

Feature

Investigating Proactive Chat

Exploring Potential Users and Accessibility

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Introduction

While libraries have long offered virtual reference chat as part of a diversified reference model, the COVID-19 pandemic made this service the primary way for users to connect with many libraries.¹ Proactive chat is an option for virtual reference service (VRS) that pops up in the user's browser after a set amount of time. In contrast to static chat widgets, the proactive chat widget uses a pop-up action to invite the user to chat with a librarian rather than relying on the user to initiate the chat from a static page. Proactive chat can help drive use of library VRS, but at the University of Minnesota and in other libraries, concerns around volume, desirability, and accessibility prevent implementation of this VRS function. This article examines two major areas of interest in implementing proactive chat at the University of Minnesota: (1) investigating user impressions of current static chat widgets and (2) testing proactive chat widgets and triangulating the testing data with an investigation of the user experience and accessibility of Springshare's LibAnswers proactive chat widget. Through qualitative focus groups and documentation review, we sought to understand whether implementing a proactive chat widget would be feasible and welcomed by users at the University of Minnesota. Toward this end, we integrated an undergraduate coinvestigator to help collect peer data from our target user group for this study, University of Minnesota students. They served as a research partner and author on this project, assessing literature and interpreting data alongside the other coauthors of the study, who are practicing librarians at the University of Minnesota.

Literature Review

Proactive chat has been shown to increase the volume of research questions posed to library VRS. In the literature, volume increases are diverse among single-institution studies and range between roughly doubling traffic² to much more significant increases of 300% to 600%³ over static widget chat traffic. Hurley suggests that proactive chat is generally acknowledged to create "sudden, substantial, and sustained increases in the number of transactions" (87).⁴ While some articles noted significant events that may have contributed to VRS traffic increases, such as the COVID-19 pandemic, there is also some evidence that the length of time that elapses before the proactive widget pops up on the screen, termed *launch time* or *trigger time*, can have an impact on the volume of chats received.⁵ There is also evidence from the literature that rather than opening chat services up to more directional or informational questions, proactive chat actually increases the number and proportion of reference questions.⁶

Despite increases in the volume and complexity of chats in proactive environments and the indication that proactivity itself drives use in these environments,⁷ proactive chat widgets have not been widely adopted. Some hesitations expressed in the literature include that these widgets may be “annoying”⁸ or that interacting with the technology to silence unwanted chat pop-ups can be frustrating.⁹ Imler’s usability study of proactive chat widgets found that library users generally felt that proactive chat would be a “welcome intrusion”¹⁰ and that they would be more likely to use VRS with the proactivity function over a static widget. This reflects general findings about the priority of convenience as a factor for VRS use¹¹ and usability studies that have found that a large proportion of potential users of VRS do not know that it is a service offered by their library.¹²

Embedded in the conversation about whether pop-ups are annoying or distracting is the concern that proactive VRS widgets might present barriers to accessibility. Accessibility considerations have not been well discussed yet in the proactive chat literature, and concerns that may be particularly relevant to proactive features, such as their accessibility and desirability to neurodiverse users, are not yet well understood. Universal Design principles have been considered for these users,¹³ but there are no broadly accepted specific standards, and initiatives in this area have not always been successful.¹⁴

A recent usability study conducted at Pratt University¹⁵ investigated the language and positioning of the proactive chat widget and found that users were amenable to the proactive element, that users preferred clear language such as “live chat” or “ask a librarian,” and that the bottom right of the page was an ideal location for launching the widget. However, this study did not include an accessibility evaluation. Additionally, a study of the data from three institutions¹⁶ found that most chats originated from the website or discovery layer and that resource-specific widgets (such as those from specific databases) had minimal interaction.

Longmeier and Foster found in their survey results that there was not a common organizational location for disability and accessibility services in libraries and that this work often fell to library employees who worked closely with users.¹⁷ Roberson et al. also found that while students may feel comfortable disclosing to their university or college that they have a disability, a smaller percentage of those students ask for accommodation.¹⁸ This research suggests that Universal Design, incorporating broad access into the design of something rather than relying on adapting existing systems, services, and spaces to accommodate users,¹⁹ should be central to developing services for libraries where accommodation requests may not be reported or resourced appropriately to respond to requests as they are raised.

Theoretical Frameworks and Positionality

The first two authors of this article are practicing librarians and VRS leaders at the University of Minnesota. The University of Minnesota is a large, research-intensive university in the Midwest United States. In the 2024–2025 academic year, the University of Minnesota enrolled more than 70,000 students, of which 56,666 (81%) were undergraduate students.²⁰ We recruited an undergraduate coauthor on this work who contributed to leading peer focus groups with other students, analyzing the data from focus groups collaboratively with other authors, conducting research into the literature, and reviewing the final publication. Because this study focused on technology practices and preferences of students at our institution, we felt that incorporating an insider perspective²¹ would benefit our data collection and analysis. Drawing from literature around peer-interviewing practices in qualitative research,²² we recruited a second-year undergraduate

student at the University of Minnesota working on a double major in computer science and economics as our coauthor.

Although this study does not focus directly on the content of VRS chat, the design of the study draws theoretically from the *Content/Relational Model of Success in Reference Encounters*,²³ which uses communication theories to help articulate models of successful reference encounters for both librarians and users from both content and relational perspectives. There is some evidence that proactive chat changes the relational nature of the VRS encounter because users “feel they’ve been invited to ask a question, rather than seeking out help” (99).²⁴ This framework, along with models of convenience in VRS,²⁵ contributed to the design of the study.

Research Objectives

After the closures related to the COVID-19 pandemic in March 2020, the University of Minnesota saw an increase in chat usage on our website. This was part of a larger trend in academic libraries at this time.²⁶ At the University of Minnesota, chat volume tapered off after on-campus instruction resumed in the fall of 2020 and has continued on a downward trend. Table 1 provides trend data for the volume of chats received through the chat widgets on our website and discovery layer. Physical visitor counts collected at library gates are provided as a counterpoint to demonstrate the impact of the pandemic on physical space and VRS.

Table 1. Volume of Chats Received Through Univ. of Minnesota Chat Widgets

	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
Chat and tickets	5,750	5,892	9,475	9,682	13,156	13,628	9,894	9,123	9,012	9,173
Questions at physical desks	33,367	34,819	36,882	33,172	23,908	6,169	18,388	19,122	23,891	27,728
Combined gate counts	1.6M	1.5M	1.5M	1.4M	905K	143K	959K	1.2M	1.2M	1.3M

Figure 1 models and compares this data, where the impact of the pandemic, through reductions in physical visitor counts and corresponding increase in VRS, is clearly visible in the pandemic years

Annual VRS Volume and Questions at Physical Desks, 2016–2025

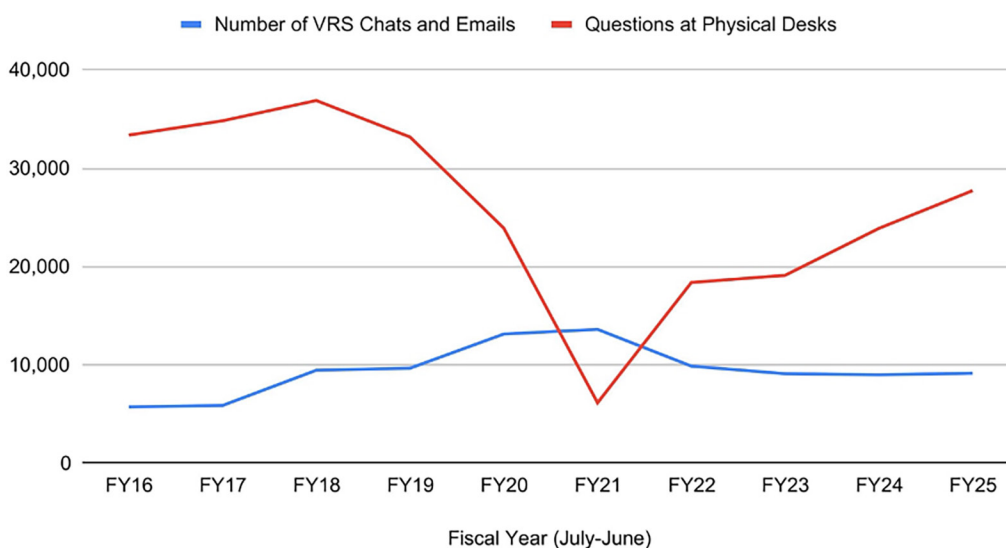


Figure 1. VRS chats versus in-person questions.

of 2020–2021. Physical visitor counts from 2023 to 2025 have not yet exceeded prepandemic numbers but have been trending upward from a significant decline during the pandemic. VRS counts represent only a slight decline from 2018–2019 numbers but remained relatively stable between 2023 and 2025.

Chat at the University of Minnesota is offered 24/7 through a collaborative reference model that includes our statewide cooperative (CO-OP) and the Springshare Global Chat Cooperative. VRS is provided through Springshare's LibAnswers. At the time of this study, our static chat widget was in the lower right-hand corner of the screen, a small green box that says "24/7 chat." Figure 2 shows a screenshot of the home page of the University of Minnesota Libraries, with the green static chat widget in the bottom right corner.

Creating welcoming technology spaces is part of the mission of the University of Minnesota Libraries, and a proactive chat project could not move forward without understanding the accessibility implications of such a change. Accessibility evaluation represents a gap in the proactive chat literature, and this study focuses on identifying potential barriers for VRS users in Springshare's widget and also evaluating the potential use and ideal configuration for a proactive widget at the University of Minnesota. Our research questions focus on the visibility and usability of the current static chat widget, University of Minnesota student impressions of a simulated proactive chat widget that was shown as part of the focus groups, student opinions on the positioning of this simulated proactive widget, and questions around the accessibility of Springshare's proactive chat widget.

Figure 3 shows the pop-up window with the out-of-the-box language provided by Springshare: "Do you need help? A librarian is online ready to help." Two button options are provided under this prompt, allowing users to select "Chat Now" or "No Thanks."

This article addressed the following research questions:

RQ1: Are intended user participants aware of the current chat options on the library website?

RQ2: Would intended user participants prefer to use static or proactive chat options?

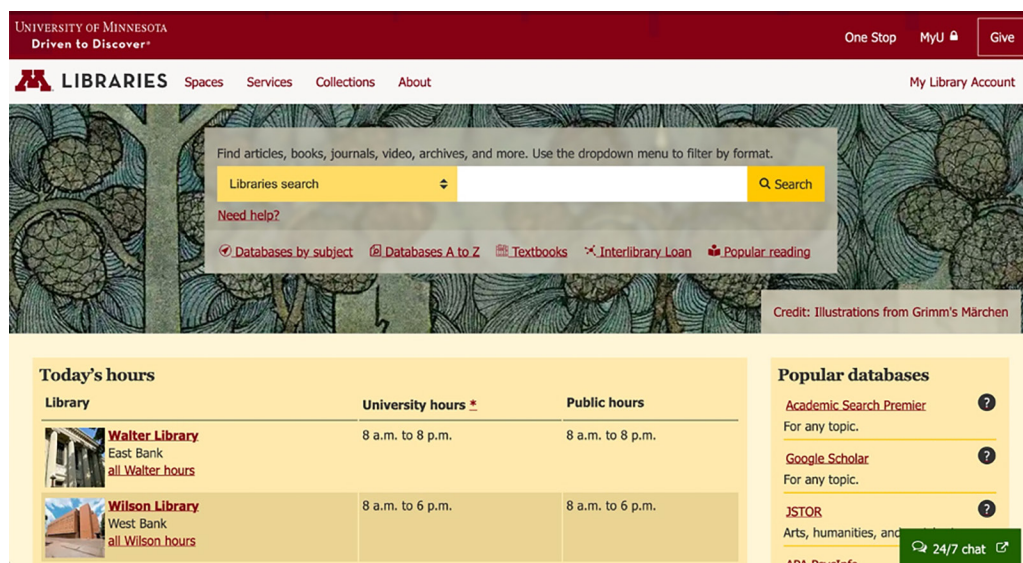


Figure 2. Screenshot of the home page of the University of Minnesota Libraries.

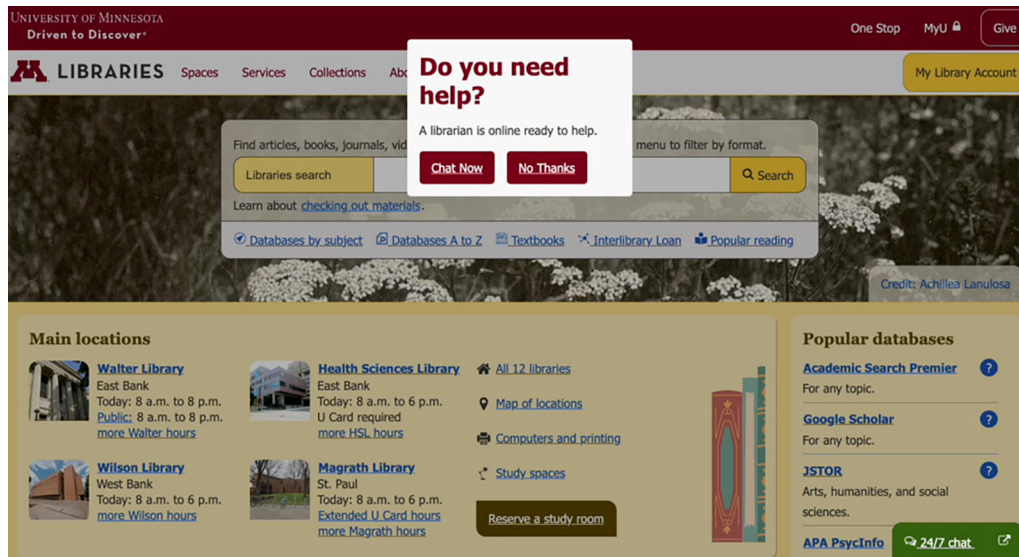


Figure 3. Proactive pop-up chat prompt.

RQ3: Do intended user participants feel that the proactive chat widget would impede their use of the library website?

RQ4: Where would a proactive chat widget be most useful on the library website?

RQ5: Does Springshare's proactive chat widget meet accessibility standards outlined by the University of Minnesota?

The first three research questions used a focus group approach to collect data, whereas the final two questions used a combination of focus group data and accessibility assessment.

Methodology

Drawing from the research, this study focuses on an integrated assessment of Springshare's proactive chat widget and user experiences. Toward this end, we conducted two sessions of impromptu focus groups and interviews with University of Minnesota students, consultations with representatives from the Disability Resource Center (DRC) at the University of Minnesota, and an analysis of Springshare's accessibility documentation and relevant literature in this area.

The target user groups for this study included University of Minnesota undergraduate and graduate students. We recruited an undergraduate coinvestigator who assisted with the study design, data collection, and data analysis. The goal of our focus groups was to collect data from both students who were already library users and those who had not yet used the libraries. The first set of focus groups was conducted in the study room of a collaborative space in one of our libraries. Participants in the focus groups were groups of students studying together in library spaces who were recruited via signage and direct invitation in the space. A total of seven students in three focus groups were recruited from the libraries in May 2025. The second set of focus groups was conducted on the main campus mall on a beautiful day toward the end of the spring semester 2025. Participants in focus groups were small groups of students walking together. A total of twenty-eight participants were recruited in fifteen focus groups. A consent information form was shown to students before their participation in the study, and a waiver of signed consent was approved through the University of Minnesota Institutional Review Board for this study. There were between one and four participants

in each focus group, and the investigators spoke to each individual participant for five to eleven minutes. Participants in focus groups were provided with snacks for their participation in the study.

For the accessibility review portion of the study, a test widget was created for proactive chat within Springshare and hosted on a development instance of the library website. This draft proactive widget was shown to participants in focus groups as part of the interview protocol, which is included in the Appendix. The draft proactive widget was also submitted to the University of Minnesota's DRC for an accessibility check, and investigators worked with employees in the DRC to test the tool for accessibility, including live testing with a screen reader. Investigators also conducted an analysis of Springshare's Voluntary Product Accessibility Template (VPAT) documentation for LibAnswers.

Focus groups with student participants were recorded in order to create a text transcript for analysis. Interview transcripts and other documentation were analyzed collaboratively by the investigators using the NVivo qualitative analysis software. Open inductive coding was used, as well as memoing and theme summary documents created by the authors. Intercooder reliability was conducted with two of the investigators on 20% of the interview code content and was calculated at a kappa of 0.57, indicating moderate agreement.²⁷

Results

The study recruited a total of thirty-five participants, although three participants were not included in the results analysis because they identified as nonstudents or University of Minnesota staff. The usable data included thirty-two total participants, of whom twenty-six (81%) were undergraduate students and six (19%) were graduate students at the University of Minnesota. This reflects the proportional enrollment of undergraduate and graduate students overall at the University of Minnesota. The data included eight (25%) students majoring in arts and humanities, including students in the University of Minnesota's College of Liberal Arts programs and the College of Design; eight (25%) students majoring in math and science topics; seven (22%) majoring in business and finance programs; four (13%) from engineering programs; three (9%) from education and human development programs; and two (6%) who had not yet declared a major. Throughout the results section, verbatim quotes from participants will be cited via their participant number; for example, participant 1 will be represented as P1.

The first research question asked whether intended user participants were aware of the current chat options on the library website. We found that the majority of participants (approximately 90%) were not aware of the current chat service available on the library website. This was true for focus groups conducted within the library as well as for participants recruited outside of the library. We asked participants how they would contact the library if they had a question about homework or research, and some suggested other routes for these questions if they were unfamiliar with library services. One student mentioned, "I prefer directly asking my course professor or the TA [teaching assistant] for course-related questions, not anyone in the library" (P28). P17 also said, "I think I would maybe contact my teacher because he teaches me how to do things like, kind of research things." P3 said, "I don't think I've ever thought about asking the library for help with homework." In fact, of our thirty-two participants, ten (31%) stated specifically that they did not use the University of Minnesota Libraries for homework or research. Some students were pleased and surprised to learn about library service offerings, including the 24/7 chat cooperative, stating, "That's like having an army. Oh my word!" (P6).

Participants from both groups suggested that they would reach out to the libraries in person rather than visiting the library website if they had questions. P1, who was part of the in-library focus group,

said, "I think I'd go to, like, the front desk, like out there." P2 from the same focus group echoed, "Yeah, I would say front desk too." Students who participated in the focus groups outside the library also expressed a preference for in-person service. P25 stated, "If I wanted to come check the libraries, I'd probably physically come in and then ask someone at the front desk or something." P26 said, "I would just go to the help desk and ask them my question." P28 agreed: "If . . . I have a question, I'll ask the front desk."

Only three (9%) of participants indicated that they had used the libraries' VRS chat. One of the students, P20, said they found out about the chat because "my teacher told me to go there." Most students were unaware of the VRS chat, but many were pleasantly surprised to hear it was an option. P6 exclaimed, "I had no idea that you could talk to someone. That's actually really nice." Several students also raised concerns that the chat service could be artificial intelligence (AI). P11 questioned, "I don't know if it is like an AI-generated chat to ask more questions, or . . . ?"

Investigating the second research question, we were interested in whether participants would prefer to use static or proactive chat options. To gauge perceptions of proactive chat among participants, we asked about whether they used customer service chat on other sites, such as retail sites and banking. Of participants, 44% ($n = 14$) said they did use commercial chats, although some indicated they only used these occasionally, and some participants, such as P31, specified that they were not happy with the service provided through these chats. P28 clarified, "I don't use the chat feature to ask any technical questions. [If] I just have some doubts regarding the inventory, or something like that, then only I use the chat feature." Several participants who indicated that they did not use commercial chats had strong negative feelings about them, including P19, who stated, "I think that they're stupid and they're never helpful." P21 from the same focus group agreed: "Yeah, I usually don't [use them], because they're pretty difficult to work with and don't always help me."

When we demonstrated the proactive widget to participants and asked whether they would use it on our site and whether they would be more likely to use it over a static chat widget, overall, twenty-two participants (69%) stated that they maybe, probably, or definitely would use a library pop-up chat, and seven participants (22%) said they definitely would not use it. Some participants specifically referenced the proactive action as a reason not to engage with the chat widget. P32, for example, was blunt: "I think I'd probably say no out of spite." P18 echoed this, stating, "I think I would close because it just popped up." Some participants expressed a stronger interest in the static widget, like P2, who stated, "I think I would use the original one more, not the pop-up."

Some participants suggested that the proactive pop-up would get in their way when using the site. P14 said, "Sometimes that annoys me when that comes up and I don't want to use it. And, like, if I see it in the corner, and I thought, oh, maybe it'll be helpful, then I would use it. But I think if it comes like that, I'd be like, no." P29 stated, "I would say it will cause a hindrance for me, because I know, like, what all steps to follow to get to the thing I want. So it is just wasting some of my time. So my first reaction would be to just click 'No Thanks' as soon as possible, without even reading anything." Some participants indicated that they would not use the proactive widget, but they thought that it was a positive idea. P3 stated, "At least I would know the pop-up is there; I would probably maybe use it more."

From the participants who were in favor of the proactive chat widget, P26 said, "It will obviously have a higher likelihood that I will click on 'Chat Now' and use it for some of my queries." P11 and P12, who were part of the same focus group, also expressed a positive impression of the proactive widget. P11 stated, "Yeah, I feel like it would be more effective in helping me find my answers." P12 responded, "I think so, yeah, me too, especially when I'm lazy." P7 suggested, "I think it'd be good

for the people that don't know it exists . . . because it has a 'No Thanks' button, so it doesn't make you chat." Some participants expressed positivity about a proactive chat widget with the caveat that a real person was answering. P25 stated, "If I had a question, it's just easier to talk to a librarian." P30 said it was a good way to help users know that there is a chat and "that there's someone on the other side listening." Only one participant felt negatively about having a real person on the other side of the VRS widget. P2 theorized that if they responded positively to the proactive widget pop-up, "I feel like a real person would like to try to talk to me. I just feel too anxious. I just close [it]."

We asked participants questions about their use of the library website in order to determine whether they felt a proactive chat widget would impede their use of the website for the third research question. We asked participants how frequently they used the library website, and the results were very distributed. It was an even division between those who never used the site, those who used it sometimes (between one and four times per semester), and those who said they used the site often. Some participants specified that they only visited the library website to book physical space and study rooms. Of participants who used the site frequently, P10 said they used it, "Very frequently. Every time I need to do research." P14 said, "I feel like it's pretty easy to navigate in terms of finding things like hours, study hours, or maps of locations." P5, who was part of an in-library focus group, stated, "I use it pretty frequently, honestly, like right now I have a lot of stuff checked out, and I go in there all the time to check if I'm doing something like a research paper or something." P6, from the same focus group, agreed: "Same. Mainly I look for sources and see if I can get books . . . most of the time . . . I'm looking for pieces that I can't access online." P7 said, "I use it for most of my scholarly sources, just because it's easy to find scholarly sources." There was not much indication that participants felt a proactive chat widget would impede their use of the website, although some participants were uncertain how many times they would need to click "No Thanks" during a session if they did not want to chat.

Although most participants felt positive about using the proactive widget, several were lukewarm, such as P1, who stated, "I feel like if I was in desperate need of help, yeah, I would use it." Several participants expressed reservations because they thought that the library VRS was a bot or generative AI. P10 suggested, "I think if I thought it was AI, I would have reservations, because obviously, some of the chat modules, they aren't as helpful. People are always a high priority." P21 expressed a similar sentiment: "I would think it would be helpful . . . but I would have that same question, if it was like a bot or if it was a real human that was helping me out." One focus group also included this exchange:

Interviewer: What would you think if you encountered something like this on the library website?

P23: Is it made by AI?

Interviewer: No, it is a real live person.

P23: Oh, okay, that's pretty good, then.

P24: I think that's cool, yeah.

Participants who inquired about the nature of the chat were pleasantly surprised to learn that responses were provided by a human librarian, and many expressed more interest in using it once they knew it was not AI.

For the fourth research question, we asked participants about the design elements of the chat to determine where a proactive chat widget would be most useful on the library website. During the focus groups, we solicited feedback on the design of a test version of the proactive widget, which

was hosted on our development site. The test widget popped up in the center of the page after a ten-second delay. The feedback for the test widget was largely positive, and we got a sense of how these participants felt about a pop-up chat—as well as how strongly some of them felt. Every participant who had an answer felt differently about the positioning of the widget on the page. Some, like P10, liked that the widget popped up in the middle of the screen, stating, “I think making it obvious is the best way to do it.” P11 also thought the middle of the screen was the best spot. “I think it makes sense where it is right now, because it’s . . . easier to navigate.” P19 echoed this, adding, “You don’t have to look for it.”

Alternatively, some participants, like P12, expected to see it in a bottom corner: “I think on other websites, it’s usually in the bottom right corner, so that’s where I go to look for it. It’s more accessible right there.” P14 and P15 also mentioned a bottom corner, and P14 said of the widget popping up in the center of the screen, “This is like *too much*.” P7 suggested the lower corner, noting that the center placement might cause them to think “it’s like a virus pop-up.” P6 in the same focus group added, “Yeah, I see a lot of those, and I immediately shut them down.” P23 thought the middle location was “a little in your face” and then suggested the “top” somewhere. P32 also suggested a corner: “It annoys me less if it [is] near the bottom corner, or something near the bottom corner.” Participants also commented on the design of the original static widget, with one focus group agreeing that the current widget was too small. P26 explained, “I would say this is very small . . . the chat feature is not that visible.” P27 echoed this: “Same again. Right now, it’s so at the end of the screen that my attention does not naturally go down to it.” P28 added, “It’s really small, and my attention wouldn’t go in that corner.”

Participants expressed concern that the proactive widget could be annoying if it continued to pop up after respondents indicated they did not want to chat. P7 suggested, “I think it’d be good for the people that don’t know it exists . . . because it has a ‘No Thanks’ button, so it doesn’t make you chat.” P6 agreed, “Because then once you know it exists—which is awesome because I wouldn’t have known otherwise—if there’s a way to be like don’t ask me again. . . . So, nice, otherwise that would start to drive me insane.” P17 and P18 also expressed concern about repeat pop-ups. P18 suggested, “Because every time that I get on the website and I have to click this every time, it’s kind of annoying a little bit.” P12 suggested that the proactive element could be a good marketing tool but appreciated that the static widget would always be there as well: “I think usually when I’m using the website, I, like, search the stuff first, and then I’ll go to the chat if I can’t find it. So, I feel like if that popped up when I was first on the website, I’d probably say, ‘No Thanks.’ But it’s helpful to have the little tab in the bottom when I, like, can’t find something, and then I go to it.”

The fifth research question focused on whether Springshare’s proactive chat widget meets the accessibility standards outlined by the University of Minnesota. To investigate this research question, we both reviewed the accessibility information provided by Springshare and enlisted the assistance of a representative from the University of Minnesota’s DRC to review the proactive test widget we created and assess it for accessibility. Springshare provides VPAT structured accessibility documentation via the Springshare Lounge, which is accessible via individual accounts for users at Springshare customer institutions. The VPAT for LibAnswers states, “We have tested all elements of the LibAnswers interface using VoiceOver, and regularly test LibAnswers using SiteImprove and WAVE. Page content is structured in a meaningful hierarchy and can be navigated and understood using a keyboard and/or screen reader, and we strive to make sure all development is executed in a way that’s meaningful and clearly understandable to users without vision” (36).²⁸ Springshare notes that the company uses “the World Wide Web Consortium’s Web Content Accessibility Guidelines (WCAG) 2.1 as our guide in the design and development of our products,

with a goal of meeting Level AA standards.”²⁹ WCAG represents a series of standards that can apply broadly across different technologies to help promote known accessibility improvements.³⁰ The VPAT for LibAnswers conforms to these standards, articulating how the product meets each standard. WCAG 2.1 is also the standard required for implementation of Title II of the Americans with Disabilities Act (ADA).³¹

In the accessibility review provided by our institution’s DRC, we were assigned a representative from that office to live test the proactive chat widget on Zoom, sharing their screen and audio. Using screen reader software, our partner live tested the proactive chat widget with us. They had experience working with Springshare products before and expected the product to meet the accessibility requirements. When the proactive chat was initiated, the screen reader was able to read the pop-up text and the content behind it. The partner confirmed that focus was not obscured when using the pop-up chat. The Escape key worked to silence the pop-up, which is important for keyboard-based navigation. After silencing the chat, the user is returned to their workflow. They were able to successfully navigate the proactive widget using their test screen reader and successfully silence the widget and return to regular page flow.

Our partner from the DRC suggested two changes to the design of the widget to improve accessibility. First, to update the header style in the title of the pop-up widget, which was using the H2 subheader style and adding an “x” to the top right corner to opt out of the pop-up, in addition to the “No Thanks” button. We discussed the concern that participants expressed that the pop-up chat would continue to disrupt workflows even after users opted out using the “No Thanks” button, and our partner confirmed that this could be disruptive to workflow if the choice was not persistent.

We also discussed the potential for the pop-up to be disruptive to neurodiverse users, and our DRC partner confirmed the challenges of designing and testing for this. They offered a few suggestions, including planning and testing around timing for the widget and structured testing of the persistence of the “No Thanks” button for silencing the chat. This echoed what we heard from participants in the focus groups: It is ideal for the chat to remember for the session that after it’s dismissed, it shouldn’t pop up again. We also talked about the timing of the chat—whether it should only pop up after thirty or even sixty seconds. Our partner also suggested that we follow the statistics on this if we establish the proactive tool.

Limitations

The design of the study was successful in recruiting both library users and students who had not yet used library services, but the participant group was not structured to be representative of these groups. Students were recruited from only the University of Minnesota, so while this single-institution study is not generalizable, we do feel that the findings are transferable and the method is replicable, particularly in institutions that are also using Springshare’s LibAnswers for VRS and considering implementing proactive chat. This study also only captures one particular moment in student information practices. Many of our participants were thinking about the impact of generative AI on their information lives even as we talked to them about the implementation of this specific tool. Future studies could take a broader view on this and further investigate the impact that generative AI has on VRS.

We also recognize that the literature scope and data collection around accessibility are limited. We had hoped to find more qualitative investigations of accessibility relating to neurodiversity. Qualitative studies building on this work could investigate this more fully with user populations that identify as neurodivergent to help build a better understanding of how proactive chat widgets

are received by a broader range of users. Although this study was conducted through our own perspectives, we took steps to minimize bias, including developing a research team with diverse experience and recruiting an undergraduate coauthor who provided a different perspective on our data and analysis.

Discussion

While we specifically sought to recruit participants who were not necessarily library users, we were surprised by the proportion of students who were not aware of our VRS offerings. Many of our participants were delighted to hear that the library offered such a service and that it was staffed by human librarians; thus, the study turned into a guerrilla marketing campaign. The University of Minnesota does promote VRS as part of library outreach and instructional programs, particularly integration into the first-year writing program at our institution, but nearly all participants who had heard about VRS chat learned about it from their course instructors. This has implications for how we promote VRS, and ensuring that instructors know about it and can refer students to it at the point of need might be a better bet than focusing on promoting directly to students at the point in their learning where using the service is an abstraction. This also suggests that proactive chat might be a more effective way to promote the service because of its integration with research at the point of need within the library website.

In investigating participant preferences around proactive chat design, we heard that the quality of service was important to them in their use of commercial chat services. Even participants who said they did not use customer service chat on retail sites had used them enough to form an opinion. Participants indicated quality-of-service reasons for not using commercial chat, including that it wasn't helpful or it was "stupid" (P19). Our current VRS service earns consistently high comments and rankings from users in the native survey that Springshare offers as part of the LibAnswers service. Part of the core of our service model in LibAnswers is staying attuned to quality, including sharing positive comments each month as kudos to our staff directly and sharing the monthly service rating, which makes use of Springshare's built-in four-point rating survey, with chat participants and other library staff. Our current VRS users love the service, and balancing quality control with volume increases could be a challenge in implementing proactive chat.

We were also surprised by the number of participants who told us they would visit the library in person if they had a question. While gate counts have recovered since the COVID-19 pandemic, gate count volumes in 2023–2025 did not exceed prepandemic numbers, and VRS is a proportionally stronger service postpandemic. Some participants who did not even routinely use the website to access services or research had used it as a portal to access physical study spaces in the buildings. Both the low visibility of VRS in the institution and a preference for face-to-face interaction echo the results of Connaway and Radford's 2011 *Seeking Synchronicity* research,³² suggesting that barriers to accessing VRS may not have changed significantly. In terms of our accessibility review of the proactive chat product offered by Springshare, we were satisfied that it met the standards outlined by the University of Minnesota through our review of documentation and our testing of the widget with our DRC representative.

We should not have been surprised that AI came up as frequently as it did. Although we did not ask participants specifically about it, many drew connections between the VRS service and their use of AI. We have also noticed an increase in VRS patrons in LibAnswers treating our chat service as if it is an AI chat form, including submitting keywords rather than questions, and decreases in the relational aspects of VRS, including greetings and closing rituals.³³ Some participants indicated that

they would use AI over a VRS service in the library, like P27, who stated, "I use ChatGPT for almost everything, so it's more user-friendly for me." Most participants, however, were impressed that the library offered live human chat and suggested that we promote that aspect of the VRS more heavily. P20 even suggested that we update the language of the widget: "I think you need to put the words 'a real-life librarian.'" Librarians have legitimate concerns about the rapid rise in generative AI use. In their article on AI adoption in libraries, Harisanty et al.³⁴ argue that while library professionals should explore AI tools, they are not optimized for our work, especially because these tools are still in an emergent phase. In 2024, Li and Coates put ChatGPT to the test and asked it ten common questions asked by their student and faculty patrons, and their results found that the answers were not always correct or truthful.³⁵ While generative AI tools continue to evolve, there are still significant barriers to understanding how to teach and advise about these tools for librarians.

Overall, our participants were very willing to try proactive chat and thought that VRS seemed like a potentially helpful service. Our takeaway from conversations with participants is that proactive chat could be a helpful bridge to place VRS at the user's point of need when they are doing research and coursework. Most of our participants who had used VRS were referred by an instructor in the context of an assignment, and we did not hear from any participants who learned about VRS through other types of library communications. We learned that our participants highly value quality in online chat interactions and that maintaining quality control should be a primary goal of proactive chat service, even as volume increases. We also learned that for many participants, physical library spaces are psychologically important, and maintaining a physical presence along with a robust VRS service was an important goal. Promoting VRS as a tool that library staff in the buildings can use for referrals may be a way to bridge access for users. While we felt satisfied that Springshare's proactive tool met all accessibility standards expected by our institution, there is still more work to be done to understand the potential impact of a pop-up library chat on how students work on the library website, including understanding how neurodiverse students interact with the tool. Many students drew parallels between VRS and generative AI tools, but nearly all of our participants wanted to talk to a human. Most librarians also want to connect with students, so proactive chat may be a powerful tool to help make these connections.

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Appendix: Focus Group Protocol

Begin with introductions: name, year of study, major or college.

Interviewer will show the library website and indicate the chat button at the bottom of the screen.

- How frequently do they visit the library website?
- If they had a question about library policies today and wanted to contact the libraries, how would they do it?
- If they had a homework or research question today and wanted to contact the libraries, how would they do it?
- Have participants ever used the chat feature on the library site?
- If they have used it, what was their experience like?
- If they have not used it, why not?
- Do they use chat features on commercial/retail sites?
- Have they ever encountered a pop-up chat on a commercial/retail site? If so, what did they think about it?

Show created visual of pop-up library chat.

- What would they think if they encountered a pop-up chat on the library page?
- Would they use a pop-up chat feature if they had a question about library policies? Why or why not?
- Would they use a pop-up chat feature if they had a homework or research question? Why or why not?
- Would they be more likely to use this pop-up than the existing chat feature?
- Where would they expect to see the pop-up feature? Is the location shown correct, or does it make more sense in another location?