Behind the Desk: Washington State Community and Technical College Librarians' and Library Workers' Perspectives on Student Reference Needs during the COVID-19 Pandemic

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Abstract

Across Washington State, community and technical college librarians and library workers struggled to meet student reference needs as they grappled with swift and often detrimental changes brought about by the COVID-19 pandemic—which we define as the period between March 2020 and 2021, in keeping with return-to-campus trends of Washington State higher education institutions. Through a framework of the authors' backgrounds and experiences along with the existing literature, this article situates the impact of COVID-19 in the broader context of academic reference pre- and post-pandemic. This article likewise examines prominent issues COVID-19 brought to the fore and trends that persisted through the end of 2022, when we conducted our research. The authors highlight the gap in this research area to demonstrate and better understand the many challenges Washington State students encounter in their pursuit of higher education, to promote the study of community and technical colleges more broadly, and to shed light on the challenges librarians and library workers continue to wrestle with in 2025.

Keywords: Reference, Washington State, Librarians, Library Workers, COVID-19, Pandemic, Community College, Technical College

Article Type: Research Paper

Introduction

Whose points of view are missing in our retrospective of the COVID-19 pandemic and how do the effects of the pandemic continue to impact librarians and library workers? As former community college students in Washington State and recent MLIS graduates at the University of Washington, we were drawn to these questions and how they might be answered by the librarians and library workers we've encountered on our paths.

In Washington, community and technical colleges scrambled to meet their students' reference needs in spring 2020 as education pivoted online and health risks heightened. While those colleges have since returned to a new sense of normalcy, librarians' and library workers' perceptions of the impact of COVID-19 on student reference needs is a rich pool of knowledge—one that yields invaluable insight into a population that is often overlooked in academic research.

In autumn 2022, we conducted research through interviews with librarians and library workers, a

Likert scale questionnaire, and an analysis of community and technical college websites. The main objective of this study was to understand the evolution of community and technical college student reference needs as a result of the pandemic and how that evolution continues to impact us moving forward. However, we also stumbled upon findings surrounding the impacts on reference service models and availability, academic librarians' identities and job security in the changing landscape, and the role of technology, tutor center models, and faculty collaboration at these colleges.

We are researchers privileged to have attended a graduate studies program that empowered our efforts. Though we have experience studying and working in community colleges, our ability to deeply understand students from diverse and intersectional backgrounds is limited. As students, we did not have the means to conduct a full study and interview community college students. We must qualify the following paper by reminding readers that our findings are framed through the lens of librarians, library workers, and their online materials. Academically speaking, our research is founded on critical theory. We do not hold that social science can be truly objective; instead, we strive to identify and challenge power dynamics and inequities at every turn. We hope that as Washingtonians, we were able to build trust with those who informed our research. However, we must acknowledge that the response to COVID-19 varied significantly across the state, particularly among political party lines. Our identities as "Western Washington residents" and affiliation with UW may have influenced our outlook and how we were perceived regarding the pandemic.

Existing research

The following section summarizes pertinent existing research that contributed to the formation of our approach across three core themes.

Much of the focus on COVID-19's impact on education and academic libraries has been on

four-year universities: As Nelson (2017) states: "The role of the community college library is underrepresented in the literature" (p. 278). However, some commonalities can be drawn. Connell et al. (2021) raise an important point in their study of three academic libraries about the difficulty in measuring interaction trends, especially in libraries where logging patron-librarian interactions may not have been as robust prior to the pandemic. They highlight that during the height of the pandemic, "no longer could students catch library staff in the stacks or at a service desk to ask quick—and often uncounted—questions. Instead, interactions were more easily measured through the virtual trails they left behind" (p. 17). However, the focus on academic libraries of four-year institutions, particularly universities who focus primarily on research, creates a gap in our understanding of how academic libraries of two-year colleges fared during the pandemic.

Community and technical college students have unique reference needs: There has been some research assessing how academic librarians can meet the reference needs of community and technical college students. Community colleges "educate a large number of students that may not traditionally attend a four-year college or university" (Nelson, 2017, p. 278). Not surprisingly, community college students have diverse backgrounds and encounter numerous barriers in their pursuit of higher education. Lacy and Hamlett (2021) noted that community college students in America generally hail from low-income backgrounds and "they are mostly minorities; they are mostly first-generation college students; and, importantly, they are almost all in need of some kind of remediation" (p. 167). Krieb (2018) affirms the positive impact librarians can have on community college students, and found that "students that visited the reference desk or attended a library instruction class had higher rates of retention" and tended to have a higher course grade (p. 3). There is also emerging research surrounding strategies for reference services in community colleges. Kramer (2020) researched a model called roving reference, described as "engaging

the patron at the point of need" (p. 272), and Lacy and Hamlett (2021) sought to scale information literacy and research skills through faculty partnerships (p. 173). Both of these authors emphasize the importance of creative approaches in best serving community and technical college students.

Librarians have begun assessing the impact of the pandemic: A few institutional assessments on the impact of COVID-19, led by community college librarians, are available. Cohn and Hyams (2021) documented two New York community college libraries' response to the pandemic, including the tactical emergency response decisions that took place, such as a setting up virtual reference chat within a matter of days and updating library websites and reference resources. Fancher and Mabee (2022) investigated the delivery of reference services in high-stress times at a Missouri technical college, and refute a common pedagogy that reference services must be student-led in order to be impactful: "To riff on an adage, forcing a student to learn how to fish when they are drowning helps no one" (p. 224). Bouchard (2021) discusses a Michigan Tribal community college focused on supporting students with career and employment research. Methods included lengthy email threads between students and libraries, socially distant interactions in the school parking lot, and increased utilization of job-seeking software on the library website. While this study veers away from traditional reference services, it demonstrates the variety of creative measures librarians took during this time. Blankstein and Wolff-Eisenberg (2021) conducted a broad study of library directors in 2021 and reported a perception that community college libraries played an increasingly important role in providing technology and digital skills to students. In comparing these profiles of community college academic libraries, access to technology, adaptability in delivery of reference services, and variety of connection points with students were key to success in meeting student needs.

Definitions

Based on our review of existing literature, we noted several definitions that required specification because they informed the parameters of our study.

We use the term *COVID-19* as described by Johns Hopkins Medical Center: "A coronavirus identified in 2019, SARS-CoV-2, has caused a pandemic of respiratory illness, called COVID-19" (2022). We define the COVID-19 pandemic as the period between March 2020 through 2021; this reflects the return-to-campus trends of western Washington higher education institutions, with the majority returning to campus in early 2022 if not slightly before (Green River College, 2022; Gutman, 2022; MyNorthwest, 2021). Similar to other literature on the subject, our autumn 2022 research was conducted in a period that could not be considered definitively "post-pandemic."

The Reference and User Services Association (RUSA), a division of the American Library Association (ALA), provides a useful starting point to define *reference services* as "providing assistance by using expertise in response to an information need" (RUSA, 2022). In addition to these baseline definitions, researchers asked interview subjects how they personally defined the milestones of the COVID-19 pandemic and reference to frame the qualitative data gathered. Since the literature we reviewed placed a large emphasis on the critical shift to online and virtual services during the COVID-19 pandemic, we paid special attention to librarians' and library workers' perspectives on this shift and incorporated analysis of it into our research method.

Like many places in the United States, Washington's digital divide became apparent during the onset of the COVID-19 pandemic. The need for *digital equity*, defined by the National Digital Inclusion Alliance as "a condition in which all individuals and communities have the information technology capacity needed for full participation in our society, democracy and

economy," became impossible to ignore as residents were unable to address basic needs without technology and internet access (n.d.). NDIA defines the digital divide as "the gap between those who have affordable access, skills, and support to effectively engage online and those who do not." As late as June 2023, approximately 15% of Washington households did not have high speed internet access (Washington State Department of Commerce, 2023, p. 78). Rural communities were particularly affected: in the "counties of Ferry, Skamania, Okanogan, Adams, Stevens, Pend Oreille, Columbia and Klickitat, at least 4 in 5 survey respondents reported no internet access or broadband service" (Yoon-Hendricks, 2023). As noted in a report by the Association of Community College Trustees, "Even after the pandemic abates, the digital divide will remain a significant hurdle for many students throughout the United States, reducing access to education and discouraging some students from persisting and completing" (Bray, 2021, p. 7). One example of this gap can be found in the Spokane Community College District, where "Fifteen percent (15%) of students did not have adequate access to the technology necessary to continue their studies virtually" at the beginning of the lockdown (p. 4).

Objective and Methods

Bringing together our review of existing literature and the defining features of our focus of study, our primary goals for conducting this research were to:

- Qualitatively study the impact of COVID-19 on student reference needs
- Gather perceptions of how these needs were observed and perceived by librarians and library workers
- Look critically at the connections between students, librarians, library workers, and academic institutions, the ongoing challenges facing community and technical colleges, and questions that were left unanswered

Our research method was three-fold: interviews with community and technical college librarians from Washington State's community and technical colleges, a questionnaire seeking responses from those librarians and library workers, and comprehensive analysis of the websites. Interviews and the questionnaire were deployed concurrently, and website analysis was completed independently by the researchers. We developed a codebook to analyze the qualitative data obtained. Themes, like changes in service and needs before, during, and after COVID-19, were identified for the codebook prior to data collection, while specific coding methods were assigned once data collection was complete and patterns could be identified.

Interviews. We conducted 17 interviews over Zoom virtual meetings with librarians from 16 of the 34 Washington State community and technical colleges as identified by the Washington State Board of Community and Technical Colleges (2022). Interviews were conducted from November 4, 2022 to November 11, 2022, averaging about 27 minutes long. The interviews were semi-structured following a standard set of questions prepared by the researchers (see Appendix A) with flexibility built into the timing of the interview for participants to expand on answers or bring up other topics during the interview as they organically came up. During interviews, we quickly discovered the importance of discerning librarian and library worker perceptions from the measurable impact of the pandemic on student reference needs.

Questionnaire. We received 22 responses from our questionnaire that was emailed to the 34 community and technical libraries. The questionnaire sought responses from both librarians and library workers with the understanding that other library professionals, like technicians and assistants, play a valuable role in the community and technical college library ecosystem. As such, we sought their input in regards to the above research goals through a Likert scale questionnaire (see Appendix B). Responses were solicited from November 1, 2022 to November 14, 2022.

Website Analysis. During November 2022, we analyzed all 34 colleges' websites using a rubric created by the researchers that assessed the following:

- Presence of library site within the main homepage of the college
- COVID-19 information, policies, and resources
- Available reference services, including in-person and virtual resources
- General information and library updates
- Student feedback options
- Language accessibility

The purpose of this analysis was to analyze the information and dissemination of that information by the library and academic institution to the student population and academic community. It further provided contextual information to the data gathered from the interviews and questionnaires.

Bringing together the data we gathered through these instruments, we coded the results and synthesized them into themes, as described below.

Findings

In the following summary of our findings, we note librarians and library worker general perceptions to establish context. We then share the primary findings related to student needs. Finally, we list library responses to these identified student needs.

Theme 1: Librarian and library worker perceptions

Impact of the pandemic. *"A great majority of the meetings are happening online."*

- **Online education landscape:** The move to increased online services was already on the horizon at many Washington State community and technical colleges prior to the pandemic. The nature of COVID-19

expedited that process, however, bringing to the forefront the systemic inequitable structure of higher education institutions and the role libraries play in disrupting the status quo.
- **Open Educational Resources (OER)**: Online classes dominated across Washington State in 2020 and 2021 and comprised a significant portion of student enrollment. Countless online workshops, seminars, and events likewise grew in popularity. Unsurprisingly, OER became a prominent focus for everyone, including staff and faculty who sought to prioritize access to materials. While a shift toward online services started prior to the pandemic, COVID-19 propelled that shift, centering equity issues like never before.
- *Modalities:* Librarians and library workers perceived a major shift in student expectations concerning the mode through which reference services could and would be provided. As campuses closed across the state, librarians and library workers had to quickly pivot from broadly offering a combination of online and in-person reference support to providing online services exclusively. This included setting up or ramping up service via one or more dedicated chat platforms to facilitate conversations between librarians and students in addition to more traditional communication routes such as email. Later, particularly in 2021 as hybrid services began to emerge and even as campuses began to offer a large number of in-person services once more, librarians reported continued student expectations of and engagement in digital reference services.
- **Enrollment**: Librarians and library workers deployed outreach services to remedy a drop in student enrollment and promote a global network as students predominantly completed classes remotely.

Institutional role. *"You get concerned … when you see, like a whole line of people like*

secretaries or administrative assistance disappear. You wonder if you're going to also sort of disappear in this function."

- **Librarian value:** Librarians increasingly felt the need to justify their value to colleges as the number of reference questions they received plummeted; this trend was particularly concerning amidst budget and staffing cuts. In response to this dip and widespread student expectations of online services, librarians began creating a plethora of digital materials as well as teaching online courses.
- **Siloed workplaces:** Librarians reported that they severely lacked insight into similar colleges' responses to the pandemic and would have welcomed collaboration between institutions. Though the issue of siloed workplaces existed before COVID-19 and the Library Leadership Council was engaging in efforts to remedy this shortcoming, it was nonetheless felt far and wide.
- **Risk-taking:** We observed additional divides between library staff that were able to work from home (often based on union influence) and those who were required to work in-person during the height of the pandemic. Both groups faced a steep learning curve in acquiring and teaching digital skills, and each faced unique challenges.

Challenges in meeting student reference needs. *"When students are in the library and they're face to face, the reference transaction is different."*

- **Student reluctance:** Librarians reported that students were generally reluctant to engage with them in person prior to COVID-19 and that the dramatic shift to an online modality exacerbated their reluctance; this held true even as campuses started to reintroduce in-person services. Due to fewer in-person interactions, reference transactions

became even less research-oriented and more basic (e.g., help with printing).
- **Cost:** Librarians grappled with supporting students, faculty, and staff using e-resources as they can be expensive to purchase and maintain and sometimes difficult to use. Their content can also change without warning, creating additional barriers. Further, the increased need for technology by students and expansion of technology lending programs increased costs.

Challenges regarding outreach. *"Where are the students? And why don't they know that we're here?"*

- **Faculty**: According to librarians, the pandemic shed light on the importance of outreach to students as well as faculty. Librarians urged the latter to begin to or to further incorporate library services into course curricula to better assist students and convey the scaffolded nature of research skills.
- **Library as a third place**: As "connectors" between students and campus, faculty, staff, and more, librarians began to embrace the notion of a library as a "third place" for students to interact, dialogue, and learn. Rather than their traditional reputation as quiet spaces for studying (and little socialization), dynamic libraries have begun to attract students who seek a more diverse support network and robust services.
- **Social work**: COVID-19 pushed librarians to prioritize addressing students holistically, particularly meeting students' basic needs such as food, housing, and Internet. Concerns surrounding information literacy and library services increased during this time, with college and career success courses—or proposals for such courses—receiving additional support as a way to cultivate long-term student success.

Meeting student reference needs. *"So [COVID-19]s an opportunity to rethink: Okay, what does this group of people who are in front of us right now—what do they want and need?"*

According to questionnaire results (seen below in Figures 1 and 2), community and technical college academic librarians' confidence in their ability to meet student reference needs appeared to dip somewhat during COVID-19 compared to prior to COVID-19, despite receiving adequate training. These Google Forms graphs show a dip in librarians' confidence to meet student reference needs.
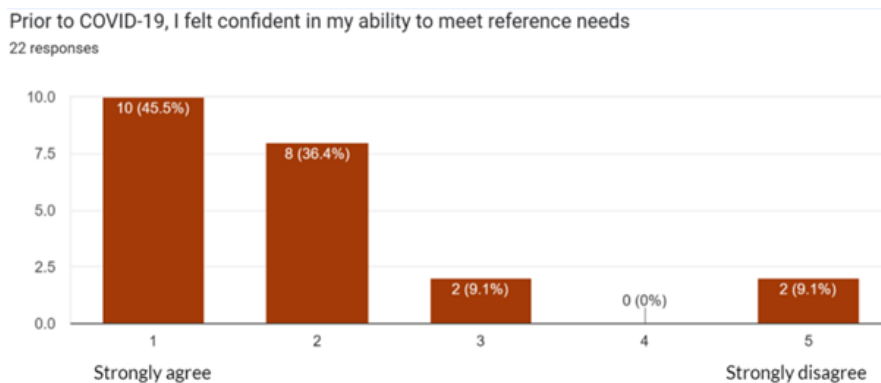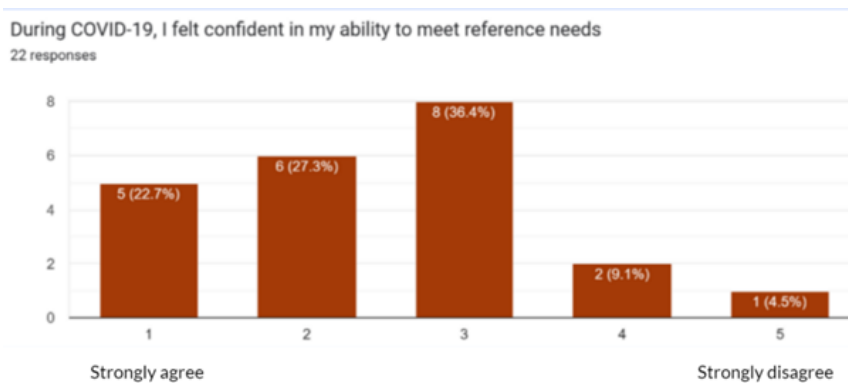

Figure 1.

Figure 2.

Theme 2: COVID-19 and student reference needs

How did the COVID-19 pandemic affect student needs? *"We'd all love more reference questions, I think."*

- **Before**: Prior to the pandemic, in-person reference interactions dominated. Though the total number of in-person interactions varied across institutions and students were at times reluctant to engage with librarians, multiple librarians we interviewed recalled libraries teeming with patrons, who posed questions ranging from assistance with academic reference to campus resources. Higher overall student enrollment contributed to more total reference interactions, while in-person classes coincided with more in-person assistance.
  - **During**: From 2020-2021 through 2022, the total number of students and reference interactions—both online and in-person—were lower than pre-pandemic levels. In the questionnaire, most respondents indicated that there was not an uptick in reference needs during the pandemic, as pictured at right (in which 1= strongly agree and 5 = strongly disagree) . Librarians we interviewed largely agree that COVID-19 had an impact on their ability to meet student reference needs. Barriers relating to technology access, such as needing to check out laptops, along with a lack of digital literacy were two prominent issues, while life challenges outside of school and personality shifts in the student population impeded librarians' ability to meet student reference needs. Despite the changes and adversities, most librarians felt they received similar reference questions—research, citation help, campus resources—compared to before the pandemic and continued to provide support in answering questions. Collaboration with faculty members to reach students and incorporate research and reference into the classroom became even more important for students to understand how to interact and benefit from the library.
- **From 2022 onwards**: At the time we conducted interviews, participants shared

that dedicated chat platforms, which rose to become the primary method of communication during the height of the pandemic, are still popular today. Other reference resources born out of the pandemic, such as online reference appointments, continue to thrive. On the other hand, the number of in-person reference interactions are significantly lower than pre-pandemic times as reported by almost all colleges we spoke to.

Trends and challenges in meeting student reference needs. *"How can we expect students to focus on, like, statistics when they don't have enough food ... when, you know, they don't have a house to live in?"*

- **Volume**: Per our interviews and questionnaire results, librarians did not see an uptick in reference questions and interactions, even as more questions emerged regarding community and technology support than those that comprise traditional reference work.
- **Nature**: Librarians we interviewed stated that reference appointments centered partially on reference questions and partially on making human connections during the pandemic. Multiple interviewees and survey respondents mentioned widespread insecurities impacting students' ability to access resources and succeed academically during the height of the pandemic; these primarily included accessing basic necessities such as food, housing, employment, and transportation. However, resources such as technology items—notably laptops and Wi-Fi hotspots—were likewise reported. For example, while students across Washington State requested technology items well before COVID-19, the pandemic increased the need substantially; many—if not all—colleges were unprepared for the level of demand

for such items, further marginalizing struggling students.

Perceptions about working with students. *"I think we're going to feel those long term effects for quite a while still."*

Interviews were the primary tool to uncover the following findings:
- **Digital skills**: Various levels of digital literacy also presented a barrier to student success. This is particularly important, as some interviewees reported digital interactions as their only lifeline to students.
- **Fears about insufficient resources**: Librarians and library workers reported budget concerns affecting the types of services and the level of service provided to students, faculty, and staff. This was furthered by an expectation of online services, and changing expectations around availability of librarians for in-person and virtual help.
- **"Students have changed"**: Moreover, library staff report that COVID-19 appears to have engendered personality shifts in the student population (e.g., more timidity), which continue to make meeting reference needs more difficult. Librarians attribute this change to school closures during the pandemic, which resulted in students widely failing to develop social-emotional learning skills they otherwise would have.
- **Feeling needed**: Some librarians expressed they felt needed more than ever, while others felt the opposite—this sentiment varied by institution.

Theme 3: How libraries responded to student needs

Virtual Reference Services (VRS). *"The way we try to meet [student] needs now has fundamentally changed."*

- **Prior limited use of VRS**: Before COVID-19, there were varying levels of

VRS offered. Starting in 2008, many libraries, including those who took part in our research, began participating in AskWA—a statewide cooperative 24/7 reference chat shared by traditional, community, and technical colleges—rather than hosting their own virtual chat service. Further, some libraries offered both virtual and in-person reference meetings for students, as indicated in the questionnaire chart below (1 = strongly agree and 5 = strongly disagree).

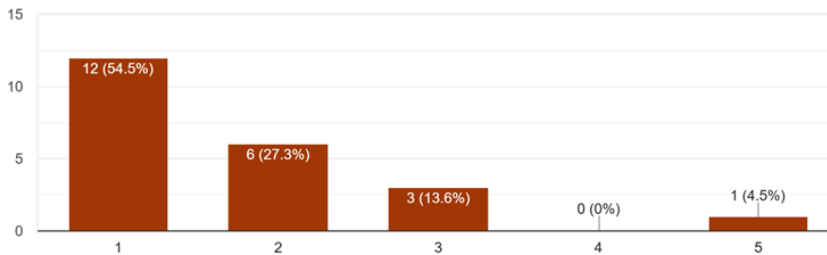My library had virtual reference services before COVID-19, beginning in March 2020
22 responses

Figure 3.

- **Rise of VRS**: All 34 library websites reviewed in November 2022 included some form of virtual reference, whether it be a chat service, virtual meetings, texting, or email requests. This breadth of offerings spoke to the dominance of VRS. Several interviewees mentioned that when opportunities for in-person reference services closed down, they began to take on more responsibility for managing the chat queue for their own student populations instead of relying on other co-op librarians.

Shifts in value. *"We, the brick and mortar, like, we have to be here."*

- The physical library: Many interview participants reflected on the importance of the physical library as a place to form and foster relationships with students. Several

librarians also mentioned that physical course reserves were a highly valued resource pre-pandemic. In-person interactions are desired by librarians, but online enrollment, when offered, continued in 2022 and even now into 2025 continues to be a popular modality among students.

- Resources and services: Interviews revealed that circulation services stopped or slowed, and libraries changed the focus of their faculty and staff. It was common for libraries to be responsible for lending programs for laptops and Wi-Fi hotspots. Libraries with existing programs often had to secure additional funding. Most librarians interviewed participated in developing virtual resources to be shared with students or for faculty to embed in LMS/Canvas learning courses.

Expansion of student needs. *"We're gonna have to do everything to reach all of our students."*

Interviews and write-in comments to the questionnaire informed the following findings.

- **Academic**: Most librarians already had a broad definition of reference needs before the pandemic, which was based on the particular needs of their students. They were prepared to work with diverse students with varying levels of experience with libraries and leveraged the "reference transaction" as a gateway to provide additional academic services to students. Many interview participants had clear ideas about what programs, professors, and types of students would be most likely to leverage the library (e.g., nursing).
- **Social/emotional**: Many interview participants reflected on the importance of supporting students who may be struggling with non-academic challenges. For example, during an online research appointment, one librarian would begin with an intentional personal check-in before diving into reference needs. For

some appointments, this check-in took up most of the appointment.

- **Technological**: To effectively facilitate virtual services, librarians and library workers needed to be capable of providing instruction and troubleshooting issues around different types of technology, as students had varying levels of digital literacy. Students' increased need for technology during the pandemic emphasized the pressing need for digital equity.

Areas of minimal impact.

- **Certain constants**: It's worth noting that a minority of librarians identified a few areas that were impacted minimally, if at all, by COVID-19. For instance, some librarians observed an ongoing challenge of outreach with technical college students who did not have a research focus (e.g., automotive or cosmetology students), while others reflected that they received strikingly similar types of questions virtually compared to those they had received in person.

Discussion

Reference needs are student needs at community and technical colleges. *"A lot of what they do at that desk might not necessarily be considered reference, but to us it is."*

Within the context of our findings, we conclude that community and technical college librarians consider a broad range of student needs to be included in the scope of reference, and that those needs diversified further during the pandemic. Community college librarians have long considered a wide array of reference needs that went beyond traditional definitions (Palmer, 2019). As one librarian we interviewed said, "I think community college reference services like ours run this huge, wide gamut. Whatever the students' needs are, I would say, reference services are." This approach was reaffirmed during the pandemic: reference services

expanded during COVID-19 as students' social/emotional and basic needs had to be prioritized ahead of research and academic questions. Perhaps this perspective is shared by other types of academic librarians, but considering the diversity of students attending a community or technical college, including non-traditional or vocational students, we believe the depth and flexibility of reference services in this context warrants particular attention.

COVID-19 revealed a proliferating digital divide. *"The one thing that the pandemic did is it unearthed the inequity of everything."*

Similar to other studies on this topic, we discovered that students' poor access to reliable Internet and devices—basic needs for students to be successful in remote learning—limited librarians' ability to meet reference needs during the pandemic (Blankstein & Wolff-Eisenberg, 2021). In a community college context, the stakes were especially high: students who could not adapt to digital learning simply did not continue their education, and students in programs that do not have a digital component (autowork, cosmetology, etc.) were not offered the choice to continue. Undoubtedly, the pandemic caused a disruption to social mobility for these students. Though many libraries we spoke with already employed online reference tools such as chat (via the AskWA consortium) and LibGuides, immediate adoption of these tools was lower than expected for most libraries, reflecting a gap in access for students. Most libraries we spoke with played an integral role in securing grant funding and providing technology resources to students, including Wi-Fi hotspots and devices.

In the wake of the pandemic, we should consider the impact not only to those who experienced the direct ramifications of the digital divide, but also those who worked so tirelessly to close it. Librarians who continued to work in-person faced personal health risks in order to deliver physical technology assets to students. Those who worked remotely were charged with ensuring security and safety of student

connections within the space of their own homes. What would community and technical colleges have done without these sacrifices? In considering how the pandemic impacted student reference needs, and how to proceed now that more light has been shed on the digital divide, we should center the professionals who provide access and digital skills. Their contributions have a resounding impact.

Disruption of reference as place *"I think [COVID-19] meaningfully diversified the way we provide research assistance. It forced deep thinking. We have much more information from students on the mix of needs—we have much more data."*

Relevant literature to this topic emphasizes reference as an activity tied to the physical space of the library (Kilzer, 2011). Librarians reflected on how the reference desk could serve as a gateway to the rest of the library and allow for strong connections with students. Several librarians mentioned the significance of in-person interactions; one librarian noted how the modality enabled them to be more conversational and "generate a more research-oriented transaction" from an initial transaction, such as one focused on basic technology. Another librarian noted how online reference "doesn't feel as personal" compared to in-person reference. Despite the prevailing preference for reference taking place within the physical library, libraries nonetheless poured resources into creating digital spaces for students, such as website resources, LibGuides, and Canvas modules. One librarian replaced the focus on reference as place with reference as relationship, remarking that "COVID has really highlighted how important it is [to] hav[e] a librarian mak[e] a connection with students in a classroom," whether that be an in person or online classroom, with the assistance of faculty in facilitating those connections. Indeed, faculty were identified as a key component to meeting student needs. As another librarian remarked: "If we can establish long-term sustainable relationships with faculty in a way that connects to the library, then I think we'll continue to have robust reference service needs." This refined

focus was echoed in another librarian's take that, regardless of the changes the pandemic engendered, librarians will "always be here as those connectors" between students and resources. While COVID-19 highlighted the merits of in-person reference interactions, it simultaneously clarified the importance of librarian-student relationships, which need not be exclusively cultivated in person.

Missing voices. *"We have to be more proactive about what we do, how you can contact us."*

During the research process, the concept of missing voices was brought up over and over, especially in the interviews. Librarians and library workers commented on the challenge of outreach to students, and sometimes professors, during the pandemic. These missing voices can make it difficult to determine the needs of students and affect the services provided by the library. Additionally, librarians wanted to know what other libraries were doing during the pandemic. Professional organizations filled this need to some extent but since community and technical college faculty are generally not compensated for publication, there is limited public information about such colleges' COVID-19 responses. One librarian noted how difficult it was to assess her college's, and in particular her library's, response to the pandemic, as she had no point of reference; she had little to contribute regarding how they compared: "It's hard for me to project how things are at the other community colleges, because I don't have enough discussions with them."

Limitations of research and recommendations for further study

Because our research focused on librarians and library workers, we did not collect data on student or instructor perceptions of the effect of COVID-19 on student reference needs. Further research in this area should seek the perceptions of these groups, as well as college administrators, and collect data on the holistic impact of the COVID-19 pandemic on community and technical college students. Additionally,

there was an incongruity between some responses to the questionnaire and interviews. For example, more respondents said "Disagree" to COVID-19 impacting student reference needs in the questionnaire. This may have been due to the format, or perhaps more comparison of librarian vs library workers perspectives is warranted. Further research on this topic should examine the change over time of the growth, maintenance, and/or decline of virtual library resources and physical library resources in a post-pandemic era, student needs and library resources in different regions (urban versus rural), and an analysis of VRS before, during, and post-pandemic via an examination of chat transcriptions.

Conclusion

The primary focus of this research was to understand academic librarians' and library workers' perspectives on how COVID-19 impacted community and technical college student reference needs. There is a recognized gap in this research area, as most research tends to focus on four-year institutions where formal research is most often conducted by and required of faculty. Not only is our article important for an under-researched educational demographic to use in their present-day decision making, but autumn 2022 was a unique time to research the effects of COVID-19 on a "pre-" and "post-" pandemic society. The main findings we uncovered through interviews, our questionnaire, and our website analysis shed much-needed light on the many ways that community and technical colleges librarians and library workers perceived the impact of COVID-19 on student reference needs.

Overall, our findings indicate that COVID-19 had a broad impact on student reference needs, and librarian and library worker perspectives underscore the myriad of direct and indirect effects. The central themes of our research findings pertain to library perceptions, the impact of COVID-19 on student reference needs, and library responses to student needs during the pandemic. COVID-19 expedited the move to online library services, and librarians perceived a major shift in student and institutional expectations surrounding this move. The decrease in physical interactions created challenges for librarians and motivated them to meet student needs holistically. COVID-19 had a marked impact on in-person and virtual interactions, with librarians reporting that reference interactions in both modalities had yet to reach pre-pandemic levels. There was a marked shift as well towards virtual services over in-person services that remained popular in autumn 2022, even though many libraries reopened to students. Student reference needs were especially impacted by access barriers relating to technology and digital literacy and other challenges stemming from the pandemic like budget cuts, the increasing digital divide, and changing expectations around librarian and library worker roles. Libraries shifted in major ways to meet student needs during this time, including a strong pivot towards VRS, expanded offerings for hardware lending, online resources, and OER, and a more concentrated awareness for the social and emotional needs of students.

For community and technical colleges, the pandemic emphasized student needs as reference needs, and highlighted how community and technical librarians and library workers have always gone beyond traditional definitions of reference even before COVID-19 to meet students where they are at. The pandemic aggravated existing issues around technology access, equity, and digital literacy. COVID-19 disrupted the reference desk as a physical place and gateway within the library, and librarians worked to create a digital place for reference. We recommend further assessments of this nature in other state and local communities while retrospective knowledge is still fresh, and to ensure that the roles and perspectives of community and technical college librarians and library workers are remembered and adequately represented.

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Appendices

Appendix A: Interview Guide

1. How would you define students' reference needs?
2. What were the significant milestones for [enter name of community college here] during the pandemic?
3. Do you think COVID-19 has impacted students' reference needs? If so, how, and why do you think that is?
4. What reference needs did you see an uptick in since the beginning of COVID-19?
5. Do you think COVID-19 has reshaped how librarians meet students' reference needs? If so, how, and why do you think that is?
6. What reference services, as deployed by librarians, did you see an uptick in since the beginning of COVID-19?
7. Do you believe the way librarians now attempt to meet students' needs fundamentally and/or permanently changed because of COVID-19? Why is that?
8. How do you see the future of reference services evolving?
9. Are there any services and resources that you recommend for further evaluation?

Appendix B: Questionnaire

	Questionnaire: Librarian Perception of Impact of COVID-19 on Community College Student Reference Needs					
	Note: In the below questionnaire, "students" refers to community college students. "Librarians" refers to academic librarians at community colleges. "The COVID-19 pandemic" refers to the Coronavirus pandemic, beginning in March 2020 and continuing today					
#	Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	There is a clear definition of "student reference needs" among the staff in my academic library					
2	I have observed that COVID-19 impacted my ability to meet student reference needs					
3	I have observed that COVID-19 impacted community college student reference needs					
4	My library had virtual reference services before the COVID-19 pandemic, beginning in March 2020					
5	My library currently offers virtual reference services					
6	The student population I support understands what the concept of reference services are, in general					
7	During the COVID-19 pandemic, my library communicated the reference services available to students					
8	During the COVID-19 pandemic, there was an uptick in student reference needs					
9	During the COVID-19 pandemic, the library had adequate infrastructure (e.g., hardware, software, facilities) to support student reference needs without additional investment					
10	I felt that the library staff had adequate training to meet student reference needs during the COVID-19 pandemic					
11	Prior to the COVID-19 pandemic, I felt confident in my ability to meet student reference needs					
12	During the COVID-19 pandemic, I felt confident in my ability to meet student reference needs					
	Would you be willing to participate in a 20-minute interview?	Yes/No, if Yes - contact info				
	Do you have any additional comments?	Free Text				