Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Crisis Librarianship: An Examination of Online Librarianship Roles in the Wake of the COVID-19 Pandemic

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ABSTRACT

This study surveyed the members of a professional library organization for their perceptions of their online librarianship role. In particular, the survey sought to examine any change in online librarianship roles after March 2020 as a result of the COVID-19 pandemic lockdowns. Participants were administered a survey comprised of both quantitative and qualitative response options. Findings present a nuanced professional environment post-lockdown in which individual job duties largely remained the same; however participants reported increased demands stemming from workplace issues, including attrition and lack of resources.

Introduction

Academic librarians have long supported university instruction on and off campus using virtual and online modalities (Cahoy & Moyo, 2006; York & Vance, 2009). This type of virtual or online support has evolved from a concept of "distance education librarianship", which focused on supporting students removed from close geographic proximity to the physical campus services, to today's more encompassing term of "online librarianship". Services performed in support of online librarianship include such tasks as creating Springshare LibGuides, providing librarian support via the course management system, and collection development of born-digital materials. Although these online librarianship duties are supported by a range of librarians, they are frequently the responsibility of subject specialist librarians (also referred to as "liaison librarians") who work directly with specified academic programs or colleges.

The authors, all experienced subject specialist librarians, were employed at different American university libraries prior to the March 2020 COVID-19 lockdowns. Online librarianship tasks were already a regular part of their work; however, the lockdowns forced an abrupt shift to online learning at their universities. The authors noticed a pronounced change in their work in terms of requests for online services and collections, and they wanted to understand the experiences of others employed in similar roles across the United States. They surveyed librarians through a professional organization for their work experiences both before and after the onset of the pandemic. The goal was to contribute to the dialogue regarding librarian contributions to higher education modes of learning and instruction which is increasingly online.

Literature review

This review of the literature will discuss the trend away from the term "distance education" to a more holistic view of "online learning" and its accompanying responsibilities for librarianship. This was a movement which had already taken place before the COVID-19 lockdowns of March 2020. The literature review continues with a discussion of both the American and international academic librarian response to the sudden shift in services resulting from the COVID-19 lockdowns. It specifically looks at literature from March 2020 to February 2021 in accordance with the deployment of our study.

Online librarianship prior to March 2020

Online librarianship has its origins in the concept of distance education. Distance education emphasizes the "physical separation of teachers and students during instruction and the use of various technologies to facilitate student-teacher and student-student communication" (Berg & Simonson, 2016, para. 1). Distance education began with correspondence schools during the 19th century, and by the 1970s incorporated technology such as educational television programming and computer-based instruction. Throughout the different iterations of technology used to deliver the instructional content, one common aspect of distance education was the idea that students were physically located away from the main college campus.

Although academic librarians have long supported university instruction delivered away from the physical campus, professional interest in this area began in earnest in the 1980s. In 1981, the Association of College and Research Libraries (ACRL) established the Extended Campus Library Services Discussion Group as a means of connecting librarians who were providing services to off-campus and/or branch campus students. As professional interest in this area grew, the discussion group was formalized and replaced in 1990 with a new ACRL section, the Extended Campus Library Services Section (ECLSS) (Frederickson, 2004). In 1998, the section was renamed to the Distance Learning Section (DLS), reflecting the technological advances which made such instruction increasingly popular. Over the next twenty years, the pace of developments in educational technology quickened such that the line between the concepts of "distance education" and "online education" began to blur. In 2016, ACRL's *Standards for Distance Learning Library Services* were revised to make a distinction between these terms:

> Although often informally used interchangeably, distance learning and online learning are not synonymous, since online learning can be used as a tool in settings that do not involve distance learning at all… such as main campuses, or even commercial learning facilities. Similarly…online learning can occur as a tool of distance learning.

These revised standards therefore reiterated the idea that distance learning implies education at a geographical distance from the campus (even if the student is located within the same town). Today's distance learners access their classes through online learning technology, but not all online learners are distance education students. Behr and Hayward (2016) researched the apparent streamlining of reference and instruction services present by this time, concluding that "This evidence suggests that a large group of institutions in our survey do not consider distance learners to have specific needs or to require specific staff members to work with them" (p. 97). By then it had become clear that the profession needed to focus on the needs of both distance learners and online learners as a whole. In keeping with this shift, the ACRL section was renamed yet again in 2019, this time to the Distance and Online Learning Section (DOLS) (ACRL Distance and Online Learning Section, 2021).

The means by which the librarian profession has served these learners has evolved over time. One early approach to creating greater library integration within online learning classes was the use of embedded librarianship. York and Vance (2009) explained that the term embedded librarianship had several meanings, including librarians who kept a physical office in an academic department as well as those who took an active teaching role in face-to-face semester-long classes. The authors chose to focus their research on the most widely used connotation of the term which are those librarians who assist students directly through the online course management system (CMS). Their research surveyed 159 academic librarians for their experiences performing embedded librarianship within the CMS. The most common job duties cited by the survey participants were: providing links to online library content (36%), communicating with students through email (39%) and discussion boards (33%), and writing and administering quizzes (22%).

Although Tumbleson (2016) also described the embedded librarian's primary job duties as promoting the library collection and communicating with students, she emphasized the librarian's role in providing research support through individual consultations, clarification of the research process, and guiding students to select authoritative and scholarly resources. Pati and Majhi (2019) similarly affirmed the research instruction role of embedded librarians, but also identified the liaison librarian work which some embedded librarians performed. It is possible that the embedded librarianship role matured in the ten-year period between York and Vance's research and these later researchers, such that the role was expanded to include the greater responsibilities of providing advanced research support as a subject specialist and/or liaison librarian.

More recent literature has sought to define the role of online learning librarians and identify best practices for online librarianship. Withorn and Willenborg (2020) identified seven distinct aspects of online librarianship work, including such tasks as creating online content, providing instructional design, being a point of contact (either as a liaison or subject specialist), coordinating online learning tasks, training, and advocacy. Their last distinct job area was called "slasher" and was intended to point out that the online learning tasks are most commonly performed in addition to another defined job position; that is, very few librarians doing this work are 100% devoted to online librarianship as indicated by their job title. The authors note that this situation bodes problems for workload as well as resources, and necessitates clearly defined roles in the organization. Moran and Mulvihill (2017) had similar concerns with the sustainability and scalability of online library instruction. They introduced best practices for many common online librarianship tasks, for example moderating class discussion boards as well as creating online content. For both of these tasks, they pointed out the importance of producing reusable content, which by necessity lends itself to more generalized and less individualized content.

To review, the literature demonstrates that prior to March 2020, library services to students outside the traditional classroom had experienced a steady evolution in terms of the scope of the work. The concept of "distance education" was no longer a distinct concern but rather academic libraries sought to provide services to students learning in a virtual environment (regardless of their geographical location). As technology innovated and allowed for greater instruction outside of the brick-and-mortar classroom, librarianship adapted to support students through a far greater range of online support services. By 2020, the literature demonstrates that libraries sought to determine the best way to provide these services in a manner scalable to their finite resources.

Online librarianship during and after the onset of COVID-19 (March 2020 to February 2021)

The COVID-19 pandemic became a worldwide problem in March 2020. Prior to this time, a range of online librarianship support existed at academic libraries, with some libraries having full-scale programs and others providing very little. For those university libraries already providing these services, they suddenly became essential as universities were thrust into a singular virtual environment in the wake of pandemic-forced lockdowns. Unfortunately, many universities were not prepared to offer a range of online librarianship support in March 2020; these libraries often faced a steep learning and implementation curve. The following section will review the literature, both domestic (American) and international, regarding online library services from the range of March 2020 to February 2021. This time period was selected to coincide with the deployment of this paper's survey instrument in February 2021.

Domestic perspectives on online librarianship (March 2020 to February 2021)

Published research regarding the American response to offering

library services in the immediate aftermath of COVID-19 lockdowns reveals two primary concerns: maintaining services/instruction through online sources, and communicating these services to the university campus. It is important to recall that during the period of March through December 2020, some university libraries remained closed due to the lockdowns while others had reopened but had reduced services. In such a tumultuous time of rapid change, prompt communication between the library and the university campus was essential. The library website appears to have been the primary means by which these changes were communicated (Condic, 2021), however social media and library chat technology such as Springshare's Ask-A-Librarian LibChat were also used (Decker, 2021).

Several researchers have documented their university library's heavy reliance on online librarianship as a means of maintaining services and instruction after March 2020. For some libraries, this was a profound shift as they had been primarily dependent on face-to-face interactions prior to COVID. Two such universities were the University of Alabama (UA) and Southern Illinois University School of Medicine (SIU-SOM). Decker (2021) described the rapid deployment of the UA library's Lib-Chat system, technology which was already in place but not used until the COVID-19 pandemic forced librarians to move solely to online communications with patrons. Similarly, SIU-SOM had focused primarily on in-person library transactions pre-pandemic due to the preferences of their students and faculty (Howes et al., 2021). The School's sudden move to virtual instruction in March 2020 caused a surge in the number of requests for technological assistance in creating online lecture materials. Another area of dramatic increase post-lockdown was the number of literature search requests which in May 2020 increased by 233% as compared to the previous year. Additional online tasks performed by the librarians post-lockdown were the creation of LibGuides as well as video orientations and tutorials. The authors also noted that the pandemic revealed a shortcoming of their collection, a reliance on print materials and very few e-books, which required attention. In all, online librarianship was key to maintaining services during the difficulty period of the COVID-19 lockdowns, and the literature indicates that American university libraries found ways to quickly adapt.

International perspectives on online librarianship during the pandemic (March 2020 to February 2021)

The literature regarding the international academic library response to the COVID-19 lockdowns is divided primarily along economic lines. Wealthier nations in Europe as well as China mirrored many of the same concerns as the United States, such as maintaining library instruction and services, and communicating these services to students and faculty. For developing nations in Africa, India, and the Caribbean, libraries scrambled to do their best with limited infrastructure.

Two European studies described the use of social media by academic librarians to maintain services post-lockdown. Martinez-Cardama and Pacios (2020) examined the use of Twitter communications by 56 Spanish university libraries during the period of March 15 to April 26, 2020, and Gmiterek (2021) collected data posted by Polish university libraries from March 11, 2020 through June 2020 to four social networking sites. Both researchers documented the use of social media as a means of conveying timely information about library services as well as conducting online library programming events. Additionally, Gmiterek described the use of YouTube by five Polish university libraries as a means of maintaining instructional services. These libraries published videos on such topics as utilizing specific databases and making use of different online services.

Like their European colleagues, Guo and Huang (2021) were similarly concerned with preservation of services post-lockdown. Examining China's academic library approach, the researchers gathered data from 42 academic library websites and their associated social media accounts on the WeChat and Bilibili platforms. They found overall that these universities were able to respond quickly to the sudden shift to remote

learning required post-lockdown. The researchers cited the use of both library-created online tutorials as well as the purchase of vendor produced online learning modules in order to sustain instruction. Although the aforementioned European literature discussed the use of social media for online programming events to bolster campus community, Guo and Huang described the Chinese university library social media experience as being predominantly used for instructional purposes.

The concerns of European and Chinese universities were in stark contrast to the interests of developing nations during the same time period. Literature from university libraries in Africa, India, Mexico, and the Caribbean all echo concerns regarding the lack of resources needed to move instruction from in-person to remote. In Africa, a lack of reliable electricity, internet connectivity, and home computers were widely cited as blocks to remote instruction (Abubakar, 2021; Ajibade & Mutula, 2021; Ifijeh & Yusuf, 2020; Tsekea & Chigwada, 2021). Ajibade and Mutula (2021) described the reliance on smartphones by university students as a way to access lectures and instruction modules. Ifijeh & Yusef (2020) discussed the problems experienced by Nigerian university libraries in moving to remote instruction post-lockdown. Aside from the aforementioned infrastructure problems, the authors described a university culture heavily reliant on in-person instruction and with few functional university websites. Like their colleagues in Africa, researchers in Mexico characterized their university student population as being heavily dependent on smartphones as a reliable means of accessing the internet (Ortega-Martínez et al., 2021). They also described significant growth post-lockdown in the use of remote learning lectures and video conferencing to sustain student instruction. In India, Lobo and Dhuri (2021) described an academic library environment plagued by unreliable internet connectivity yet advanced in its applications of digital literacies and widespread use of social media for communications. The researchers found that the rapid transition to remote instruction in the wake of COVID-19 lockdowns prompted needed improvements to librarian training through e-learning platforms. And finally, researchers at the University of the West Indies in Jamaica documented the experiences of its university library in meeting student learning needs after March 2020 (Newman & Newman, 2021). They explained that their country's internet infrastructure was not ready for the rapid shift to increased bandwidth demands, nor was the library ready for the sudden switch to remote learning. Newman and Newman described their university as being focused primarily on physical collections rather than e-content, and with few devices to give to staff to use in working from home. Despite these challenges, the university's library worked hard to provide timely communications through the library website, expand their online resources and provide staff training on digital literacy skills.

Methodology

Research context

This study was conducted by academic librarians working as education subject specialists at different institutions throughout the United States. Noting a difference in their workload after the COVID-19 lockdowns began in March 2020, the authors wanted to understand possible widespread impacts across the profession as a result of the sudden push to virtual learning. As members of the Education and Behavioral Sciences Section (EBSS), a subgroup of the Association of College and Research Libraries (ACRL), the authors sought to survey other members for insights into their experiences.

Research purpose and research questions

The purpose of this study was to understand the nature of common online librarianship tasks performed prior to and after March 2020. EBSS members were asked to indicate their responsibilities from a list of work tasks, as well as give their perceptions regarding a set of statements

focused on identifying possible changes to the work environment since March 2020.

The study sought to examine the following questions:

RQ1: Which specific online librarianship job duties did participants perform prior to March 2020?

RQ2: Did participants experience a change in specific online librarianship job duties after March 2020, and if so how?

RQ3: Did participants perceive any change in their working relationship with faculty after March 2020?

RQ4: Did participants feel professionally prepared to perform online librarianship job duties after March 2020?

Data collection

The authors selected a cross-sectional survey approach for data collection, whereby one survey would be deployed to gather data at one point in time (Creswell & Creswell, 2018; Lavrakas, 2008). The survey was developed using the Qualtrics XM software, and contained questions gathering both quantitative and qualitative data.

A permalink to the survey was generated from Qualtrics and subsequently embedded into an emailed solicitation for participation distributed through two EBSS social media platforms. The professional organization approved the study's recruitment of its members in advance of the solicitation. Additionally, the authors obtained institutional review board (IRB) approval from their respective institutions prior to recruitment of participants.

The Qualtrics-based survey included: (a) an informed consent information and signature page, (b) four multiple-choice questions to collect demographic information, (c) eleven questions related to job duties, (c) seven Likert-scaled questions related to librarian perceptions, and (d) three open-ended questions so that participants could describe in their own words their thoughts regarding their professional responsibilities and any changes that occurred after March 2020 (See Appendix A). Participants were allowed to skip questions, therefore result totals for individual questions vary and are reported accordingly.

Librarians were solicited for participation at the end of February 2021, and the survey was available to participants for three weeks. At the end of March 2021 the data was harvested and cleaned, including the removal of personally-identifiable information collected by Qualtrics such as IP addresses.

Participants

This study utilized a convenience sample of 46 participants who responded to an emailed solicitation to participate in an online survey. Approximately 905 members of the Education and Behavioral Social Sciences (EBSS) were originally solicited through a group discussion board as well as a Facebook group page, yielding a response rate of 5%. EBSS members are composed primarily of education liaison librarians who support university education programs, but also include liaison librarians specializing in journalism, communications studies, psychology, and social work. Other members are library administrators, and librarians working with collection development and acquisitions. Although participants were not required to be members of EBSS, they must have been employed as an academic librarian during 2020 in order to participate in the survey.

The survey began with several demographic questions to understand the nature of participants' work role. Of the 46 survey respondents, 61% ($n = 28$) identified their predominant work role as subject specialists or liaisons, 13% ($n = 6$) identified as being a library manager/supervisor or administrator, 11% ($n = 5$) identified as a generalist/reference/instruction librarian, 2% ($n = 1$) worked with collection development and acquisitions, and 13% ($n = 6$) categorized their librarian role as "other". Only one participant in the study identified their predominant work role as "online learning librarian"; for everyone else, online librarianship tasks were performed as part of broader responsibilities.

The survey also gathered data to identify the types of institutions where participants were employed. 54% ($n = 25$) of survey participants worked at four-year research-intensive colleges or universities, 26% ($n = 12$) worked at teaching-focused four-year colleges or universities with limited graduate programs, and 20% ($n = 9$) worked at teaching-focused four-year colleges or universities that offer a significant number of graduate programs. None of the survey's participants worked at a community college or two-year degree-granting institution.

To further understand the respondent pool please see Table 1. The term "faculty" in the table refers to both tenured and tenure-track librarians, while the term "faculty equiv." refers to those participants in positions equivalent to faculty but whose institutions do not offer tenure to librarians.

Data analysis

To analyze the quantitative and qualitative data collected by the survey instrument, a convergent mixed methods design was selected. Under this single-phased methodology, the two groups of data were analyzed separately and then compared to see if the findings supported or disproved each other (Creswell & Creswell, 2018).

The quantitative data collected from the multiple-choice questions was analyzed using descriptive statistics and the crosstabs feature in the Qualtrics software. Descriptive statistics (including means and standard deviations) were also collected from Qualtrics for the Likert-scaled items. Descriptive analysis of the data was conducted to collate and summarize the findings. The raw quantitative data was downloaded to a Microsoft Excel spreadsheet for further filtering and triangulating of data for analysis and interpretation.

The qualitative data collected through the open-response questions was analyzed separately under an inductive process of open coding. Separate Microsoft Word files were created for each of the four open-response questions (question 5 section 12, and questions 8, 9, and 10). These files were uploaded to the NVivo 12 Plus Enterprise software where they were coded for themes present in participant responses. Eleven individual codes emerged and were categorized into a hierarchy of common themes.

Table 2 summarizes the data analysis process by indicating which survey questions corresponded to the appropriate research question.

Findings

RQ1: Which specific online librarianship job duties did participants perform prior to March 2020?

The goal of this research question was to establish a baseline of work responsibilities for our participants prior to the COVID-19 lockdowns of March 2020. Analysis for this research question examined the data categorized in Table 3. Few tasks were completed only prior to March 2020; these were primarily: working a new schedule to provide in-person library coverage ($n = 7$), and online librarian support via the course management system of an in-person course ($n = 4$). Instead, nearly all of the eleven specific work responsibilities listed in Table 3 were regularly completed by our participants prior to (and after) March 2020. In particular, the most popular online librarianship tasks completed were: creation of online LibGuides (95%), individualized research support to students (93%), production of online learning materials (91%), and individualized research support to faculty (89%). Two of the work responsibilities listed in Table 3 did not refer to specific online librarianship tasks, but were included so that the authors could better understand the range of participant responsibilities: these were "Management of library personnel, including student employees" (with 51% of respondents reporting that they never did this), and "Working a new schedule to provide in-person library coverage" (with 52% of respondents reporting that they never did this).

The qualitative data largely mirrored these findings. Of the 37 participants who provided qualitative feedback on this area of inquiry, 20

Table 1
Participants as categorized by workplace and role.

Demo-graphics	4-year college or university (teaching focused institution; limited graduate programs)			4-year college or university (teaching focused institution; significant graduate programs)			4-year college or university (research intensive institution)		
	Faculty	Faculty equiv.	Staff	Faculty	Faculty equiv.	Staff	Faculty	Faculty equiv.	Staff
Subject specialist/ liaison	2	1	1	3	0	0	13	3	5
Generalist/reference/instruction	1	1	1	1	0	0	0	0	1
Library manager/supervisor/administrator	1	0	1	0	0	1	3	0	0
Collection development/acquisitions	1	0	0	0	0	0	0	0	0
Other:	0	2	0	3	0	1	0	0	0

Table 2
Research questions and their corresponding survey questions

	Item on survey	
Research question	Quantitative findings	Qualitative findings
Research Question 1: Which specific online librarianship job duties did participants perform prior to March 2020?	See question 5.	See questions 5.12, 8, 9, and 10.
Research Question 2: Did participants experience a change in specific online librarianship job duties after March 2020, and if so how?	See question 5.	See questions 8, 9, and 10.
Research Question 3: Did participants perceive any change in their working relationship with faculty after March 2020?	See question 6.	See question 9 and 10.
Research Question 4: Did participants feel professionally prepared to perform online librarianship job duties after March 2020?	See question 7.	See questions 8 and 9.

cited specific online librarianship tasks that they performed prior to March 2020. These job duties included: giving instruction classes and research consultations; creation of online learning objects; creation of LibGuides; and assistance to student inquiries via chat, text, and email.

These quantitative and qualitative findings support the prior research of Withorn and Willenborg (2020) who identified very similar common online librarianship responsibilities in the workplace prior to the COVID-10 lockdowns. Our participants seemed to embody the "slasher" role as described by Withorn and Willenborg, because all but one participant performed these duties outside of a designated online librarian job title.

RQ2: Did participants experience a change in specific online librarianship job duties after March 2020, and if so how?

As demonstrated in the analysis for RQ1, most of our participants were already completing the vast range of online librarianship tasks listed in Table 3 prior to March 2020. The most profound change for our participants after March 2020 was with regard to their work location: our demographic data indicated that 91% of participants ($n = 42$) moved their workplace from in-person to remote for one semester or more.

Although the majority of their online librarianship work remained the same, the survey findings identified 46 instances of librarians being asked to complete tasks that they had not performed prior to March 2020. The task with the highest number of "Please check if you did this ONLY after March 2020" (see Table 3, Column 2) responses was helping faculty members move their classes online, through technology and/or instruction ($n = 13$). None of the participants responded that they only did this task prior to March 2020, although four participants did this task both before and after the lockdowns. The crosstab analysis in Table 4 shows the distribution of types of librarians asked to complete this additional responsibility, with subject specialists being the most common.

Although it appears from the quantitative data that few librarians took on completely new online librarianship job duties after March 2020, the qualitative data provided rich descriptive information as to the specific work realities for our participants during this time. The qualitative data recorded feedback from 32 individuals on this topic, and 53% ($n = 17$) of these respondents noted that their job duties did not change significantly after March 2020. For the other 47% of individuals, most described an increase in job duties. The reasons for the increased responsibilities varied. Seven participants described an increase in job duties because of colleagues who left the organization due to retirements, individuals who quit, and in one sad instance the death of a colleague. These organizational changes forced some of our study's participants to step into roles they had not necessarily anticipated; here are some examples:

> I assumed coverage of an entire school after a colleague retired last summer. I was most qualified due to my professional background. However I still have ALL the duties of my full-time position and no let-up or leeway to work with the new school's programs.

> Two librarians in our department quit, meaning we've had to pick up extra work.

> My department chair retired in December and I have assumed her duties. She retired early because she did not like working remotely and had a lot of pandemic related family stress.

Other participants described having to take on additional duties due to financial stress at their institutions:

> As a result of losing student enrollment, the university fired several people in the library. In addition to my duties as acquisitions and collection development librarian, I have now taken over everything once done by the acquisition clerk and the copy cataloger.

> We had a part-time evening/weekend position that opened up, frozen, so we have had to take turns working some evenings and Saturdays.

Finally, one participant spoke in positive terms regarding a new job duty post-March 2020:

> … the team of librarians that I lead has taken on… advising loads (about 8–15 students per librarian). The advising seemed daunting at first, but in the end it hasn't been a heavy lift. Instead, it's helped us get to know the bureaucratic details of our institution from students' perspectives, and it will help advocate for change over time. Additionally, librarians don't always get to know individual students particularly well. Through advising appointments we've gotten to build good coaching and nurturing relationships with some of our graduate students.

These qualitative results indicate the resiliency of our participants to handle unforeseen administrative issues at their institutions, including staffing and financial challenges, which occurred after March 2020. They also capture a nuance in the data collection which was not gathered through the quantitative survey questions: although our participants were largely not performing new tasks after March 2020, many of them were taking on additional workload.

RQ3: Did participants perceive any change in their working relationship with faculty after March 2020?

Question 6 of the survey contained seven individual questions

Table 3
Results of Survey Question 5.

Question	Please check if you did this ONLY prior to March 2020:	Please check if you did this ONLY after March 2020:	Please check if you have always done this:	Please check if you have never done this:	Total
1. Embedded librarian support within online courses (defined as: providing remote librarian services via a course management shell)	2	5	16	20	43
2. Online librarian support via the course management system of an in-person course	4	3	19	17	43
3. Production of online learning materials (examples; library resource guides, instruction videos, tutorials)	0	4	40	0	44
4. Creation of online LibGuides	1	0	42	1	44
5. Website management	2	0	19	22	43
6. Individualized research support to students (remotely via means such as email, chat, or video conferencing)	0	3	41	0	44
7. Individualized research support to faculty (remotely via means such as email, chat, or video conferencing)	0	4	39	1	44
8. Management of library personnel, including student employees	3	4	14	22	43
9. Additional collection development areas, including eBook and eResource procurement	0	2	34	7	43
10. Working a new schedule to provide in-person library coverage	7	9	4	22	42
11. Helping faculty members move their classes online, through technology and/ or instruction support	0	13	4	26	43
12. Other:	0	1	1	3	5

designed to measure librarian perceptions of specific transactions with faculty members post-lockdowns. As previously mentioned, participants had the option to skip individual survey questions; therefore responses vary and are indicated for each individual question in Table 5 by the "Count" field.

Interpretation of participant responses to these Likert-based questions focused on the mean results per question. The survey was scaled from 0 to 5, with 0 meaning 0% agreement with the statement and a 5 meaning 100% agreement. The first question in this group resulted in a minimum participant response of 1, meaning that all 35 participants who answered this question had at least some minor agreement with the statement. The midpoint of this survey section's Likert-scaled range was a 2.5, therefore any question with a mean greater than 2.5 meant that the average participant held moderate agreement with the statement.

The questions in this section of the survey were largely delineated into two groups: individual job duties/tasks, and individual engagements/collaborations. Please see Table 5 for the resulting descriptive statistics by question. Regarding the job duties/tasks, the survey found that an increase in embedded librarian requests (Q6.6, M = 1.76) was not indicated as being impacted significantly by respondents during the pandemic, as compared with other areas such as faculty asking librarians to assist with providing or creating new learning objects (Q6.7, mean 2.97), requesting instructional support (Q6.3, M = 2.52), and requesting technology assistance from librarians (Q6.2, M = 2.47). Regarding librarian perceptions of engagement with faculty during the pandemic, respondents indicated they perceived a positive difference in faculty members' opinions of the library during the COVID crisis (Q6.5, M = 3.03). Participants also perceived there to be a new awareness by faculty of what the library can do resulting in a strengthened connection with faculty (Q6.1, M = 2.86). Finally, there was also the perception that since March 2020 librarians experienced a positive difference in communication between faculty members and the library (Q6.4, M = 2.60).

The qualitative data provided evidence of several specific faculty-librarian interactions after March 2020. It was apparent that at many institutions, the need for faculty to quickly transition from in-person to online classes post-March 2020 motivated them to reach out to librarians for help. The qualitative data suggests that working relationships between librarians and faculty were already in place prior to the lockdowns, and faculty relied on these existing partnerships in their time of need. One librarian illustrated this phenomenon by writing that overall her workload had not changed post-March 2020, "with the slight exception that because they now know it's available to them, faculty are more likely to ask for an online learning object." Another participant suggested that this increase in creating online content did not diminish the integral relationship-building aspects of the job, writing "I was able to create more online resources and content and still maintained a solid relationship with the faculty."

Another participant described an unintended negative consequence of trying to assist faculty through collection development during the very difficult period post-March 2020:

We… do not have the budget to license tons of films and the requests for those increased significantly with so many classes being offered online. I felt that we promised more than we were actually offering to support and the subject librarians were left having to say no to people. I was frequently put in the position of having to explain our Hathitrust agreement to angry faculty and pressured by upper administrators to just promote OER and ebooks and that would solve everything. (Though I am a huge fan of OER, it does not work in all situations and my faculty were barely prepared to transition to online much less adopt open textbooks or library ebooks). It was not a realistic expectation.

RQ4: Did participants feel professionally prepared to perform online librarianship job duties after March 2020?

Although seven participants abstained from answering this question, there were clear trends among the 39 who responded. Among the respondents, there were exactly twice as many participants who indicated

Table 4

Cross tab analysis: helping faculty members move their classes online, by librarian type

Q5: Please select the following tasks you regularly complete, indicating when you have provided these services (prior to March 2020, after March 2020, or both): Helping faculty members move their classes online, through technology and/or instruction support

		Please check if you did this ONLY prior to March 2020:	Please check if you did this ONLY after March 2020:	Please check if you have always done this:	Please check if you have never done this:	Total
Q1: Please select the classification which best describes our work: Selected Choice	Subject specialist/liaison	0	9	3	14	26
	Generalist/reference/instruction	0	0	0	4	4
	Library manager/supervisor/administrator	0	2	1	2	5
	Collection development/acquisitions	0	0	0	1	1
	Other:	0	2	0	4	6
	Total	0	13	4	25	42

Table 5

Results of Survey Question 6.

Survey question	Minimum	Maximum	Mean (M)	Std deviation	Variance	Count
1. The COVID crisis strengthened my connection with faculty in that they have a new awareness of what the library can do.	1.00	5.00	2.86	1.20	1.44	35
2. I have noticed more faculty members requesting technology help from the library since March 2020.	0.00	5.00	2.47	1.38	1.90	34
3. I have noticed more faculty members requesting instruction support from the library since March 2020.	0.00	5.00	2.52	1.33	1.77	29
4. I have noticed a positive difference in the level of communication between faculty members and the library since March 2020.	0.00	4.00	2.60	1.28	1.64	30
5. I have noticed a positive difference in faculty members' opinions of the library since March 2020.	0.00	5.00	3.03	1.29	1.67	33
6. I have noticed more faculty members requesting an embedded librarian since March 2020.	0.00	5.00	1.76	1.36	1.86	25
7. I have noticed more faculty members requesting online learning objects (ex. LMS modules, LibGuides, video tutorials) since March 2020.	0.00	5.00	2.97	1.54	2.36	36

that they felt professionally prepared than those who did not (26 said Yes and 13 said No). Interestingly, of the 13 unprepared people, 85% of that group came from 4-year colleges or universities with either significant graduate programs or a research-intensive institutional focus.

For those who did feel professionally prepared to perform online librarianship tasks post-March 2020, a common theme emerged in participant writings regarding the value of prior online librarianship work experience. Of the 26 participants who responded that they felt professionally prepared, 23 provided comments in the open response section; all of these 23 comments described prior work experience with online librarianship tasks. One librarian cited their prior familiarity with technology as contributing to their feeling of preparedness:

I have always been encouraged to stay abreast of current technologies and to incorporate them into my work. Because of this, I felt prepared to use them to develop the online learning objects that were necessary in a fully remote environment.

One-third of the respondents to this question did not feel professionally prepared to move to remote work and perform their job duties after March 2020. For this group of self-identified unprepared librarians, eight were subject specialists/liaisons, two identified as "library manager/supervisor/administrator", one was a generalist/reference/instruction librarian, and two selected "other" for their role. These participants were asked to add the tasks of embedded librarianship, faculty research support, management of library personnel, and helping faculty members move their classes online to their job duties. In addition to these tasks, the eight subject specialist librarians were additionally asked to work new schedules, provide individual student research support, and provide online librarian support.

Of the 13 participants who indicated that they did not feel professionally prepared, two primary themes emerged in the open response writings: lack of training/experience and also technology issues such as

lack of equipment. For example, one librarian cited both problems:

… with the pandemic there was a new high volume of requests for me [to] develop customized asynchronous materials (videos and research guides) in addition to the usual load. We did not have and still don't have the technology support to produce high quality videos from home. There was also no formal training provided for creating this content and no centralized management of the videos produced within the library system (no infrastructure for hosting this content).

Another librarian cited issues of having to quickly pivot to support a higher volume of requests for the assistance, without the training or workflows necessary for managing the requests:

My library's culture of saying yes to the patron no matter what was very detrimental during this time, especially to subject librarians. We needed additional technological support and training, as well as a standardized workflow to manage all the new content creation requests. It would have been good to hire someone who specialized in producing videos to help us. We can't do it all at that volume.

Both of these librarians point to an additional underlying issue in that library workflows did not previously exist to manage the switch to a focus on online content delivery.

Discussion and implications

Theme 1 online librarianship tasks

Our results indicate that prior to March 2020, many librarians had already taken on tasks related to online librarianship. Creating online content including materials for LibGuides and Learning Management Systems, conducting individualized research support for students and faculty, and purchasing digital materials such as eBooks and electronic journal subscriptions were all common occurrences for the majority of

our participants in the years leading up to the COVID-19 lockdowns.

After the lockdowns in March 2020 however, our results indicate that the nature of work duties did not change for our participants as much as the intensity or allocation of their work. We found that professional responsibilities in some cases drastically changed as librarians moved to a remote setting or greatly reduced their in-person interaction with patrons. Librarians were challenged to help professors move their courses online, work new schedules, create online learning objects, and embed in online courses. For the majority of our participants who were doing these tasks prior to March 2020, this increased pace was stressful but achievable; for those participants who did very little online librarianship prior to March 2020, however, the shift in workload appears to have been much more difficult. In some instances, librarians did not have the tools they needed to make a swift transition to online librarianship, be it through previous training, technology infrastructure, or administrative policies in place. There was also the added pressure for librarians that had to take on additional work load and/or new roles left by colleagues that retired, resigned, or passed away.

These findings coincide with the literature review of American and international academic libraries during this time period. For those libraries who were already well-versed in online librarianship prior to March 2020, the move to a largely online learning environment was far more manageable in terms of preserving library instruction, services, and communications (Decker, 2021; Guo & Huang, 2021; Howes et al., 2021). Having existing information systems and policies in place allowed librarians to concentrate on the added workload from faculty and student requests. For those libraries who focused on face-to-face interactions prior to the lockdowns, however, the transition was much more difficult as library management struggled to acquire necessary technology infrastructure and provide needed technology training to personnel (Lobo & Dhuri, 2021; Newman & Newman, 2021).

Theme 2 librarian perceptions of faculty relationships

The quantitative findings suggest that there was a greater awareness during the pandemic among discipline faculty as to the ways in which librarians might contribute to their work, particularly in their time of need. Our participants perceived a greater demand for their services post lockdown in helping faculty by creating learning objects and providing other technical assistance. Perhaps consequently, participants also perceived greater levels of professional respect from faculty members in terms of heightened opinions of the library and its services, as well as greater communication. The qualitative data echoed the idea that while this work was nothing new for our participants, discipline faculty may have been more inclined to reach out for help after March 2020. This strengthened connection between discipline faculty and librarians for collaborative work could be the direction going forward in supporting student learning, and could possibly create more co-teaching opportunities.

Theme 3 managing expectations in the face of crisis

Although the quantitative findings indicated that our survey participants' job responsibilities largely did not change after March 2020, the qualitative findings provided a more detailed view of workplace expectations for our participants. Specifically, many of our participants described their struggles with additional duties allotted to them upon coworkers leaving, lack of technology and technological support, and trying to maintain the library culture of saying "yes" to all outside requests. Several examples from our participants illustrated the difficult situations they were put in due to the decisions of their library administration, such as insufficient staffing or promotion of open educational resources (OER) materials without clear marketing of their limitations. It would seem to be the responsibility of library administrators to provide a buffer between librarians and outside patrons, such that administrators could adequately convey expectations of assistance during a crisis period. Another consideration is the turnaround time it takes to implement new services or offerings: there is a big difference between creating an online learning object for a faculty member versus making large-scale collection development changes as some print-focused libraries were forced to do. Some decisions, such as moving one's collection to e-resources and/or OER, take time to implement and have inherent limitations in their capabilities; library administrators need to convey these issues to patrons in order to mitigate potential misunderstandings and disappointments.

The stress of additional duties, saying "yes" to every request, and lack of equipment and support, combined with perceived lack of support from library administration can lead to burnout for many librarians. Academic librarian burnout was already a well-documented phenomena prior to the COVID-19 pandemic (Nardine, 2019; Wood, Guimaraes, Holm, Hayes, Brooks, 2020), however these findings suggest that COVID presented many additional workplace challenges. Our findings demonstrate the resiliency of our participants during a worldwide crisis, but also point to the necessity of managing expectations in the workplace; this issue may be even more important part of librarian work life post-March 2020.

Study limitations

This study obtained its participants through convenience sampling, a method which produces both positive and negative consequences. Although this sample was helpful in identifying the experiences of a group of academic librarians, the study was limited by the sample's heavy concentration of subject specialist librarians. Due to the membership composition of the Education and Behavioral Social Sciences (EBSS) group, a preponderance of subject specialist librarians was to be expected in the sample; however, the disproportionate sample (61% subject specialist) possibly overemphasized the perspectives of this subset of librarians. Furthermore, the small sample size (only a 5% response rate) is another factor which limits generalizability of the results to the larger academic librarian population.

Conclusion

The purpose of this study was to survey academic librarians about their online librarianship duties prior to and after the March 2020 COVID-19 lockdowns. The study found that overall our participants were experienced in providing online librarianship services pre-COVID, and were therefore prepared to move quickly to predominantly online services at the onset of pandemic-driven lockdowns. We were also pleased to find that many of our participants perceived strengthened connections with their university faculty as a result of their added support, largely in the form of technological assistance and instructional services, during the COVID-driven shift to online education.

These positive aspects of our participants' professional response to the COVID lockdowns need to be weighed in the context of their articulated struggles. Several participants described a library culture of saying "yes" to patron requests which added to their stress levels, particularly in light of having to take on additional workload at the loss of colleagues through attrition and even death. Professional burnout has been a documented problem in academic librarianship for some time, however post-COVID this issue is perhaps even more salient.

This study adds to the growing body of knowledge on this unprecedented period of academic librarianship by providing a view of online librarianship concerns at the onset of the COVID-19 pandemic. Future research may explore how post-pandemic librarianship continues to evolve.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.acalib.2022.102530.

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