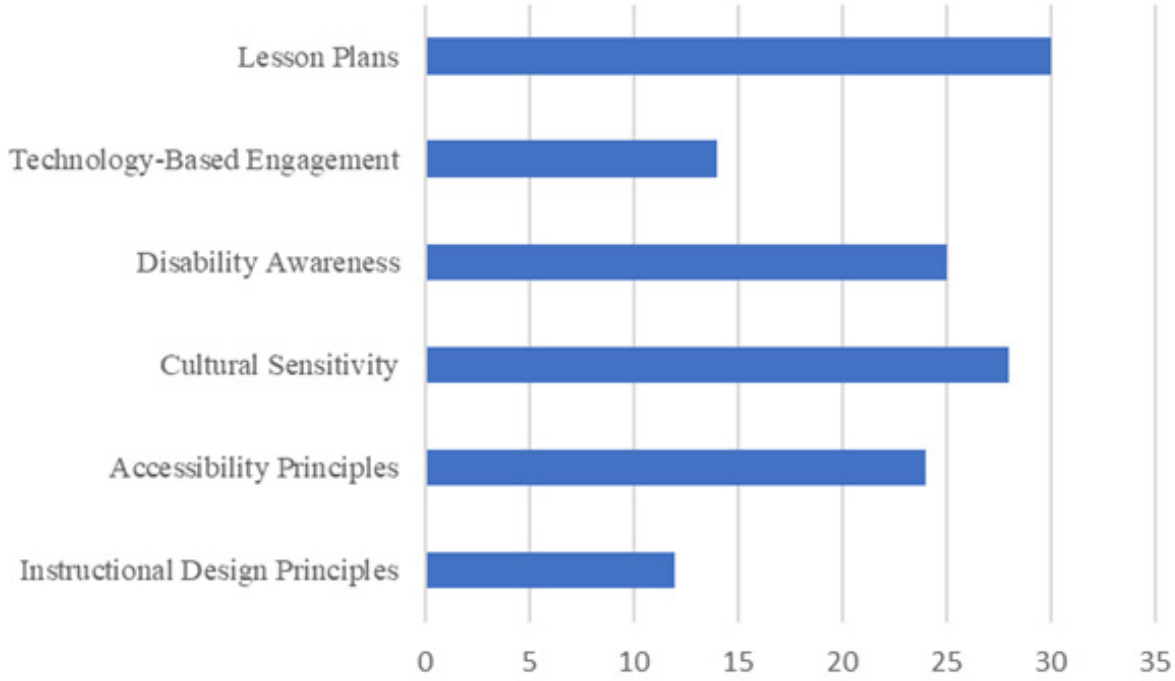


In response to the question regarding respondents' opinions toward serving students with ID, a near 50–50 split exists between those who believe either that their campus lacks adequate resources to serve this population or that the population deserves only equal but not more resources and those who believe that "university libraries should work with these students (with ID) and their programs to develop policies and services that are beneficial." This may suggest that librarians are generally uncertain about their capacity to serve members of the ID population but are interested in providing help when they are able.

As shown in figure 4, lesson plans and cultural sensitivity practices are the most common principles/approaches employed by respondents to prepare for instruction, with disability awareness and accessibility principles close behind. Comparatively, instructional design, and technology-based engagement practices are limited. Additionally, all survey respondents indicated, in response to what factors they consider when developing instruction, academic level of students, academic area/subject, and course format are necessary information/considerations. However, only 42 percent said that they consider or inquire about whether any of the students have special learning needs.

Finally, more than one-half of survey respondents (55%) indicated that neither their university nor library offers professional development opportunities related to working with individuals with disabilities. Among those respondents who indicated that these opportunities do exist, 35 percent indicated that both their university and library offered this type of training, 47 percent indicated that only their university did, and 18 percent indicated that only their library did.

FIGURE 4
Principles/Approaches Incorporated into Instructional Preparation



Differences in Responses

In the following section, statistically significant findings among demographic (independent) variables and service (dependent) variables are analyzed using chi-square tests. Personal experience with individuals with disability and educational background are found to be two variables that appear to particularly shape a respondent's views about library services for students with intellectual disability.

Regarding modifications made to reference and instructional services in academic libraries:

- University Size (greater than 5,000, less than 5,000): $X^2 = 19.71$, $p < 0.05$. Respondents at smaller schools were particularly more likely to use simplified language in reference and teaching, while respondents at larger schools were more likely to use additional support from disability services.
- Degree in Education, Information/Learning Technologies, or Psychology/Sociology/Social Work (Yes, No): $X^2 = 36.47$, $p < 0.01$. Respondents with one of these degrees were more likely to modify assignments for students with ID, while respondents without these degrees were more likely to use additional support from disability services.
- Personal Experience with an Individual with a Disability (Yes, No): $X^2 = 69.72$, $p < 0.01$. Respondents without personal experience were more likely to seek additional support

from disability services, while respondents with personal experience were more likely to use accessibility principles and change layouts of physical spaces.

Regarding what would help you better serve students with ID:

- Personal Experience with an Individual with a Disability (Yes, No): $X^2 = 24.02$, $p < 0.01$. Individuals with personal experience were more likely to emphasize the need for better collaboration across campus and the need for better representation of individuals with disabilities among university employees. Individuals without personal experience were more likely to emphasize the need for more training and funding.

Regarding how you feel about serving students with ID:

- Personal Experience with an Individual with a Disability (Yes, No): $X^2 = 80.28$, $p < 0.01$. Individuals without experience with individuals with disabilities were much more likely to suggest that students with ID would be better served at another institution or that their university does not have the resources to support these students. Those individuals with this experience were much more likely to suggest that these students should receive the same services as anyone who uses the library and that universities should work with these students to develop relevant policies and services.

Regarding what principles/approaches you use for instruction:

- College/University Degree in an Education, Information/Learning Technology, or Sociology/Psychology Area (Yes, No): $X^2 = 23.55$, $p < 0.01$. Individuals with an educational background in one of these areas were more likely to engage in technology-based engagement, while those without this educational background were more likely to use a detailed lesson plan to guide their instruction.

Additional Findings about Teaching Information Literacy Skills

Respondents indicated that they teach information literacy skills including searching (21%); evaluation of sources (20%); attribution and proper citations (19%); intellectual freedom and copyright (14%); interpreting graphs, charts, and figures in publications (5%); interpreting methods, hypothesis, theory, and findings in a scholarly publication (8%); discipline-specific literacy skills (such as health literacy and its relationship to information literacy) (8%); and other information literacy skills (90%). When partnering with subject faculty to develop instructional sessions, respondents consider and inquire about the academic level of students (23%); academic area (22%); course format (online, in-person, hybrid) (22%); special learning needs of students (10%); program outcomes (9%); teaching style of instructor (8%); and other (6%) with comments knowing course objectives and key texts, course assignments, disciplinary/professional expectations, and workplace recruitments; and upcoming assignments. These factors suggest that the respondents are well situated and well suited for addressing reference and instruction services and PSE opportunities for individuals with ID.

Discussion

The descriptive statistics and statistically significant findings among variables using the chi-square test are used to inform answers to the research questions and to propose recommendations for improving reference and instruction services to PSE students with ID.

RQ1: What instruction and/or reference service accommodations are made by academic librarians for students with ID?

The majority (96%) of respondents indicated that they teach one to six one-shot sessions each week in partnership with subject area faculty, and just slightly more than one-third (36%) of respondents indicated that they teach one to three credit-hour courses at their institution. Fewer than half the respondents ask faculty members about students' special learning needs when preparing to teach. When asked about accommodations for students with ID, respondents indicated their involvement in a variety of approaches including allotting more time for instructional tasks and/or session time; collaborating with university accessibility services to individualize instruction, which was done more often by larger universities; offering various formats to consume information; providing individual or small group instruction; modifying assignments; and changing the layout of physical space. Nearly half (46%) the respondents indicated that the library offers an identified area for students with ID to take tests and to study. These are all forms of accessibility and support services that can positively contribute to ensuring that students with ID have full and equal access to college and university programming. Also, these accommodations and services by academic librarians are likely to contribute to the achievement of the *Think College Standards, Quality Indicators, and Benchmarks for Inclusive Higher Education* (Standard 1) by facilitating qualified academic access for students with ID that provides an array of existing course types attended by students without disabilities rather than separate courses attended only by students with disabilities. Further, these responses are likely to be indicative of PSE programming that facilitates collaboration and coordination (Standard 6) with key departments such as the library making it possible for students with ID to effectively use campus resources.

RQ2: What professional preparation have instruction and reference service librarians had for serving students with ID?

Respondents with prior education in the areas of education, information/learning technologies, or psychology, sociology, or social work were more likely to take steps to modify assignments for students with ID. Respondents without these degrees and without personal experience with disability were more likely to ask for assistance from university support services. While more than half the respondents (56%) indicated that they have experience in serving individuals with disabilities, 76 percent of respondents indicated that their master's program did not discuss serving individuals with ID. Responses indicate that only about half of universities that offer programs for students with ID also offer professional development opportunities related to working with these students. This leaves librarians to seek professional development themselves. The bottom line for these respondents seemed to be that opportunities to prepare for reference and instruction services to students with ID have been missing from master's programming for professional librarians. Opportunities to learn about adult learning in PSE that addresses students with ID is the desired topic for professional development growth and more important to the respondents in this study than additional funding for library resources.

RQ3: What would help academic librarians to better serve students with ID?

Study respondents identified what would help to better serve students with ID, including better awareness of ID in general (22%); better collaboration with faculty and staff (22%); more professional development (22%); more library staff (6%); more employment of individuals

with ID across the institution (18%); more money (9%); and other (1%), with the comment that it would help to have better options for purchasing books and other materials relevant and readable for adults with ID. Survey responses indicate that academic librarians want to invest more time and resources to better serving students with ID.

Limitations

While the sample for this study includes individuals who are relevant to the study's topic, there was a small response rate, which decreased representation of the entire study population. The small sample size also affects the reliability of the survey results, which led to higher variability and potential bias. The researchers are concerned that perhaps only a small number of people had knowledge about the survey sent to them in their email due to the impact of the COVID-19 crisis. The results of the study may be skewed to reflect only the opinions of those who read the email and participated because they may have had strong feelings about the study's topic. While the results of this study are impacted by timing of the survey, given the unknowns surrounding the global pandemic, it seemed important to nevertheless gather as much input as possible from this study population about serving college students with ID.

Recommendations

The following reference and instructional service recommendations are for improving accommodations for students with ID through strengthening three key elements: awareness, policy, and capacity building. Based on our research, these are suggestions for priorities for academic librarians as they interact with each other and campuswide.

Awareness

- Provide authoritative, current sources about ID during campus learning services events and training sessions.
- Talk generally about the information literacy learning needs of students with ID when serving as the library's representative on campus committees and/or task forces.
- Inform campus content partners about librarians' roles in designing reference and instruction services for students with ID.
- Collaborate with context area faculty about Open Educational Resource publications relevant and readable for PSE students with ID.
- Discuss the information literacy learning needs of students with ID during library curriculum and/or service planning.

Policy

- Ensure that information literacy learning for students with ID served under existing legislation (examples: IDEA; Title II of ADAAA; Section 504 of the Rehabilitation Act of 1973) is addressed as modifications or accommodations in institutional and library policy.
- Use institutional policy for providing accessibility training and services to faculty and academic librarians to inform library policies.
- Develop or modify existing library policy to support students with ID to gain access to the library environment, sources, and services.

Capacity Building

- Identify librarians with disabilities or with experiences with individuals with ID to hire and to serve as mentors and/or allies.
- Offer professional developing opportunities focused on the learning needs of adult students with ID.
- Fund demonstration and research on PSE models for teaching information literacy skills to increase the number of available options for students with ID and develop/disseminate replication materials.

Conclusion

As the only study focused on reference and instructional services at colleges and universities with programming for students with ID identified on the ThinkCollege.net website, the results from this study fill a gap in the research about academic librarians' perceptions about their involvement in inclusive education and students with deficits in intellectual functioning and adaptive behavior. By surveying librarians, we provided them the opportunity to communicate their backgrounds and indicate how they teach information literacy skills and provide library services and sources. They also communicated about how they accommodate and/or modify instruction for students with ID. Invaluable details were discovered that informed specific recommendations.

To better serve students with ID, college and university librarians need professional development opportunities that extend their knowledge and skills in teaching information literacy skills with a special focus on needs of students with ID and best practices in providing accommodations and modifications. Academic librarians who have education about ID and personal experiences working with individuals with disabilities tend to 1) recognize the need for better collaboration across campus; 2) value representation of individuals with disability among university employees; and 3) emphasize instructional services that support diversity, equity, and inclusion. Our findings further reveal the need to investigate benefits of hiring academic librarians with disabilities, which corresponds to Oud's[28] recent call for more academic library research focused on library employees with disabilities.

Increasing awareness of the enrollment of students with ID on college and university campuses is necessary to usher in neurodiversity in higher education. Addressing information literacy learning for students with ID in university and library policies and increasing capacity through continuous professional development and hiring are necessary steps for colleges and universities if they are to achieve diversity when traditionally underrepresented groups are included in the learning environment. There is still much more to learn about improving accessibility and inclusive PSE programming from the institutions identified on the ThinkCollege.net website.

APPENDIX. Librarians Serving Students with ID Survey

What is intellectual disability?

According to the American Association of Intellectual and Developmental Disabilities (AAIDD) frequently asked questions website, "[i]ntellectual disability is a disability characterized by significant limitations both in intellectual functioning (reasoning, learning, problem-solving) and in adaptive behavior, which covers a range of everyday social and practical skills. The disability originates before the age of 18" (AAIDD, 2019, para. 1). Further, according to the AAIDD website, the term *intellectual disability* (ID) denotes the same population once labeled *mentally retarded* (MR).

State in which your library is located. (Please fill in blank.)

1. Type of university
    a. 2-year college
    b. 4-year private
    c. 4-year public
2. What is the size of your total student population?
    a. 5,000 or fewer
    b. 5,001–10,000
    c. 10,001–20,000
    d. 20,001 and greater
3. Number of years of professional librarianship experience. (Please fill in blank.)
4. What is your age?
    a. 25 or younger
    b. 26–35
    c. 36–45
    d. 46–55
    e. 56 or older
5. Do you have an MLS or MLIS?
    a. Yes
    b. No
6. Did any of your MLS/MLIS courses discuss serving individuals with intellectual disabilities?
    a. Yes
    b. No
7. Do you have an undergraduate, master's, or PhD in any of these areas? (Check all that apply.)
    a. Information or Learning Technology
    b. Education
    c. Psychology, Sociology, or Social Work
8. Do you identify as having a disability?
9. Does someone you know or personally care about have a disability?
10. Do you have professional experience serving people with disabilities?

The following questions are about your library's service to students with ID.

11. How do you modify reference services for students with ID?
    a. Use simplified language

   b. Write items down for the student
   c. Use more visual cues to demonstrate skills and information use
   d. Offer students a more private location away from the reference desk
   e. Work with disability/accessibility services to improve the reference interview (which might include consulting the student's individual learning plan)
   f. I do not; I treat all students the same
   g. Another modification (fill in the blank) _____
12. How do you modify instruction sessions for students with ID?
   a. Allot more time for instructional tasks and/or session time
   b. Work with disability/accessibility services to individualize instruction
   c. Use accessibility principles to offer various formats to consume information
   d. Provide more individual or small-group instructions
   e. Modify assignments
   f. Change the layout of physical spaces
   g. Another modification (fill in the blank) _____
13. What would help you better serve students with ID?
   a. Better awareness of ID in general
   b. Better collaboration with faculty/staff
   c. More professional development
   d. More library staff
   e. More employment of individuals with ID across the university
   f. More money
   g. Other (fill in the blank) _____
14. How do you feel about serving students with intellectual disabilities? (Check all that apply.)
   a. This population does not belong at the university.
   b. This population deserves equal access to education, but we do not have the resources to provide proper services.
   c. This population should receive the same services as any other population that uses the library—no more, no less.
   d. University libraries should work with these students and programs to develop policies and services that are relevant and beneficial.
   e. I do not know enough about this population or the programs to have an opinion.
   f. I do not know/do not wish to answer.
15. Does your library offer an identified space for students with ID to take tests or study?

The following questions are about your library's service to all students (the overall student population).

16. How often do you partner with subject area faculty to deliver one-shot instruction to support coursework?
   a. Daily
   b. Few times a week
   c. Once a week
   d. Few times a month
   e. Once a month
   f. Few times a semester

17. Do you teach 1–3 credit-hour courses at your university?
    a. Yes
    b. No
18. Which literacy skills do you teach? (Check all that apply)
    a. Searching skills (library catalog, Google searching, databases, and the like)
    b. Evaluating sources skills
    c. Attribution and/or proper citation
    d. Intellectual freedom and/or copyright
    e. Interpreting graphs, charts, figures in publications
    f. Interpreting methods, hypotheses, and findings in scholarly publications
    g. Discipline-specific literacy skills (such as health literacy and its relationship to information literacy)
    h. Other (fill in the blank)
19. What factors do you consider/inquire about when developing an instructional session with subject faculty? (Check all that apply.)
    a. Academic level of students (freshman, senior, graduate, doctorate, professional)
    b. Academic area (history, anthropology, dental hygiene)
    c. Course format (online, in-person, hybrid)
    d. Special learning needs for students (Are there students with hearing, vision, learning disabilities?)
    e. Program outcome (degree, certificate, nondegree)
    f. Teaching style of instructor
20. What principles/approaches do you incorporate into your preparation for instruction?
    a. Instructional design principles (ADDIE, Dick, and Carey)
    b. Accessibility principles (Universal Design for Learning)
    c. Cultural sensitivity
    d. Disability awareness
    e. Technology-based engagement (virtual reality/immersive technology, social media)
    f. Lesson plans with learning outcomes
21. Does your university or library offer any professional development opportunities related to serving individuals with intellectual disabilities?
    a. Yes
    b. No
    c. No, but I sought them out myself

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Exploring the Development of Undergraduate Students' Information Literacy through Their Experiences with Research Assignments

Amanda L. Folk

Although information literacy has been fundamental to the work of teaching librarians for decades, the ways in which students develop their information literacy is not well understood. In addition, the sociocultural nature of information literacy is often neglected when attempting to assess students' information literacy development. The purpose of this study is to discover factors that could potentially enable or constrain the development of undergraduate students' information literacy through qualitative research that explores first-generation college students' experiences with research assignments throughout college.[1]

Introduction

Information literacy has received a lot of attention in the library and information science (LIS) literature since its emergence as a concept more than 30 years ago. In addition to literature that addresses how information literacy is or should (not) be defined, much of this attention has been related to how best to teach information literacy, especially given the many constraints that teaching librarians are attempting to navigate, such as the prevalence of one-shot instruction sessions. Another facet of the literature related to information literacy addresses various assessments of students' information literacy at a point in time or before and after some type of an intervention. This literature is valuable from both scholarly and practical standpoints; however, a gap in our professional knowledge remains. The ways in which students, particularly undergraduate students, develop[2] their information literacy during college is not well understood. Understanding how students develop their information literacy, including factors that might enable and constrain this development, is vital for identifying appropriate teaching practices, partnerships, collaborations, and assessments.

Identifying the factors that shape the development of students' information literacy is essential, given the shift from a primarily skills-based conceptualization of information literacy as articulated in documents like the *Information Literacy Competency Standards for Higher Education* to the identification and articulation of ways of thinking and knowing related to information literacy in documents like *The Framework for Information Literacy for Higher Education*.[3] Even before this formal shift materialized, several scholars had been pushing for the profession to

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recognize the sociocultural and contextual nature of information literacy.[4] While information literacy, to a certain extent, might be universal, there are manifestations that are situated and negotiated. For example, what constitutes information literacy in a medical environment might be different from what constitutes information literacy in a legal environment. In other words, conceptualizations of what constitutes information literacy might not transfer neatly across disciplines or professions or between different cultural contexts.[5] Because of the contextual and situated nature of information literacy, social and cultural factors likely play a significant role in the development of an individual's information literacy.

In this paper, I share the findings of a qualitative research study that explores first-generation college students' experiences with research assignments to highlight factors that might enable or constrain the development of undergraduate students' information literacy within the postsecondary academic context. I argue that more attention must be paid to the ways in which undergraduate students develop their information literacy during college, as it is critical to students' success in college, as well as to their current and future personal, professional, and civic lives. Without an understanding of the factors that enable or constrain the development of information literacy in college, teaching librarians do not have a firm foundation for making decisions related to appropriate instructional activities, either in the classroom working directly with students or in collaborating with instructors on course and assignment design.

Literature Review

The Sociocultural Nature of Learning and Literacy

Even before the more formalized shift away from a skills-based conceptualization of information literacy occurred, many LIS scholars and scholar-practitioners argued that a consideration of the sociocultural context of information literacy is necessary.[6] This argument has its roots in constructionism, or a focus on "the collective reality whereby meaning is produced and organized through 'shared understandings, practices and language'" of a culture or community.[7] A constructionist perspective indicates that learning is shaped by understanding the values of the community related to information use, communication, and knowledge construction.[8] Indeed, Vygotsky highlights that social interactions are critical to individual learning, stating that learning "appears twice: first on the social level and later on the individual level; first *between* people (*interpsychology*) and then *inside* the child (*intrapsychology*)."[9]

Since its inception, the use of the word *literacy* in the phrase *information literacy* has been problematic and subject to critique. It creates a false dichotomy—someone is either literate or illiterate. Because an individual can be perceived as information illiterate,[10] librarians might assume a deficit approach to working with individuals to develop their information literacy. A sociocultural approach to information literacy argues that information literacy is, in fact, situational, and individuals are developing their information literacy as they navigate and negotiate a particular context. In other words, information literacy should be viewed on a spectrum and as a process of understanding and becoming. Furthermore, literacy, in general, is situated within sociocultural contexts that are imbued with ideologies and hierarchies of power.[11] This means that there are powerful individuals who determine what it means to be literate and who qualifies as literate. When we take a sociocultural approach to information literacy, we recognize the ways in which power can be wielded to either include or exclude. This can be particularly problematic in terms of information literacy in postsecondary edu-

cation in the United States and many other Western countries, as our postsecondary institutions have largely been developed within a culture that has its historical roots within white, upper-class, patriarchal, heterosexual, cisgendered culture. For students whose backgrounds have traditionally been marginalized in higher education, information literacy likely has the power to exclude, even if that power remains invisible.[12]

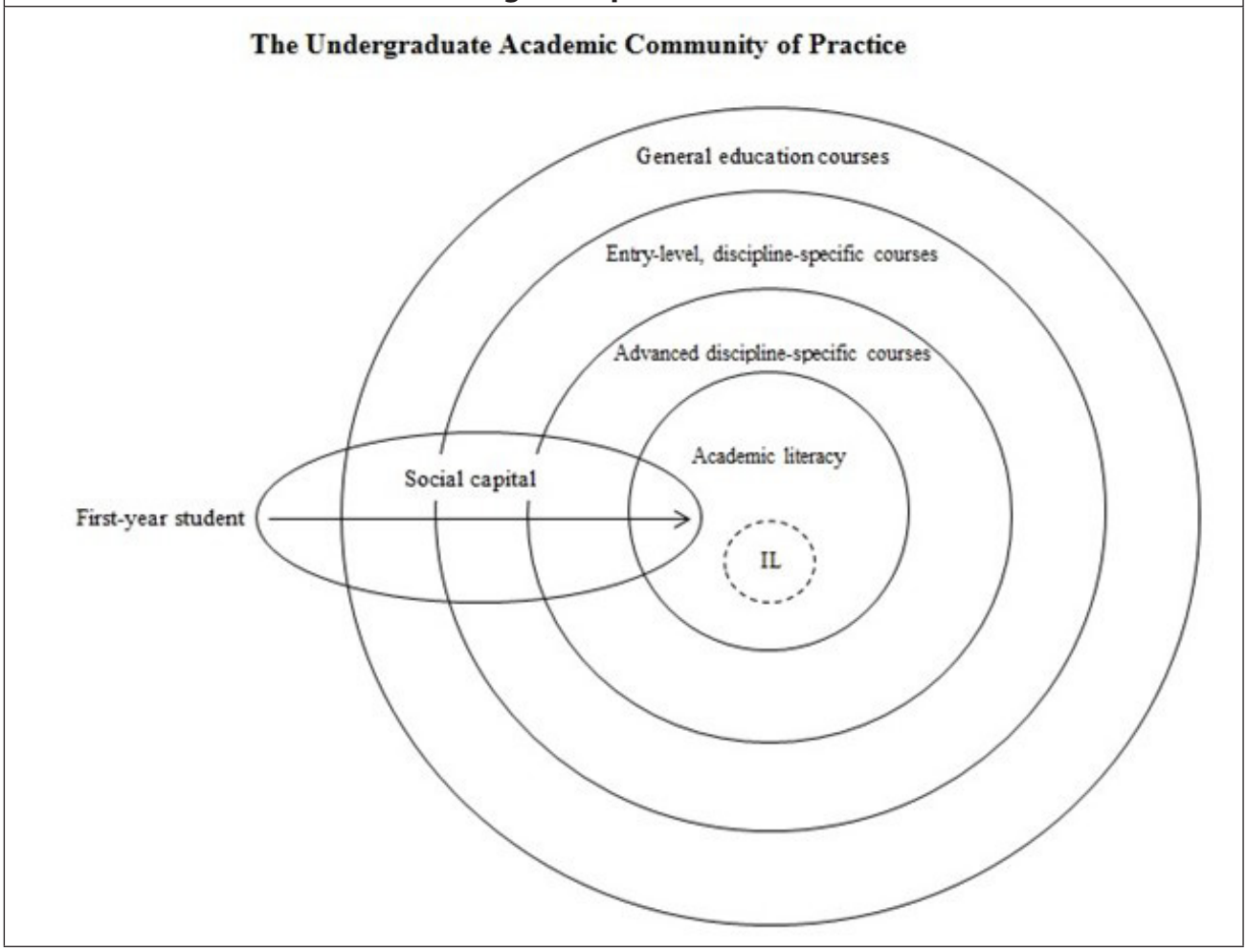
Conceptualizing the Social Nature of Information Literacy

Both Annemaree Lloyd[13] and I have used Jean Lave and Etienne Wenger's communities of practice concept[14] to highlight the significance of the sociocultural aspects of information literacy and conceptualize how individuals in a particular context might develop their information literacy over time. Communities of practice describes the ways in which an individual joins a community and learns the expectations for participating in that community.[15] In particular, it emphasizes the importance of social interactions for new members to learn about the community's cultural norms, including interactions with more established members as well as interactions with novice members or peers. The cultural norms of the community may be tacit, invisible, or hidden to people who are not part of the community; therefore, demonstrating an understanding of these norms is important for signaling belonging and being accepted as a legitimate member of the community. In terms of information literacy, Lloyd states that the community's cultural norms include "the sanctioning of legitimate information, the creation of knowledge and mutual understanding, and the shaping an enacting of identity."[16] In addition to social interactions, Lave and Wenger highlight the role of situated learning theory in the process of becoming a member of a community. This means that new members learn about the cultural norms of the community through active participation in the community.

For the research study discussed in this article, I developed a working conceptual framework using the communities of practice concept as a heuristic to explore the development of undergraduate students' information literacy (see figure 1). I will briefly present the conceptual model in this article, but I provide a more in-depth exploration of the model in a forthcoming book chapter.[17]

In the working conceptual framework, first-year college students are positioned on the periphery of the undergraduate academic community of practice. The core of the undergraduate academic community is composed of privileged academic literacies, which "include particular ways of constructing meaning, making judgments, and determining what counts as valuable knowledge reflecting tacit beliefs and values."[18] Information literacy is one of these privileged academic literacies that students are expected to develop as they become more established members of the undergraduate academic community. Through their coursework and the accumulation of social capital,[19] students move toward the core of the community (in other words, they develop their academic literacies). Social capital refers to the accumulation of information about how to navigate or participate within a particular culture or community through interactions or relationships with others within that community. Though Lave and Wenger do not use the phrase "social capital," it is critical to becoming an established member of the community as it provides students with the information they need to successfully participate in the community based on what the community values and deems as appropriate behavior. Students likely accumulate social capital by developing relationships with their course instructors but also with other established members of the community, such as librarians, advisors, tutors, and student life

FIGURE 1
Working Conceptual Framework



staff. Implicit in the model is the power that instructors have in setting the expectations for participation and assessing students' performance relative to those expectations. In sum, the working conceptual framework posits that both the accumulation of social capital and situated learning within the curriculum theoretically help students to develop their information literacy as they become more established members of the community (that is to say, moving from entry toward degree completion).

Before discussing a particular kind of situated learning opportunity—research assignments—I would like to point out the problematic notion of students being acculturated into the undergraduate community of practice. As mentioned earlier, higher education in the United States and other Western cultures has its historical roots in privileged cultures—white, heteronormative, upper-class, cisgendered, patriarchal cultures. In a different article, I address the problematic nature of information literacy and acculturation for students whose identities have been traditionally marginalized in higher education.[20] We need to consider how we can help students be successful in academic culture as it is right now, since success or failure has real material implications for students, while simultaneously considering how we change our culture, systems, structures, and processes to be more inclusive of and equitable for diverse student, staff, and faculty populations that comprise our institutions.

Research Assignments and Situated Learning

In this study, I view research assignments as situated learning opportunities, in which students are expected to develop and demonstrate their evolving information literacy within the undergraduate academic community. While some students might work on their research assignments in relative isolation, these assignments have a sociocultural component, in that instructors create the expectations for performance, decide how they will communicate those expectations and how to help students meet them, and ultimately assess students' performance in meeting those expectations. James Elmborg referred to activities like research assignments as "literacy events," which require students to know "the codes used by the community and the customs and conventions in play."[21]

Although research assignments are common in the undergraduate academic experience in the United States,[22] little attention has been paid to the ways in which these assignments relate to or demonstrate the development of students' information literacy.[23] Instead, existing research mostly provides a snapshot of the decisions the students make in searching for, evaluating, and using information for an assignment at a single point in time. Existing scholarship has indicated that there might be an expectations gap between students and instructors with respect to these assignments.[24] Gloria Leckie highlighted the difficulties and challenges that undergraduate students might face when completing these assignments, since instructors, who are expert researchers, have designed these assignments.[25] What might seem relatively straightforward to an expert researcher might actually be quite complex for a novice researcher, one who might not have the topical knowledge or vocabulary to confidently negotiate searching for, evaluating, and using information in that context. As a result, Leckie believes that students end up developing a coping strategy rather than developing their information literacy. Because of this, students might fall short of meeting their instructors' expectations, and instructors might make assumptions about how much time and effort students put into the assignment. Barbara Valentine found that students did exert "legitimate effort" in completing research assignments, but they often focused on the explicit instructions related to formatting and the number of sources rather than the more abstract expectations related to critical thinking and information literacy, which can be difficult to articulate.[26]

While discussions of the sociocultural nature of information literacy are not new, we do not have a good understanding of how undergraduate students develop their information literacy during college. This development is a process of becoming, as students become steeped into academic and disciplinary cultures. This kind of understanding likely necessitates research studies that are both qualitative and longitudinal, both of which require significant resources (such as time, funding, and expertise) to do. However, there are research methods that allow us to do an initial exploration of this process of becoming, which could inform future in-depth, time- and resource-intensive research. In the next section, I describe a study that uses phenomenological interviewing to conduct an initial exploration of how students develop their information literacy throughout college through their experiences with research assignments.

The Research Study

This study examines first-generation college students' experiences with research assignments to explore the potential connection of this common academic experience, in which students are expected to develop and demonstrate their information literacy, to the persistent social-

class equity gap[27] in higher education in the United States. In general, first-generation college students are students whose parents have not completed a four-year college degree. Existing research indicates that first-generation students in the United States are less likely to complete their degrees than their continuing-generation peers,[28] resulting in a social-class equity gap.[29] There are many factors that contribute to this equity gap, one of which is access to information about expectations for participation and performance in academic culture, which might not be transparently communicated, thus remaining tacit for many students.[30] Research assignments require students to understand the discursive practices—the ways of inquiring, thinking, knowing, and communicating—that are privileged in academic culture or within a specific disciplinary culture.[31] Information literacy is a critical component of those privileged discursive practices.[32] Therefore, this study seeks to explore the ways in which first-generation students, who may or may not have critical information related to privileged discursive practices, determine instructors' expectations for performance on research assignments throughout college.[33] By asking these students about their experiences with research assignments throughout college, I begin an initial foray into identifying how undergraduate students' information literacy develops throughout college and potential factors that could enable or constrain that development.

Sample and Research Context

The study's sample included 30 first-generation college students who were between the ages of 18 and 24 in at least their third year of study at two regional campuses of a research university in the Mid-Atlantic. Table 1 provides descriptive information about the participants' demographics. Table 2 provides basic characteristics of each campus, which I collected from each campus's website and from the Integrated Postsecondary Education Data System (IPEDS). Pseudonyms have been assigned to each campus—the Manchester campus and the Springfield campus. A salient characteristic that both campuses share is a requirement that students

TABLE 1
Participants' Demographic Information

Campus		**Academic Major Division**	
Manchester campus	12 (40%)	Behavioral and Social Sciences	7 (23%)
Springfield campus	18 (60%)	Biological and Health Sciences	8 (26%)
		Communication and the Arts	5 (17%)
Sex		Cross-divisional Double Major	2 (7%)
Female	20 (67%)	Management and Education	6 (20%)
Male	10 (33%)	Physical and Computational Sciences	2 (7%)
Race/Ethnicity^		**Academic Level**	
Asian/Asian-American	2 (7%)	Junior	11 (37%)
Black/African-American	6 (20%)	Senior	18 (60%)
Hispanic/Latina/o/x	1 (3%)	Recent graduate*	1 (3%)
Pacific Islander	1 (3%)		
White	20 (67%)		

^Participants were asked to self-report their race/ethnicity.
*Graduated 4 weeks before interview.

TABLE 2
Campus Characteristics

	Springfield	Manchester
Undergraduate academic programs	26 majors, 19 minors	40 majors, 50 minors
Undergraduate enrollment	1,477 full-time 101 part-time	1,385 full-time 114 part-time
% of nonwhite students	21%	27%
% female students	52%	54%
% of students 24 year of age or younger	92%	89%
% of Pell Grant recipients	52%	44%
% of students retained from first to second year	76%	72%
Six-year completion rate	53%	52%

complete a capstone project in their major(s) prior to graduation. Although the requirements of the capstone experience vary from discipline to discipline, these courses are designed such that students demonstrate their ability to develop and complete a scholarly research project within their major field(s) of study at the undergraduate level.

Recruitment

After the study was determined to be exempt by the Institutional Review Board (IRB), I worked with administrators at each of the two research sites to identify first-generation college students who were in at least their third year of study based on credit hours. In addition to their names, I also received their date of birth, major field(s) of study, sex, and race/ethnicity. After receiving the data, I removed students who were not of a traditional college-going age (that is, 18 to 24 years old) and students who were not enrolled full-time. In total, 278 students were identified as potential participants in the study—156 students at the Manchester campus and 122 students at the Springfield campus. Using these lists, I emailed potential participants to explain the research study, solicit interest in participation, and inform them of the participation incentive—a $25 gift card for a completed interview lasting no more than 75 minutes. Students who expressed interest in participating were asked to answer a brief, pre-interview questionnaire that confirmed their eligibility (in other words, first-generation status, at least 18 years of age).

Data Collection

I used a modification of Irving Seidman's phenomenological interviewing to conduct one-on-one, semistructured phenomenological interviews.[34] Seidman offers a three-interview approach to phenomenological interviewing, which addresses the participants' background in light of the phenomenon being explored as well as their "present lived experience" with the phenomenon, and then asks the participants to reflect on the meaning of their experiences with the phenomenon.[35] According to Seidman, the focus on describing past and present experiences helps the participants to reflect on the meaning of those experiences.

Rather than conducting three separate interviews with each participant, I used Seidman's three-interview approach to structure an open-ended, semistructured interview protocol for a single 60- to 75-minute interview with each participant. In addition to asking participants to describe their experiences in transitioning from high-school to college-level coursework,

I asked each participant to describe their first experience completing a college-level research assignment, including what they remembered about figuring out what they were expected to do, what strategies they used to develop their topics and to find and evaluate information to use in the assignment, and what feedback they received on the assignment. Using similar questions, each participant was then asked to describe their most recent experience with a research assignment within their major field(s) of study. Participants were asked to describe their understanding of what it takes to be a successful college student; how their confidence in completing academic research assignments had changed, if at all; how their strategies for figuring out what the expectations for performance had changed; and what role they believe academic research assignments played in their undergraduate education. I received permission from each participant to record the interview on my laptop, which was then transcribed by a professional transcription service.

Data Analysis

I used two methods to analyze the data that I collected: writing memos and coding. First, after the interviews were complete, I used the audio recordings to construct an experiential memo[36] for each of the students. The purpose of these experiential memos was to transform the interview data into a coherent narrative describing each of the participants' reflections on their experiences. These memos helped me to be open to the participants' lived experiences and aided in the process of identifying themes that cut across multiple interviews that could be used for the first phase of coding. Each participant was asked to review the experiential memo for their individual interview and invited to comment on my understanding of their experience. In addition to providing verification that I did not misunderstand or misinterpret their experiences, this was also an opportunity to provide more detail about their experiences, if necessary. Eight participants (27%) responded to my email invitation to provide feedback, each affirming that the experiential memo I had constructed was representative of their experience.

As I constructed the experiential memos, I began to record themes that were emerging to be used for an initial round of coding. In total, I identified 18 codes, including themes related to the study's research questions and conceptual framework and themes that emerged from the interviews, for the initial round of coding. Using Microsoft Word and Excel, I read through each interview transcript and applied these preliminary codes to the transcripts and copying and pasting portions of the transcripts into an Excel spreadsheet. After coding each transcript, I returned to the Excel spreadsheet and read the passages for each of the 18 codes. At this point, I identified salient themes to create a more detailed coding schema for a second round of analysis. At this point, I identified 171 codes. I used Dedoose, a web-based qualitative analysis application, to facilitate the second round of coding.

To facilitate the second round of coding, I grouped the transcripts into six groups—Black/African-American students, other students of color, white male students, white female Manchester students, and white female Springfield students. The purpose of these groupings was to identify potential themes within and across various demographic groups, as well as to provide built-in milestones for reflection and journaling after coding approximately five to seven transcripts. During the second round of coding, I wrote thematic memos.[37] When I completed the second round of coding for each group identified above, I wrote memos for that group of students based on the study's research questions. After writing these thematic

memos, I began to map the relationship(s) between the emergent themes and connected these themes to the study's conceptual framework.

Limitations

Although this study did not seek to recruit a sample that was representative of the entire first-generation student population, the demographics of the Manchester and Springfield campuses present a limitation. Nationally, first-generation students tend to be more diverse in terms of race/ethnicity; however, the Manchester and Springfield student bodies are predominantly white (73% and 79%, respectively). Despite this, the sampling strategy I employed resulted in overrepresentation for students of color. Students of color made up 24 percent of the eligible participant pool. Of the participants in the study, 33 percent identified as students of color, which is aligned with national trends.

Although phenomenological interviewing is a strength of this study, in that it allows for a longitudinal glimpse into students' information literacy development, students' memory is a limitation of this data collection method. In some interviews, a student may have been discussing a research assignment that happened two to three years prior. In addition, the emotions that students felt or the meaning that they made of an experience will change over time, as they have new experiences. They will remember and interpret past experiences through a different lens than they did at the time.

My former professional role at one of the two campuses included in this study might also present a limitation. I was a librarian at one of the two campuses for six years, including during the data collection phase for this study, and helped many students with their research assignments through formal or informal teaching activities. While my teaching role diminished over those six years, the participants located at that campus may have worked with me as first- and second-year students. This means that they might have chosen to participate in the study based on previous interactions with me or they may not have felt they could be entirely honest during the interview (in other words, the assumption that there is a correct way to answer the questions).

Findings

Data analysis revealed four themes related to factors that may enable or constrain students' development of their information literacy during their undergraduate academic experience through research assignments: 1) their experience transitioning from high school to college; 2) the perceived role(s) of research assignments in college; 3) perceived emphasis of product over process; and 4) their motivation to learn. These findings are intended to serve as indicators of how students navigated the process of identifying and meeting their instructors' expectations for performance on research assignments in college. In other words, these findings highlight the ways in which these students perceived that they learned to become successful members of the undergraduate academic community with an explicit focus on the development of information literacy.

Transitioning from High School to College

The students in this study exhibited two different approaches to their academic transition from high school to college: a social approach and an individual approach. The approach that a student exhibited seemed to be related to how successfully they were able to transfer and

apply the academic skills and strategies that they developed in high school to their new collegiate environment. The approach that students exhibited seemed to affect the accumulation of social capital within their new academic environment.

Students who took a social approach initiated interactions with their instructors early in their collegiate careers, even if they did not feel entirely comfortable doing so, because they knew it would be important to their learning and success. When they recognized that their collegiate academic work seemed different from what they had done in high school, they seemed to understand that speaking with their instructor would help them to understand their new context. Not only were these interactions a way to fill gaps in knowledge or skills, some students saw this as an opportunity to establish a reputation as a "good student." Alexis shared, "If I didn't understand something, I would just go ask. Obviously, professors like their students that actually cared about their grades. That's what helped me establish a little bit of myself."

Other students exhibited an individual approach to this transition—they either did not know they could and should reach out to their instructors to support their learning and performance or they were too intimidated to do so. These students seemed to implicitly believe that the burden of determining and meeting instructors' expectations was solely on their shoulders. In some cases, high school teachers had scared some of these students, speaking in a threatening way about what college instructors would or would not tolerate. In other cases, they were intimidated by the educational and/or professional attainment of the instructors.

Students who took an individual approach often struggled with their research assignments in their first couple of years of college, because the expectations seemed different from high school and they had not yet developed support networks to help them to understand the expectations of their new educational context. Despite being diligent students, some of these students reported failing assignments or courses due to their performance on research assignments. For example, Emily applied the skills and strategies she had successfully used to complete high school research assignments when she first arrived at college. She felt that the paper was the best paper she had ever written and was "proud" of herself, so she was "heartbroken" to learn that she had plagiarized. She reflected, "It's just it was new and hard, and apparently, I didn't know what I was doing…I think it was just in high school, we were taught if you want to take a sentence exactly, you just use the quotations and cite it behind it. Well, they didn't want that. They want you to put it in your own words, but you still have to cite it."

However, students who took an individual approach seemed to benefit from required interactions with their instructors or with other learning support staff (such as writing tutors or librarians) as they were working on assignments. These required interactions conveyed the sentiment that instructors and staff were invested in students' success and wanted to support students in their courses. In addition, entry into a student's major field(s) of study helped the student to get to know their instructors over time. Both campuses were small, so students typically had the same instructor for multiple courses and they began to feel more comfortable approaching these instructors as they developed a relationship with them.

Although a shift to a social approach was evident in most students' reflections as they settled into their college major and got to know their instructors, there were positive longer-term implications for students who took a social approach to the high school-to-college transition. These students were more likely to leverage the social capital they had accumulated

into opportunities for mentoring and higher levels of achievement, including working on a faculty member's research project, presenting at conferences, or being explicitly groomed for graduate school. These kinds of opportunities have the potential to help students develop more sophisticated information literacy and critical thinking skills that could be applied to their future academic or professional lives.

Role of Research Assignments

When asked about the purpose of research assignments in college and why instructors gave students these assignments, many students perceived that these assignments were situated learning experiences, though they didn't use that phrase. The students described several purposes of research assignments in college, including the assessment of learning, the opportunity to learn more about topics related to the course, the demonstration of critical thinking skills, opportunities to challenge students, and preparation for postcollege life.

In general, students believed that research assignments in lower-level courses were meant to prepare them for future research assignments, including their capstone experiences. Alexis alluded to this process of becoming, sharing, "I think the smaller ones are to lead us up to what's expected of us our upperclassmen years. Trying to get as meshed into the college world, coming from high school. Doing it a little but more gradually than just throwing a big, huge project at us." Gabrielle shared a similar sentiment, reflecting, "All throughout my three and a half years, four years being here, it's all been research and papers —I was like, no wonder why they started me off in [basic composition] because it's a lot that you need to know, especially with these research papers." Just as students reported that many of their professors broke larger research assignments into smaller assignments to help them progress toward completing the larger assignment in a course, many students perceived similar scaffolding within the curriculum.

Students indicated that capstone projects were intended to demonstrate that students learned what they were supposed to learn throughout their collegiate experience, validating them as more established members of the community. Cheyenne shared, "I guess that's what they want to see, if we learned what they taught us, if we were paying attention to what they were teaching. Yeah, the capstone's really throwing everything that I've learned from all the [professors in my major] into one thing." Gabrielle elaborated on the validation of membership in the community, stating, "What have you learned all the way up to now that you can take from this?…Providing that you passed it, you're ready. You've done your job here, pretty much. You've learned everything that you needed to know." These perceptions of the purpose of the capstone experience indicate that students are aware that learning is scaffolded and cumulative, and they are expected to demonstrate how much they have learned since throughout college. In other words, successful performance on the capstone project was indicative of successful participation in the community.

Product over Process

Students perceived that final products, such as papers or presentations, were valued more than the processes they used to develop the products. In general, students reported being taught a checklist approach to evaluating and using sources in high school, and for many students the perception of product-over-process reinforced that approach. Most students reported being taught the same basic set of evaluation criteria in high school, and they relied on these criteria in college. These criteria include looking at a website's domain (like .org, .gov, .edu),

avoiding Wikipedia, looking at the author and publication date, and fact-checking a source by looking at other sources. The ways in which students described applying these criteria suggested that they approached information evaluation as a process of checking off boxes on a list rather than as a process that included critical thinking.

However, many students noted that the stakes felt higher in college and realized that some of the items on their checklist needed to change in their new environment. Frequently, this resulted in peer-reviewed or scholarly articles being added to the checklist. Dustin succinctly made this comparison—"High school, it was credible. [The sources we used] were real, not fake ones, but never official scholarly stuff." Kayla elaborated a bit more on this change, sharing, "In high school you just Googled and found some [sources]. I knew definitely not to use Wikipedia or something like that, but I mean sometimes you'd grab a book. I mean you would just look it up and if it looks like a legitimate source then it was okay. College and I think definitely because of just the audience that we were writing for and how not necessarily serious, but I mean it's not a joke anymore. It's college. It's a real research paper."

Even though many students shared that the stakes felt higher in college and that they recognized a commensurate difference in their instructors' expectations, this often did not seem to result in deep or critical engagement with their sources. Part of this was based on the feedback they received from their instructors on their work, which seemed to reinforce that the students could be successful without this kind of deep and critical engagement. In other words, they did not perceive that the development of more sophisticated modes of thinking related to information-seeking and use was important to participate successfully in the undergraduate academic community. Many students perceived the emphasis to be on their writing skills, including both grammar and style. Brooke reflected, "I think mostly it was grammar and spelling, and then I know she focused a lot on using different types of sentence structure. She would try to get us to change our sentences so we weren't using all the same. I don't think [sources] was really a big thing." When students did receive feedback on their sources, particularly written feedback, they reported it was mostly related to correcting errors in their citations, not necessarily about the ways in which the students engaged with and used the contents of those sources.

Motivation to Learn

Students' motivation to learn more about a particular topic, especially if it was salient to their identities, seemed to result in deeper engagement with sources and the demonstration of the dispositions and knowledge practices related to information literacy. Two different orientations to research assignments emerged from the interviews—a performance orientation and a learning orientation—the latter of which seems to be critical for the development of information literacy.[38] In a performance orientation, students expressed an interest in doing well on the assignment. They typically picked a topic that was of interest to them as a way to motivate themselves to complete the assignment and lower the barrier to success. Students who exhibited a learning orientation not only wanted to do well on the assignment, they also expressed a genuine desire to learn or to help others learn as a result of the research that they were doing. Students whose identities were minoritized beyond their first-generation status seemed more likely to exhibit a learning orientation.[39] Of the students who participated in the study, only students who demonstrated a learning orientation exhibited some of the dispositions and knowledge practices related to informa-

tion literacy. In this section, I provide three examples of a learning orientation and how it relates to information literacy.

A few of these students shared an awareness of existing discourse about their topics in nonscholarly communities of which they were a part. For example, Malik, a Black male, identified the discourse about gentrification in Black popular culture, pointing to its presence in the popular film *Boyz n the Hood*. He shared, "There was a scene in that movie where Furious Styles explains to everyone in Compton, California, the effects of gentrification and how it was affecting their area in Long Beach or Compton or wherever they live. He was explaining to them how the property value would increase as they moved more of the Black people out by putting a gun store and a liquor store on each corner of the neighborhood and have the blacks kill themselves or make themselves even poorer just so that they can get moved out of the area and then watch their home value increase." Here Malik demonstrated an interest in combining his lived experience with gentrification and the discourse found in Black popular culture to educate his peers at the predominantly white Manchester campus about this issue. Students who were motivated to learn about their topics demonstrated an awareness that their research was not happening in a vacuum. They identified relevant and specific sources of the discourse, particularly in the media or in popular culture, and exhibited a desire to engage with the discourse through their research assignments.

Other students who articulated a motivation to learn approached research as a form of inquiry and sought multiple perspectives on their topics. Gabrielle, a Black female, for example, makes gathering multiple perspectives on her topic a priority in her capstone project related to racism. Gabrielle explained, "I was just like, maybe I should just go around and ask people, not a big group like that, but actually ask questions and then see what they know, and then see if they know stuff that they can give back to me…. I wanted to make sure that I had an equal amount of color in the room. I wanted people that was Puerto Rican. I wanted people that was White. I wanted people that was Black. I wanted people that was Asian, because I wanted to see exactly how they interacted and how they felt about answering those questions." Gabrielle implied that speaking generally to other people about racism was not enough to develop her own understanding of the topic; rather, it was critical for her own learning to engage students of varying races and ethnicities who may share multiple and differing perspectives on this topic.

Finally, some of these students indicated that they considered the contextual nature of authority when evaluating and selecting information sources to use in their research assignments. Despite scholarly or peer-reviewed journal articles being the gold standard for sources in college, these students did not rely solely on that category of information sources to determine whose voices needed to be incorporated into their research and moved beyond a checklist approach to gathering appropriate information sources. For example, Jasmine, a Black female, conducted interviews with people who were witnessing the school-to-prison pipeline in her hometown first-hand to get a more complete picture of her topic. She shared, "[A news article] was also factual…. It was just telling you what happened and what's going on, but…I wasn't trying to get a biased opinion from other people [that is, the news sources]." Jasmine recognized that news sources typically convey factual information, but that factual information may only present one side of the story. However, she recognized the authority and credibility of first-hand witnesses with varying experiences of and perspectives on the school-to-prison pipeline in her hometown.

Discussion

The belief that information literacy is situated within sociocultural contexts was foundational to this research study. Although some ways of thinking, knowing, and communicating may be transferred between contexts, what constitutes acceptable information use and knowledge creation is defined within particular contexts. The purpose of this research study was to learn more about first-generation college students' experiences with research assignments in college as an initial exploration into the ways in which they learn how to successfully meet their instructors' expectations for performance on these assignments, as well as attempting to understand the ways in which their information literacy developed during college. In this article, I seek to identify some factors that might either enable or constrain students' development of information literacy in college to inform our teaching and learning work with students and instructors, paying attention to the sociocultural nature of information literacy.

The findings indicate several factors that could enable students' development of information literacy during their collegiate experience. First, and perhaps not surprising, is students' high school academic experiences, including how well those experiences prepared them for college in general but also for research assignments more specifically. In this study, this transferability between high school and college also seemed to be related to the ways in which these students began to build social capital, which provided them with important information related to instructors' expectations for performance, in their new context.

While the transferability between high school and collegiate academic experiences can serve as enabler to the continued development of students' information literacy during college, it can also serve as a constraint. In addition, it could have implications for the intersections of equity, social justice, and information literacy. Primary and secondary public-school attendance in the United States is largely based on where a student lives, and residential segregation (by both race/ethnicity and socioeconomic status) is prevalent across the United States. Based on funding structures for public schools, which heavily rely on residential taxes, school districts that serve primarily students of color and lower-income students are often underfunded and underresourced. If these students are not receiving the same quality of education that their peers in more affluent neighborhoods are, this has implications for existing and persistent equity gaps in higher education. In other words, first-year students are not entering college on a level playing field, even when their abilities and capacity for success are similar, and the findings of this study suggest that this might extend to their information literacy.

Furthermore, this constraint might also be exacerbated by intimidation that many of the students whose high school experiences did not seem to prepare them for college-level research assignments reported feeling when interacting with their instructors. Although it was not mentioned specifically by the students in this study, it is likely that some of these students did not perceive that their instructors had identities that were similar to their own based on perceptions of race or socioeconomic status. However, these students generally responded positively when their instructors proactively engaged them or encouraged or required them to meet with other learning support staff like librarians or tutors, with whom the students began to develop supportive relationships.

Finally, there might be negative implications for students who took an individual approach to the transition to college in terms of their sense of belonging or academic identities. These students often reported struggling with research assignments, and they did not feel they had the information they needed to be successful. Consistently struggling with research

assignments due to a lack of information about expectations could lead students to question their capabilities and their ability to be successful in college, which affects the motivation and effort students will put into their coursework and their learning.[40] Even if these students persist, they might be less likely to put significant effort into their assignments, thus resulting in a missed opportunity to develop or refine their information literacy.

Another factor that seemed to serve as a significant enabler to the development of students' information literacy was the meaningfulness or personal significance of the assignment topic to the student. This potential enabler also seemed to help some students overcome product-over-process mentalities and overreliance on checklists that seem to serve as potential constraints to the development of students' information literacy within the collegiate context. Findings from The Meaningful Writing Project suggest that, when students found meaning or significance in their academic work, including assignments like research assignments, they perceived that they were able to more fully engage with course-related content and that these assignments helped them to transfer their learning to other courses or contexts.[41] The students in that study indicated that this was due to the personal connections they felt to their academic work, the relevance they perceived to their academic, personal, or professional lives, and the ability to fully immerse themselves in writing and research.

Another potential enabler was the students' recognition of the expectation to develop more sophisticated research processes as they moved throughout the curriculum. In theory, these students seemed to know that they were expected to become better and more sophisticated researchers throughout college. This is positive, because this suggests they do not fully believe that the ways of thinking and knowing related to information use are completely static, as previous research has suggested.[42] However, the feedback (or lack of feedback) that many students received from their instructors provides a potential counterbalance to this. Many instructors likely intend to develop students' information literacy and critical thinking, but some of their practices or behaviors might be antithetical to that goal, including the feedback that they give and the ways in which they grade research assignments. In practice, students did not perceive that it was important for them to continually develop these skills to be successful in college and that their instructors valued the final products the students were submitting more than the process used to develop those products.

In terms of the working conceptual model, these findings provide some insight into how students begin to navigate the undergraduate academic context, including the ways in which they develop strategies for gaining information about performance expectations about research assignments and the ways in which students interpret messages from instructors about the cultural values of this community. Students demonstrated two approaches to building social capital, particularly with their instructors. Not only did a student's approach seem to affect opportunities for higher levels of achievement (such as working on an instructor's research or presenting at a conference), it could have implications for students' self-efficacy related to information literacy and research assignments, since students who took an individual approach struggled through research assignments in the first couple years of college.

These findings also provide some evidence for how students might interpret messaging about values of the community related to information literacy and research assignments. On a positive note, students did seem to recognize the scaffolding within the curriculum, particularly related to research assignments, and the belief that students will continue to develop

their information literacy, critical thinking, and research skills throughout their collegiate careers. In other words, students perceived that they were not expected to be fully established members of this new community upon entry; rather, instructors intended to help them learn and grow through participation. On the other hand, many believed that instructors value the final product over process, which conflicts with the previous value. Though many instructors might be aware that students are placing more time and effort on the final product than the research process, they might be surprised about the ways in which students believed instructors are reinforcing this belief. In addition to thinking carefully about the feedback instructors give, the findings suggest that creating learning environments that motivates students—allowing students to identify topics or issues that are personally or academically meaningful to them—might be a strategy to help overcome messaging that emphasizes product over process and enable active engagement and/or participation within the academic community.

Recommendations for Practice

The following recommendations for practice are rooted in Michelle Holschuh Simmons' conceptualization of librarians as discourse mediators.[43] Academic librarians hold a "unique position that allows mediation between the non-academic discourse of entering undergraduates and the specialized discourse of disciplinary faculty" due to being "simultaneously insiders and outsiders of the classroom and of the academic disciplines in which [we] specialize."[44] When the concept of discourse mediation is combined with an acknowledgment of the sociocultural nature of information literacy, it creates exciting opportunities for us to partner with students and instructors to facilitate the teaching and learning processes. Some of these recommendations might seem problematic, considering the issues of acculturation that I brought up earlier. I have addressed some of these issues in a different publication[45] and encourage us, individually and collectively, to carefully consider how we can make expectations for performance in academic culture more inclusive and equitable.

First, librarians should consider partnering with instructors of key gateway courses, either in the general education curriculum or majors, to pilot required individual consultations with students that help them to recognize what they already know and can do that will transfer to their new collegiate context and to decode or identify explicitly their instructors' expectations. I recognize both that many librarians might already be doing this and that there are some clear scalability and sustainability issues with this kind of recommendation. However, I urge some consideration of how resources might need to be allocated differently to accommodate this, because the findings indicate that the development of relationships with learning support faculty and staff have positive implications for students' ability to learn the expectations related to college-level research assignments; and the students who might benefit from these interactions the most might be the least likely to initiate them. This might require a reduction in more traditional one-shot instruction sessions or a reallocation of funding and staff time to hire and rigorously train peer coaches, who are often used in writing and tutoring centers. Even if this recommendation is not ultimately achievable, I believe the consideration of it could create new approaches to partnering with students and instructors in the learning process, one that could go beyond one-shot instruction sessions and voluntary, student-initiated consultations.

My second recommendation is to consider developing and implementing instructor development programming,[46] which makes visible the expertise that librarians have related to

student learning and the development of their information literacy.[47] In a recent publication,[48] I urged librarians to consider working with instructors to use approaches like Decoding the Disciplines[49] and Transparency in Learning and Teaching (TILT Higher Ed)[50] to help develop students' information literacy in more intentional and equitable ways. The benefits of these approaches are that they can help instructors not only to more explicitly articulate expectations that are difficult to communicate (that is to say, somewhat abstract ways of thinking and knowing), but they could also result in better feedback that helps to fight against the product-over-process mentality. Another possibility is focusing on the benefits of asset-based or strengths-based approaches that enable students' motivation to learn and help them to recognize the transferability of the information literacy they have developed in other contexts to collegiate academic culture.[51] Allowing students to leverage their strengths had clear positive implications for the development and demonstration of students' information literacy in this study. In addition, instructor development programming that makes visible our expertise in areas like digital humanities, geospatial data and tools, open educational practices, and publishing and articulates how this expertise could aid in the development of engaging and authentic learning experiences should be considered. Finally, instructor development programming is also an opportunity to partner with other units at our institutions that have similar goals, such as writing centers or writing across the curriculum/disciplines programs.

Finally, we should consider sustainable and scalable ways to work with school librarians and K–12 faculty in our areas, especially for those at institutions that receive a good portion of students from public school districts in the surrounding region. Because both academic and school libraries are in positions of attempting to do more with fewer resources, this kind of partnership needs to be at the programmatic level rather than ad hoc or individual partnerships. Examples of potential partnerships would be joint professional development, in which academic librarians discuss the information literacy expectations students will face in college, and school librarians can share how information literacy is approached in K–12 classrooms. There could also be collaborative syllabi reviews to see where there may be significant curricular or learning outcomes gaps between eleventh or twelfth grade and the first year in college, especially as it relates to expectations for research assignments. Academic and school librarians could work jointly with instructors to design classes in a way that provides students with a smoother transition.

Recommendations for Further Research

Further research about how undergraduate students develop and demonstrate their information literacy within collegiate academic culture is necessary to truly understand the ways in which librarians and instructors can effectively help students to develop these ways of thinking and knowing and transfer them among different contexts. This kind of research can also provide valuable information about the ways in which current academic practices at our institutions might be transformed to become more inclusive and equitable. More qualitative research, including the use of interviews and artifact analysis, into students' experiences with research assignments is necessary. Both cross-sectional and longitudinal studies would be valuable to identify if and how students develop their information literacy at different points within their undergraduate academic careers and what enables or constrains that development over time. This research needs to be inclusive in terms of its participant samples, so that we can understand a diverse range of experiences rather than making assumptions about all

students' experiences based on those of privileged groups of students. We also need to be careful not to establish normative experiences and use research to "fix" students who might be at the margins in terms of their identities or their experiences. Rather, this should be an opportunity to interrogate, critique, and transform cultural practices that are no longer inclusive. This research should be complemented with research that investigates different methods or approaches to developing students' information literacy, above and beyond an analysis of one-shot sessions, to identify teaching practices that are both effective in developing students' information literacy and inclusive of our diverse student populations.

Acknowledgments

The author would like to thank the reviewers for their thoughtful feedback. This manuscript is much stronger as a result.

Notes

1. This article draws upon a research study I conducted to complete the requirements of a doctoral program at the University of Pittsburgh. Some of the content that appears in "The Research Study" and "Findings" sections in this article manuscript also appears, word for word, in an unpublished doctoral thesis, which can be located here: http://d-scholarship.pitt.edu/id/eprint/35132.

2. The phrase "develop their information literacy" has two related yet distinct facets for me: Students are simultaneously expanding and refining their information literacy in 1) a general sense (that is to say, critical thinking as it relates to information evaluation and use in their personal, professional, and civic lives); as well as in 2) a specific sense (in other words, gaining knowledge about appropriate information evaluation and use behaviors within an academic and/or disciplinary context). This is based on previous scholarship from Annemaree Lloyd, in which she states, "becoming information literate is a holistic process influenced by social, physical and textual relationships with information, that requires a range of information practices and acknowledges the complexity and diversity of information sources within a landscape. By developing the textual, physical and affective skills necessary to navigate the sources within the landscape, we come to know and develop 'know how.' This relationship with information is the essence that lies at the heart of becoming an expert or having expertise in a particular context, or, to put it another way, of being information literate." See Annemaree Lloyd, "Information Literacy Landscapes: An Emerging Picture," *Journal of Documentation* 62, no. 5 (2006), 570–83.

3. Association of College & Research Libraries (ACRL), *Information Literacy Competency Standards for Higher Education*, available online at https://alair.ala.org/handle/11213/7668; ACRL, *Framework for Information Literacy for Higher Education,* available online at https://www.ala.org/acrl/standards/ilframework.

4. Christine Susan Bruce, *Informed Learning* (Chicago, IL: ACRL, 2008); James Elmborg, "Critical Information Literacy: Implications for Instructional Practice," *Journal of Academic Librarianship* 32, no. 2 (2006): 192–99; James Elmborg, "Libraries in the Contact Zone: On the Creation of Educational Space," *Reference & User Services Quarterly* 46, no. 1 (2006b): 56–64; Annemaree Lloyd, *Information Literacy Landscapes: Information Literacy in Education, Workplace and Everyday Contexts* (Oxford, UK: Chandos Publishing, 2010); Mandy Lupton, "Evidence, Argument and Social Responsibility: First-Year Students' Experiences of Information Literacy when Researching an Essay," *Higher Education Research & Development* 27, no. 4 (2008): 399–414; Karen Nicholson, "Information Literacy as a Situated Practice in the Neoliberal University," *Proceedings of the Annual Conference of the Canadian Association for Information Science* (2014), available online at www.cais-acsi.ca/ojs/index.php/cais/article/view/901; Kimmo Tuominen, Reijo Savolainen, and Sanna Talja, "Information Literacy as a Sociotechnical Practice," *Library Quarterly* 75, no. 3 (2005): 329–45; Li Wang, "Sociocultural Learning Theories and Information Teaching Activities in Higher Education," *Reference & User Services Quarterly* 47, no. 2 (2007): 149–58.

5. Christine Bruce and Hilary Hughes, "Informed Learning: A Pedagogical Construct Attending Simultaneously to Information Use and Learning," *Library & Information Science Research*, 32, no. 4 (2010): A2–A8; Annemaree Lloyd and Kirsty Williamson, "Towards an Understanding of Information Literacy in Context: Implications for Research," *Journal of Library and Information Science* 40, no. 1 (2008): 3–12; Mandy Lupton and Christine Bruce, "Window on Information Literacy Worlds: Generic, Situated and Transformative Perspectives," in *Practising Information Literacy: Bringing Theories of Learning, Practice, and Information Literacy Together*, eds. Annemaree Lloyd and Sanna Talja (Wagga Wagga, NSW: Centre for Information Studies, 2010), 3–27.

6. Bruce, *Informed Learning*; Elmborg, "Critical Information Literacy"; Elmborg, "Libraries in the Contact

Zone"; Lloyd, *Information Literacy Landscapes*; Lupton, "Evidence, Argument and Social Responsibility"; Nicholson, "Information Literacy as a Situated Practice in the Neoliberal University"; Tuominen, Savolainen, and Talja, "Information Literacy as a Sociotechnical Practice"; Wang, "Sociocultural Learning Theories and Information Teaching Activities in Higher Education."

7. Lloyd, *Information Literacy Landscapes*, 9.

8 Lloyd, *Information Literacy Landscapes*.

9. Lev Vygotsky, *Mind in Society: The Development of Higher Psychological Processes* (Cambridge, MA: Harvard University Press, 1978), as cited in Wang, "Sociocultural Learning Theories and Information Teaching Activities in Higher Education," 151.

10. William Miller, "The Future of Bibliographic Instruction and Information Literacy for the Academic Librarian," in *The Evolving Educational Mission of the Library*, eds. Betsy Baker and Mary Ellen Litzinger (Chicago, IL: Bibliographic Instruction Section, ACRL, ALA, 1992); Stanley Wilder, "Information Literacy Makes All the Wrong Assumptions," *Chronicle of Higher Education* 51, no. 18 (2005): B13.

11. Rolf Norgaard, "Writing Information Literacy: Contributions to a Concept," *Reference & User Services Quarterly* 43, no. 2 (2003): 124–30.

12. Amanda L. Folk, "Reframing Information Literacy as Academic Cultural Capital: A Critical and Equity-Based Foundation for Practice, Assessment, and Scholarship," *College & Research Libraries* 80, no. 5 (2019): 658–73.

13. Lloyd, *Information Literacy Landscapes*.

14. Jean Lave and Etienne Wenger, *Situated Learning: Legitimate Peripheral Participation* (Cambridge, UK: Cambridge University Press, 1991). Lave and Wenger's original conceptualization of communities of practice is different from the typical use of this concept in contemporary librarianship (that is to say, as a community of learners focusing on a particular topic or skills).

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16. Lloyd, *Information Literacy Landscapes*, 20.

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18. Jane Tapp, "Framing the Curriculum for Participation: A Bernsteinian Perspective on Academic Literacies," *Teaching in Higher Education* 20, no. 7 (2015): 711–22.

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21. Elmborg, "Critical Information Literacy," 195.

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26. Valentine, "The Legitimate Effort in Research Papers."

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29. Stephens, Hamedani, and Destin, "Closing the Social-Class Achievement Gap."

30. Peter J. Collier and David L Morgan, "'Is That Paper Really Due Today?': Differences in First-Generation and Traditional College Students' Understandings of Faculty Expectations," *Higher Education* 55, no. 4 (2008): 425–46.

31. Elmborg, "Critical Information Literacy"; Nicholson, "Information Literacy as a Situated Practice in the Neoliberal University."

32. Folk, "Reframing Information Literacy as Academic Cultural Capital."

33. For other publications that focus on the intersection of first-generation students, information literacy, and the LIS literature, see Amanda L. Folk, "Drawing on Students' Funds of Knowledge: Using Identity and Lived Experience to Join the Conversation in Research Assignments," *Journal of Information Literacy* 12, no. 2 (2018): 44–59; Darren Ilett, "A Critical Review of LIS Literature on First-Generation Students," *portal: Libraries and the Academy* 19, no 1. (2019): 177–96; Darren Ilett, "First-Generation Students' Information Literacy in Everyday Contexts," *Journal of Information Literacy* 13, no. 2 (2019): 73–91.

34. Irving Seidman, *Interviewing as Qualitative Research: A Guide for Researchers in Education and the Social Sciences*, 4th ed. (New York, NY: Teachers College Press, 2009).

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36. Max van Manen, *Phenomenology of Practice: Meaning-Giving Methods in Phenomenological Research and Writing* (Walnut Creek, CA: Left Coast Press, 2014).

37. Van Manen, *Phenomenology of Practice*.

38. Folk, "Drawing on Students' Funds of Knowledge"; Folk, "Learning the Rules of Engagement."

39. Folk, "Drawing on Students' Funds of Knowledge"; Folk, "Learning the Rules of Engagement."

40. Susan A. Ambrose et al., *How Learning Works: Seven Research-Based Principles for Smart Teaching* (San Francisco, CA: Jossey-Bass, 2010).

41. Michele Eodice, Anne Ellen Geller, and Neal Lerner. *The Meaningful Writing Project: Learning, Teaching, and Writing in Higher Education* (Logan, UT: Utah State University Press, 2016).

42. In a study conducted by Melissa Gross and Don Latham, undergraduate students did not necessarily perceive information literacy or research skills as something to be developed over time. They seemed to believe that anyone can perform these kinds of tasks, especially younger persons whom they perceived as being more familiar with technology. See Melissa Gross and Don Latham, "Undergraduate Perceptions of Information Literacy: Defining, Attaining, and Self-Assessing Skills," *College & Research Libraries* 70, no. 4 (2009): 336–50.

43. Michelle Holschuh Simmons, "Librarians as Disciplinary Discourse Mediators: Using Genre Theory to Move Toward Critical Information Literacy," *portal: Libraries and the Academy* 5, no. 3 (2005): 297–311.

44. Simmons, "Librarians as Disciplinary Discourse Mediators," 298.

45. Folk, "Reframing Information Literacy as Academic Cultural Capital."

46. Jane Hammons provides a nice overview of instructor development programming—sometimes referred to as train-the-trainer or teach-the-teacher programming—in Jane Hammons, "Teaching the Teachers to Teach Information Literacy: A Literature Review," *Journal of Academic Librarianship* 46, no. 5 (2020): 1–13. The following citations provide a few recent examples of instructor development programming: Jane Hammons et al., "Beyond the Library Walls: How a Faculty Institute Transformed Information Literacy Education across Campus," *Kentucky Libraries* 83, no. 1 (2019): 7–11; Hicks and Howkins, "Tipping the Iceberg"; Barbara Junisbai, M. Sara Lowe, and Natalie Tagge, "A Pragmatic and Flexible Approach to Information Literacy: Findings from a Three-Year Study of Faculty-Librarian Collaboration," *Journal of Academic Librarianship* 42, no. 5 (2016), 604–11; Clarence Maybee, *IMPACT Learning: Librarians at the Forefront of Change in Higher Education* (Oxford, UK: Chandos Publishing, 2018); Rachel Wishkoski, Kacy Lundstrom, and Erin Davis, "Faculty Teaching and Librarian-Facilitated Assignment Design," *portal: Libraries and the Academy* 19, no. 1 (2019): 95–126; Rachel Wishkoski, Kacy Lundstrom, and Erin Davis, "Librarians in the Lead: A Case for Interdisciplinary Faculty Collaboration on Assignment Design," *Communications in Information Literacy* 12, no. 2 (2018): 166–92.

47. For recent scholarship on the meaningful contributions that librarians have to make to student learning that is related to the concept of discourse mediator, I recommend Michelle Reale, *Inquiry and Research: A Relational Approach in the Classroom* (Chicago, IL: American Library Association, 2019).

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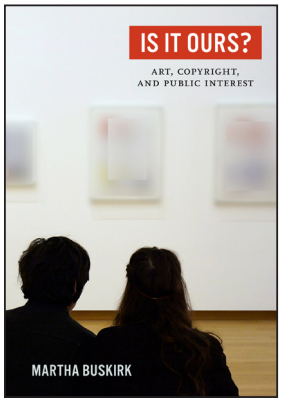
of the Executive Vice President and Provost, University of Nevada, Las Vegas, "Transparency in Learning and Teaching in Higher Education," https://tilthighered.com/ [accessed 28 August 2020].

51. See the following for recent scholarship on this topic: Chelsea Heinbach et al., "Dismantling Deficit Thinking: A Strengths-Based Inquiry into the Experiences of Transfer Students in and out of Academic Libraries," *In the Library with the Lead Pipe* (February 6, 2019), www.inthelibrarywiththeleadpipe.org/2019/dismantling-deficit-thinking/ [accessed 28 August 2020]; Tatiana Pashkova-Balkenhol et al., "Should We Flip the Script: A Literature Review of Deficit-Based Perspectives on First-Year Undergraduate Students' Information Literacy," *Journal of Information Literacy* 13, no. 2 (2019): 92–111.

Book Reviews

Martha Buskirk. ***Is It Ours? Art, Copyright, and Public Interest.*** Oakland, CA: University of California Press, 2021. 304p. Hardcover, $50.00 (ISBN 9780520344594).



In the past, intellectual property (IP) law wasn't something the average person considered in their day-to-day lives, but the current pervasiveness of multimedia technology has brought it front and center. We depend on screens for work, education, and entertainment, and the internet and social media make it easy to consume, create, copy, and distribute content. Copyright issues that were previously the purview of creators and lawyers now impact everyone. Librarians are fielding questions from faculty and students, especially those in the arts: can I use this image/music/film in my project or class? And the answer is usually a very unsatisfying "it depends…" followed by a thorny discussion where, with disclaimers, we attempt to give advice that straddles the line between legalities and support for creative expression.

How did we get here? This is the question that Martha Buskirk seeks to answer in *Is It Ours? Art Copyright and Public Interest*. A professor of Art History and Criticism, Buskirk brings a historian's perspective to the topic of intellectual property and the arts. Although the book is organized thematically rather than chronologically, it begins with an overview of the origins of copyright law in the publishing industry, setting the stage for all the complexities we wrestle with today. Each successive chapter unpacks a facet of the topic in great detail, using a myriad of case studies to illustrate the conflicts that characterize intellectual property law. These include the tension between ownership and authorship, creative freedom and creator rights, public and private, the individual and the collective.

The author notes the challenges of limiting the scope of this book. Most of the legal cases cited are in the United States, and there are frequent comparisons between the Anglo-American and European approaches to IP that dominate the field. However, culture is increasingly global, and wealthy Western countries are pressuring others to adopt Western copyright laws even if they are incompatible with local traditions. This element of power struggle/power imbalance is a recurring theme.

The first copyright laws were established in Great Britain in the eighteenth century, ostensibly to protect the rights of literary authors. The argument was that authors would be incentivized to create, ultimately benefiting society as a whole. However, from the beginning, it was publishers rather than authors who lobbied the hardest for copyright protections, and therefore publishers rather than authors who benefited the most financially. The appetite for free or inexpensive cultural content was and still is in conflict with publishers' desire to control access to and profit from that content. Every technological advancement in the means of reproduction, from analog to digital, propelled a cat and mouse game between rights holders and consumers. Buskirk effectively illustrates how, at each inflection point, publishers have sought to extend copyright protections to new media, and the law plays catch-up to the technol-

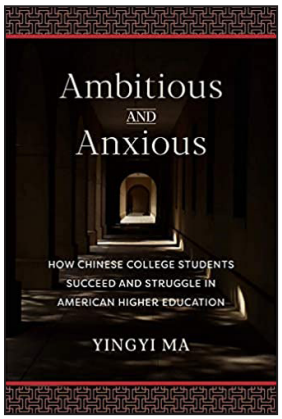
ogy. This yields problematic side effects that tend to favor those with the resources to lobby for their interests, usually corporations. It ties the hands of authors and artists who desire to build on and respond to existing art to create new work and limits the options available to educators and organizations such as libraries and museums who seek to promote and preserve cultural works.

As befitting the subtitle "Art, Copyright and Public Interest," most of the examples given are drawn from the world of the visual arts in the twentieth and twenty-first centuries, specifically painting, sculpture, and architecture. However, it quickly becomes evident that, when considering "public interest," a sprawling array of media is drawn in for discussion including music, graffiti, tattoos, fashion, film, and video games. Essentially, the topic of IP is inescapable as it overshadows all aspects of our culture. Niche examples include tattoo artists suing for infringement when their designs are reproduced on celebrities featured in video games while others impact a broader public, such as the wrangling over the rights to the "Happy Birthday" song.

In the latter half of the book, the author spends significant time delving into the rarified world of the luxury art market. Though interesting, details of six-figure art deals among wealthy clients, exclusive galleries, and auction houses may not be resonant for most readers. At most, they act as a microcosm of the often-contentious relationship between authors and owners. However, Buskirk concludes the book with a "Coda" in which she speculates on how the intersection of intellectual property law, virtual and augmented reality, and data privacy could create a whole new assortment of threats to individual freedoms and collective culture. Ultimately, she argues, "What's at stake is nothing less than our ability to engage in a dialogue with shared cultural resources, the preservation of that heritage for future generations, and our rights over ourselves."

Throughout *Is it Ours?* the author makes liberal use of citations, which are listed by chapter in "Notes" at the end of the book, along with a list of illustrations and an index. While the author does not help librarians answer the practical question, "Can I use this?" the meticulously researched material makes this text a good reference for librarians, faculty, and graduate students desiring context for the constantly evolving copyright landscape and its impact on our culture.—*Carla-Mae Crookendale, Virginia Commonwealth University*

Yingyi Ma. ***Ambitious and Anxious: How Chinese College Students Succeed and Struggle in American Higher Education***. New York, NY: Columbia University Press, 2020. 312p. Paper, $35.00 (ISBN 978-0231184588).



Ambitious and Anxious: How Chinese College Students Succeed and Struggle in American Higher Education by Yingyi Ma challenges the monolithic image of Chinese international students at US colleges. Ma, an Associate Professor of Sociology at Syracuse University, attained her bachelor's degree in China and came to the United States as a fully funded graduate student. She contrasts her background with the new generation of Chinese students in the United States who are mostly self-funded and are more likely to be undergraduate students.

Ambitious and Anxious informs this population's heterogeneous realities. For example, it includes stories of Chinese international students whose families had to sell their houses to fund their college education

in the United States, as well as privileged students whose parents are college educated and wealthy. Some of them are fluent in English, while others struggle at communicating in English. The book also touches on the impact of the growing Chinese economy and US colleges' financial dependence on out-of-state and international students, which provides helpful context for these students' experiences.

The purpose of the book is to explore and analyze the experiences of recent Chinese undergraduates in the United States, focusing on "the duality of ambition and anxiety" (7) manifested through their experiences. They are ambitious about getting into highly ranked colleges, gaining global perspectives, choosing the right major, benefiting from both US and Chinese education, and increasing cultural flexibility and social mobility. At the same time, they are anxious about navigating the US college admissions process, making American friends, balancing their pragmatic values with varied American values, getting used to academic norms in the United States, preserving family wealth in China, and surviving the challenging immigration environment in the United States. The book describes Chinese undergraduate students' experiences over three stages: before their arrival in the United States, while attending US colleges, and after graduation. It focuses on full-time undergraduates at four-year colleges and features students who were born in the 1990s.

Ma uses both quantitative and qualitative data sources for her analysis. The sources she employed for macro-level quantitative data include the Chinese Ministry of Education, the Institute of International Education, and the US National Science Foundation. For individual students' data and narratives, she used three different methods: 1) an online survey to gather data on demographics, social networks, academic records, and their plans after graduation, with responses from 507 participants from 50 colleges; 2) one-on-one interviews with 65 Chinese college students in the United States; and 3) fieldwork in eight public high schools and one private high school in China.

Ma's analysis is balanced and nuanced. In chapter 1, Ma uses individual students' stories and supporting data to describe their ambition and anxiety. For example, although the majority of these students are paying full tuition, some started college in China and transferred to reduce the financial burden on their parents. They are singletons due to China's one-child policy, which existed in the 90s, and are under high expectations from their parents. In chapter 2, Ma shows that studying abroad serves as an alternative to the Gaokao, the highly competitive national college entrance examination in China, and liberates students from the test-oriented Chinese education system. Ma's study finds that students rely on rankings, agents, and parental networks to choose colleges.

Chapter 3 describes different pathways Chinese international students reach US colleges, presents the role of for-profit agencies, and explains how the cost of tuition stratifies their pathways. Ma finds that parental education and students' English proficiency affect college placement in the United States and that first-generation college students are less likely to attend selective institutions. Chapter 4 shows that these students believe that US education cultivates creativity and critical thinking while Chinese education cultivates perseverance and persistence. They are motivated to benefit from both education systems, although they feel anxious about negative profiling, stereotyping, and academic integrity accusations by their peers.

Chapter 5 examines the lack of social integration of Chinese students at US colleges and discusses the rationales for their voluntary protective segregation. These students avoid party

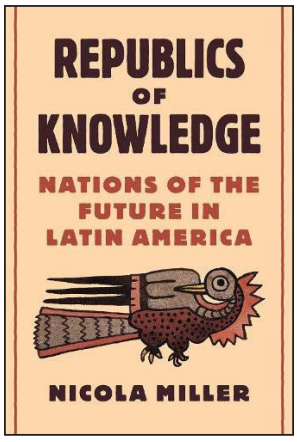
culture and try to protect themselves from neo-racism. Ma finds that participation in campus organizations helps boost friendships between Chinese and American students. Chapter 6 explains why Chinese students tend to choose STEM and business majors at US colleges. Ma argues that pragmatic collectivism, as well as language and cultural barriers, plays a role in Chinese students' decisions. Chapter 7 examines Chinese international students' classroom behaviors and describes their challenges associated with the language barrier and cultural differences.

Chapters 8 and 9 reflect on the changes in Chinese international students' lives after studying in the United States and debunk the myth that they come to the United States to study and migrate. Chapter 10 summarizes the findings and presents implications. Ma suggests that US colleges proactively reach out to Chinese international students so that they can avoid solely relying on ranking data and for-profit agents. She also emphasizes the importance of robust orientation programs and student services and advocates for expanded career services.

The strengths of this book include the use of rigorous mixed methods, using both quantitative and qualitative data. Additionally, Ma not only discusses trends but also shares counternarratives to demonstrate the heterogeneity of the population. The challenges include the fact that this book does not discuss Chinese international students' mental health issues or gender inequality in detail.

As the number of Chinese international students in the United States continues to grow, librarians at US academic libraries will find this book valuable in understanding and supporting their needs. Additionally, US college administrators will find this book useful in recruiting Chinese international students more effectively. This book sheds light on the realities of Chinese international students' heterogeneous community and masterfully exposes the gaps in educational opportunities for this population in US colleges.—*Mihoko Hosoi, The Pennsylvania State University*

Republics of Knowledge: Nations of the Future in Latin America. Princeton, NJ: Princeton University Press, 2020. 304p. Paper, $39.95 (ISBN 9780691176758).



In *Republics of Knowledge*: *Nations of the Future in Latin America*, Nicola Miller, Professor of Latin American history at the University College London, offers a two-part book addressing the history of knowledge in Spanish America from independence in 1810 to 1910, when governments understood the importance of access to public knowledge as a key feature of modern nations. From a multipractice perspective, Miller addresses the contribution to knowledge by different people, institutions, societal manifestations, public debates, policy-making, and collective identities. The author relies on three case studies involving Chile, Argentina, and Peru and the transnational connections that are made during the nineteenth century with other countries in Spanish America. Miller's academic narrative style, set to Arno, and Old-style serif typeface in the classic Venetian tradition, is supported by citations and tables, taking the reader on a 10-chapter journey back in history covering topics including national and public libraries, literacy, infrastructure, land and territory, and the purpose of education.

Miller starts by describing the role of national libraries, inserted in these nations in the independence-era, as centers of "universal enlightenment" and trusted by people of differ-

ent political views. National libraries were indeed a site for producing and preserving public policies, societal views on knowledge, and the ideals of nationhood. Some of these national libraries started as public libraries, but, as Miller notes, even when they had some common ground, their priorities differed. The Buenos Aires library was seen as a "school of knowledge," the Chilean library had a repository emphasis, and in Peru the focus was "popular political rights." In these cases, the public library engaged public education, while the national library would serve as a repository for national culture.

Chapter 2 addresses knowledge learned or produced at public institutions, such as universities, immersed in the study of nature, the ancient classical world, and rhetoric. Although there were grievances affecting the modern educational system related to outdated curricula, Roman Catholic dogma conflicting with scientific knowledge, and the import of nonrelevant theories (which led to the University Reform Movement of 1918), social mobility through education was possible during the mid-nineteenth century. Chapter 3 captures the importance of printing as a tool for making knowledge widely available. Interestingly, Miller notes that press freedom "was deemed a basic republic right" used by governments to promote the ideals of public education. While there was a production of periodicals, books were brought from Europe at the expense of local writers. These institutions also faced issues related to liberty, morality, censorship, and economic factors that meant almost all production needs such as printing presses, typeface, ink, and paper were imported. Miller also highlights that iconographic evidence, the culture of attending court sessions, and literacy taught in the army to people from "pueblos originarios" documents the circulation of information before mass literacy is established.

Chapter 4 explores drawing as a propelling force for cultural expression and its place in educational reforms meant to mark a country as modern in independent Spanish America. Drawing was essential in cartography, depiction of landscapes, flora, fauna, natural history and science, architectural town planning, military strategies, artisanal industry, and the representation of national heroes and war scenes. There was an urge to create drawing schools and, even when resources were lacking, drawing classes were taught in public and private venues. Chapter 5 defines knowledge by considering the verb "ilustrar" (to enlighten, to instruct, to explain, to illustrate) and the Spanish term "illustración" and "pensamiento" to ultimately explain what it meant in the task to enlighten people.

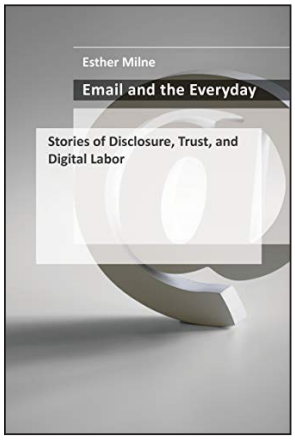
Part II begins by examining language in Spanish America as it relates to Spanish, a specific country's dialect, and the Indigenous language of the "pueblos originarios." This chapter highlights the debate surrounding language from the need to expand the correct use of the Spanish language and maintain its relevance to the value connected to Indigenous languages. Chapter 7 contemplates the value of land in building Spanish American nations. Miller explains that nationhood was connected to the environment, the land and its resources, and a historical commitment to a "society based on political freedom and social justice." Chapter 8 refers to classical political economics, in which Latin American economists of the late nineteenth and early twentieth century raised concerns about applying economic theories that worked in Europe to Latin American nations. For Latin American economists, especially worrisome were the export market over dependence, foreign investors' repatriation of profits, and losing control of banking, natural resources, and infrastructure.

The last two chapters of the book address infrastructure and the social purpose of primary education. Miller underlines a relevant discourse on the value of local expert knowledge

versus foreign decision making that controlled the building and modernization of railways and ports, while highlighting the decreased trust in knowledge coming from Europe and the increase in "homegrown expertise." Local engineers sought more control over foreign companies, citing that these foreign engineers were not acquainted with the terrain. Finally, the purpose of education was a matter of debate, especially during the wars of independence, where there was much reference to popular education and the need for literacy by people of all social ranks. Latin American governments understood the importance of elementary education to the broader community. However, issues arose as education was used as a vehicle of indoctrination, with nations installing curricula based on state-approved commitments to morality and patriotism, and in countries like Peru, for example, elementary education being seen as urban-base when more than half of the population was rural, and with education policies ignoring the ways of life of Indigenous peoples.

Republics of Knowledge: Nations of the Future in Latin America offers an intellectual sojourn to nineteenth-century Spanish America formulating inquiries as to who has access to knowledge, what type of knowledge is considered more valuable, the legitimacy of knowledge born or shaped by a nation, and the importance of knowledge to construct national identity. To conclude, this book is concerned mainly with knowledge within an intellectual, political, and transnational perspective from a primarily creole and white men perspective. In addition, at least one of the chapters addresses the role of national and public libraries. Let us hope Miller will grant us future publications detailing her findings on indigenous knowledge and its historical contribution to Spanish America.—*Kathia Ibacache, University of Colorado Boulder*

Esther Milne. ***Email and the Everyday: Stories of Disclosure, Trust, and Digital Labor****.* Cambridge, MA: MIT Press, 2021. 336p. Hardcover, $35.00 (ISBN 978-0-262-04563-6).



As academic library workers, we often disparage the ways in which email runs our lives as a bureaucratic and affective technology. Typically we give it no more thought due to its banality in our lives. It is strangely familiar, boring, and often an afterthought, until we make a poorly calculated, and usually extraordinary, misstep. Esther Milne argues that this tension between the banal and extraordinary is what makes email a compelling focus for media and cultural studies, given the arrival of "moments where email communication becomes odd, unfamiliar, and at times perhaps even exotic" (15). Despite its omnipresence, Milne notes that email has been largely overlooked by these fields, and this book is an ambitious attempt at undertaking a wide view of email as a larger media landscape. For Milne, email is never simply just correspondence; it must be understood broadly in terms of its structure, infrastructure, and variant contexts of use.

Milne's introduction to the book focuses on providing a broader context to validate email as a phenomenon worthy of deeper study, informed by historical, methodological, and theoretical approaches. While well-represented in studies about workplace behavior and email use, linguistics, letter-writing, literature, and internet history, Milne specifically notes its underrepresentation in media, communications, and cultural studies research, despite several specific works by media scholars. More glaring to Milne is the astonishing gap given that cultural theory often studies the "everyday"; examples include the work of Donna Haraway,

Nick Couldry, and Ben Highmore. Milne's book's focus on the sociotechnical and affective practices around email's use is informed by two mixed-method online surveys (both N > 1,000), interviews, and close analysis of primary and secondary sources. Central to Milne's engagement with the everyday is her focus on stories and the complexity of email as a "media manifold" as described by Couldry.

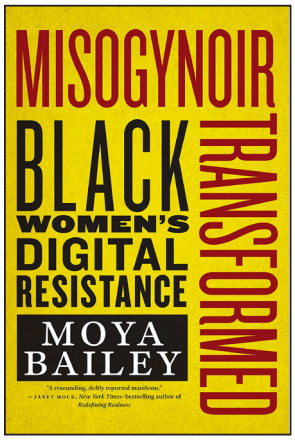
The remainder of the book focuses on three major themes: "Histories and Landscapes" (email's technical and historical foundations); "Affect and Labor" (exemplified through both institutional email and email lists); and "Archives and Publics," which relates how email constructs, comprises, and interacts with the public sphere and cultural landscape. The first two chapters in the "Histories and Landscapes" section focus on primary moments in email history through sociotechnical and metahistorical lenses. Milne explores primary stories and their context (the construction of email address syntax and header formats bound to the conditions or structures under which they were needed or created), as well as counterclaims to narratives of invention of email as a means to demonstrate the tension between the banality and exceptionality of the everyday. The third chapter in the section focuses more broadly on the "email industry"—including email providers, marketing firms, and analytics vendors—to demonstrate the complexity of email as a media manifold. Unlike commercial sectors like the entertainment business, the email industry has also been understudied by media and cultural studies. Email analytics belie the complexity of how people interact with email on a variety of devices, and how many email providers (for example: Gmail, operated by Google), make changes to give them a competitive advantage.

The chapters in "Affect and Labor" investigate in more depth how email is used: first, workplace use of email and its role as a form of "bureaucratic register" laden with affect, and the affective labor involved with email list moderation. Milne describes the changing nature of work and our own perceptions of bureaucracy, exemplified by how we use and interact with email and its affective and psychological impact on each of us. While bureaucracy is commonly viewed as reducing emotion or affect, Milne describes a slippage from the conventional register as "bureaucratic intensity," wherein affect bubbles to the surface in work email in ways that are in hindsight recognized as unacceptable. Milne's analysis of email list moderation echoes recent scholarly work on social media content moderation, although she rightfully notes that the practice predates it. Her stories on email list use and moderation center on the importance of sharing stories in various support groups, and how moderators view their (often uncompensated) labor. The two chapters in "Archives and Publics" focus on how emails constitute various public spheres and domains as well as how they get reinterpreted in various settings. The first chapter focuses on case studies of the slippage among public, personal, professional, and private email by investigating the Enron corpus and Hillary Clinton's private email used during her tenure as Secretary of State and how disclosure operates across these contexts. Like Milne's other examples, she argues that these public and private domains are in tension. The final chapter investigates email as an art form and aesthetic subject, investigating how it has been informed by past stylistic and creative practices such as epistolary literature and mail art, and through looking at specific creative works represented as or representative of email.

Email and the Everyday meets Milne's goal of addressing the complexity of email as a ubiquitous media landscape through evocative and familiar stories of the everyday drawn from her research methodology and contextualized through additional examples drawn from secondary sources. While her project is ambitious and is largely successful, its major weaknesses

relate to its ambition. The shift across various stories demonstrates the complexity of email as a media manifold; but, at times, any given section or chapter could have gone deeper. Milne also hastily engages with email archives in her conclusion but overlooks more recent work by archivists. Nonetheless, the book has done its duty to argue for more in-depth scholarly investigation. Library workers curious about how to best serve media and cultural studies scholars are encouraged to read this book as they engage with how our institutions can support the study of email considering this manifold complexity: as record, media, commercial sector, and cultural phenomenon.—*Mark A. Matienzo, Stanford University*

Moya Bailey. *Misogynoir Transformed: Black Women's Digital Resistance.* New York, NY: NYU Press, 2020. 248p. Hardcover, $28.00 (ISBN: 9781479865109).



Moya Bailey is known for coining the term "misogynoir," defined as the "particular venom directed at Black women through negative representations in Media" (xiii). Bailey has personal experience with this phenomenon. She gained a name for herself in the world of hip-hop cultural criticism in 2004 as an undergraduate student at Spelman College when she led a protest of the rapper Nelly's visit to her college campus. At the time, Nelly had been named "Misogynist of the Month" at Spelman, a women's college and HBCU in Atlanta, because of his controversial, sexually explicit music video "Tip Drill." The music video was constantly replayed on television and included graphic and explicit sexuality involving Black women. Bailey and her classmates were unaware that the college had agreed to host a bone-marrow drive for the rapper's sister, who had leukemia. The student protest upended the bone-marrow drive, gained national attention, and is still discussed as a pivotal moment in hip-hop. Bailey and her classmates at Spelman received condemnation for their stance nationwide. Bailey cites this experience as the catalyst to her coining of the term "misogynoir."

In *Misogynoir Transformed*, Bailey builds on this legacy, introducing readers to the concept of misogynoir and centering Black women in the fight against these narratives. Bailey traces the impact of misogynoir including hypersexualized descriptions of Black women that have existed since the country's founding, the mockery of minstrel shows, the subservient mammy stereotypes and "welfare queens" of mainstream television, and more recent representations of Black queer folks from the web. Bailey uses an in-depth analysis of social media trending topics to create a vivid depiction of how users interact with stories about Black women. In four fantastic chapters, Bailey outlines the role Black women play in transforming perceptions in Media and how they work to resist misogynoir as a dominant cultural narrative.

In chapter 1, "Misogynoir Is a Drag," Bailey looks at how misogynoir has been displayed in digital spaces by men in "drag." Readers new to this discussion are provided with the contextual description of the historical stereotypes of the Sapphire character, which grew from minstrel shows, to the relatively recent performances of Sheneneh by Martin Lawrence, Madea by Tyler Perry, and a viral character named Peaches written by Lena Waithe. These extremely popular comical performances have further bolstered perceptions of black women as unintelligent, undesirable, and lacking in femininity. Bailey's exploration of drag performance also acknowledges the effect this comedic practice has on nonbinary people and trans women by making trans women the butt of jokes and pushing them outside of the realm of

acceptability and even inciting violence. Bailey does excellent work tying these experiences together and reminding the reader that "Black women and Black feminist are not synonymous" (46). While there are many women fighting back against these stereotypes, there are still other Black women participating in the practice of upholding heteropatriarchal norms.

With chapter 2, "Transforming Misogynoir through Trans Advocacy," Bailey explores the many benefits of social media and how it has been used by trans activists to grow communities and tell stories to promote and support well-being. An example is the work of activist Janet Mock. Her memoirs and her ability to use social media to provide trans visibility is given a thorough review. Bailey also delves into the use of the hashtag #GirlsLikeUs to demonstrate the impact of social media efforts on a push for accountability, access, and representation in media, healthcare, and society.

Bailey moves on to content creation in chapter 3, "Web Show Worldbuilding Mitigates Misogynoir." She explores the development of independent media projects to highlight the lives of Black queer and trans artists that are often overlooked in mainstream media. The exposure and depth that Bailey provides in her study of the growth and popularity of Black queer web shows such as "Skye's the Limit," is refreshing and encourages readers to delve more into these projects. However, despite the varied stories and positive imagery created by these shows, Bailey points out the persistence of misogynoir throughout these series and in the Black queer community.

In chapter 4, "Alchemists in Action against Misogynoir," Bailey provides an ethnographic examination of the rise and fall of Tumblr and how it provided an additional outlet for Black queer and trans people to define and develop the theory of misogynoir. Analyzing the work of Danielle Cole, creator of "Struggling to Be Heard," and Antoinette Luna of "Ancestry in Progress," Bailey looks closely at how these Black bloggers countered misogynoir by using Tumblr as a tool to organize instead of other social media platforms such as Facebook or MySpace. As she discusses the use of Tumblr, Bailey returns to the question of what a space for Black women would look like. What would make a space free from misogynoir? Is it possible to truly create such a space? The conclusion from this section makes it seem as if such a space may not be possible.

Bailey's analysis is timely and up to date. She includes a very current discussion of the COVID-19 pandemic, addressing the ways misogynoir contributes to the deaths experienced by Black people and in Black communities. While Bailey writes that this book is not a history of misogynoir, it does work to provide readers new to this topic with a substantive foundation to understand how the stories of Black women merge and how they impact their everyday experiences. This book is a great effort to support, uplift and spread awareness of the work being done by Black women to pave their own way, create safe and supportive spaces, and design their own futures.—*Tamara Townsend, Malcolm X College–City Colleges of Chicago*