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Abstract

Libraries can play a role in navigating the AI era by integrating these tools into information literacy (IL) programs. To implement generative AI tools like ChatGPT effectively, it is important to understand the attitudes of library professionals involved in IL instruction toward this tool and their intention to use it for instruction. This study explored perceptions of ChatGPT using survey data that included acceptance factors and potential uses derived from the emerging literature. While some librarians saw potential, others found it too unreliable to be useful, yet the vast majority imagined utilizing the tool in the future.

Introduction

Artificial intelligence (AI) encompasses diverse technologies that enable machines to simulate human cognitive capabilities. The subset of AI known as generative artificial intelligence (genAI) immerses itself in extensive datasets and learns from them. This learning enables it to create original content such as text, images, audio, and video based on its comprehension of the acquired information. GenAI, once limited to technology professionals and related industries, has now become ubiquitous across diverse sectors and systems. In 2015, OpenAI was established, marking the beginning of their foray into generative chat. Subsequently, in 2018, they unveiled their inaugural model, GPT-1, showcasing their breakthrough advancements in language generation (OpenAI, 2022). In late 2022, OpenAI launched a free version of ChatGPT, sparking widespread discussions and intense interest. GenAI relies on machine learning models trained on massive amounts of data, and the model learns the underlying patterns and relationships within the data (Lund & Wang, 2023). It uses these deep learning models to produce text and graphics that resemble human speech in response to a wide range of intricate stimuli, including questions, directions, and prompts. (Lim, Gunasekara, Pallant, Pallant, & Pechenkina, 2023). While traditional AI excels at data analysis and interpretation, generative AI thrives on data abundance to produce novel outputs inspired by learned patterns (Ayuya, 2024). The technology's potential and implications, both positive and negative, have made it a uniquely positioned innovation, igniting fascination and debate, ranging from enthusiasm to concerns about its societal impact.

So why did ChatGPT inspire so much attention and conjecture? The technology's popularity can be attributed to a combination of particular benefits not seen in other large language learning models (LLM). ChatGPT is free, web-based, and easy to use, even without programming experience. ChatGPT's widespread presence in the media garnered significant attention, resulting in a deluge of news stories, opinions, and recommendations. This emerging phenomenon has also had an impact on academic libraries.

Literature Review

AI in Libraries

When OpenAI introduced its genAI application, ChatGPT, the implications for libraries were not immediately apparent. Libraries' use of artificial intelligence (AI) is well documented with environmental scans, systematic reviews, and case studies. In 2018, professors Woods and Evans conducted survey research and found that "librarians are not overly concerned about occupational attrition or the transformative effects of AI on the field of librarianship" (p. 29). Interestingly, they concluded that, compared to other professions, librarians were not meaningfully addressing AI in a field that has dealt with disruptive technologies more than its fair share throughout the years (Wood & Evans, 2018). Then a shift in the perceived usefulness of AI in libraries occurred. Researchers Cox, Pinfield, and Rutter (2019) also collected predictions through interviews regarding AI's potential effects on university libraries and the potentially disruptive nature of AI. Their goal was to determine how library directors feel about AI's possible effects on academic libraries and how that might affect their work. The research focused on how librarians' perceptions of AI influenced their interactions with students, the methods they employed for IL instruction using AI, and their approach to advocating for and integrating AI within the library (Cox et al., 2019). The advantages involve automated content discovery and the potential utilization of algorithms to scrutinize extensive content collections for intricate patterns and details that would be challenging for a human reader to uncover (Cox et al., 2019). Despite the potential of AI to enhance academic learning, the researchers assert that libraries must address potential biases in the systems and define appropriate uses within educational institutions because of concerns about the difficulties surrounding its implementation, including protecting student privacy (Cox et al., 2019).

In 2020, Wheatley and Hervieux completed an environmental scan of current AI use in academic libraries, and they found that there were almost no AI-focused projects or collaborations in university libraries and that AI needed to be more present in the academic

library setting. In 2021, Asemi, Ko, and Nowkarizi categorized research articles that discussed robots, AI, expert systems, and the roles that librarians play in different AI-related tasks. Their literature review aimed to identify the library activities that AI could help with in place of requiring the assistance of librarians. According to the review, information-seeking behaviors and information literacy that could be associated with AI include developing software programming to meet library needs, helping patrons find information that answers their questions, evaluating information once it has been found, and other digital literacy-related topics (Asemi et al., 2021). This article concludes that sophisticated library solutions could be utilized alone or in tandem with librarians to complete more difficult jobs. In 2021, Yoon, Andrews, and Ward surveyed public and academic librarians and found that "a total of 21% of librarians responding reported that they are currently using AI and related technologies, with academic librarians (25%) reporting higher usage than public librarians (17%)" (p. 1899). Furthermore, they reported that eighty percent of respondents believed there was a good chance AI, and related technologies would be used in libraries in the next thirty years (Yoon, Andrews, & Ward, 2022). When reflecting on AI in libraries, Hussain (2023) explains that while implementing AI will facilitate library operations and make libraries essential conduits for cutting-edge technologies, the success of this initiative will depend on librarian advocacy programs and a well-crafted policy that tackles both the advantages and disadvantages of AI in library services.

In a 2023 paper, researchers investigated how AI could be used in libraries. They used PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to do an SLR (systematic literature review), which the authors then analyzed (Harisanty, Nove, Tesa, Aji, & Nurul Aida, 2023). The authors analyzed several areas related to the adoption of AI in libraries, including the benefits and impact of chatbots, the potential uses of smart technologies in libraries, and the possible advantages of incorporating robots into library services (Harisanty et al., 2023). Harisanty et al. (2023) used the Diffusion of Innovation method to look at how quickly participating libraries have adopted AI and how widely these technologies

are used in libraries. The authors explain in their discussion that libraries need to be faster to adopt AI, even though it has been a buzzword in the field for over a decade (Harisanty et al., 2023). There are many reasons for this hesitance, most of which center on librarians' lack of training in deploying the various technologies that are part of the "AI" designation and on the costs associated with programming the types of AI that could have the highest impact on libraries (Harisanty et al., 2023). The researchers also note that there is a fear of AI replacing humans; many librarians express a fear of losing their jobs and their significance within the organization once they have programmed AI and established these systems to provide services to library users (Harisanty et al., 2023). This article concludes by suggesting that AI within libraries has not yet reached the "confirmation" stage of Diffusion of Innovation (Harisanty et al., 2023). The confirmation stage, the final stage in the model, follows "implementation," the stage at which most libraries are currently positioned, and it is not clear how long it will take for them to get there (Harisanty et al., 2023).

While there was much excitement about the potential benefits of AI for libraries and their users, there were equal measures of caution in the readings due to known issues related to generative AI. The core concerns lie in the black-box nature of genAI, the reliability and potential bias within its data sources, and the absence of clear information regarding the origin and credibility of the content it produces (Frederick, 2023). Some educators have suggested using LLMs as reference sources, but this might be considered unethical as the original creators of the data that the application was trained on are unknown and therefore cannot be given credit (Frederick, 2023). Similar controversy arose concerning Wikipedia's information reliability due to its open access authorship and unverified articles. As AI develops and our understanding of it grows, we will need to grapple with the perception, authenticity, and accuracy issues addressed in these readings.

Generative AI, ChatGPT, and Information Literacy

As genAI gained broader recognition and usage, academic libraries turned their attention to how applications could benefit students and information literacy (IL). The ACRL's (2015) Framework for Information Literacy for Higher Education defines information literacy as a set of skills that work together to help us learn how to critically acquire new information, understand how information is made, use what we know to make new knowledge, and ethically participate in learning communities. Within this framework, the crucial notion of threshold concepts is introduced. These concepts are foundational to a discipline or knowledge domain, and when grasped by the learner, threshold concepts unlock new perspectives and deepen understanding, transforming the learner's comprehension of the subject matter (ACRL, 2015). So how can genAI be used to support these behaviors? Early proponents of AI integration thought it might provide chances to enhance students' information literacy, which would enhance IL instruction (Heck, Weisel, & Kullmann, 2019). ChatGPT could serve many purposes in academic research, including literature review assistance, text generation, data analysis, language translation, automated summarization, and question answering (Lund & Wang, 2023). Researchers Cox and Tzoc predicted a myriad of uses for ChatGPT in academic libraries for information literacy and digital literacy and advocated that the teaching of critical thinking skills will become paramount to the appropriate use of genAI tools (2023). Aptly, they suggest that libraries can leverage the disruptive aspect of generative chat tools by embracing their usage, evaluating their functionality, and beginning to develop services to support their use (Cox & Tzoc, 2023). The emergence of advanced generative text and image AI technologies consequentially reinforces the need for information and digital literacy skills. According to Cox and Tzoc (2023), librarians must increasingly prioritize fostering students' ability to critically evaluate AI-generated content because of the continuous advancements in these technologies. This includes determining whether a painting attributed to an artist is indeed their original work or an art piece created by artificial intelligence in a similar style, fact-checking information, and evaluating the credibility of responses provided by ChatGPT. Although distinguishing between a

student's work and AI-generated content can be challenging, equipping instructors and students with information literacy skills will enable them to make more informed assumptions through a critical evaluation of the material (Cox & Tzoc, 2023). While generative AI has the potential to reinforce libraries as dynamic knowledge discovery centers, balancing technology improvements with traditional librarian competence will be crucial for the future of reference and instruction services (Adetayo & Oyeniyi, 2023). GenAI can provide a dynamic and responsive experience by engaging users with natural language while navigating the complexity of finding and evaluating information. However, libraries must put in place strong data protection measures, temper biases, and actively monitor AI-generated content to ensure the integrity of the information they provide (Adetayo & Oyeniyi, 2023). According to researchers James and Filgo (2023), genAI can be leveraged in IL instruction to instruct students to "recognize that bias is everywhere and ChatGPT is getting information that exists out on the open web" (p. 335). The authors also note that genAI can aid in "generating ways to break complex problems down" and even facilitate "growing in their information literacy abilities" by helping to "scaffold their skills, enabling them to accomplish this task more confidently in the future" (James & Filgo, 2023, p. 339). The authors emphasize the need for collaboration with faculty partners and that instruction on AI tools' should highlight their development, ethics, and potential benefits. James and Filgoy contend that using the lens of the ACRL Framework for Information Literacy for Higher Education coupled with GenAI tools can encourage librarians to explore new teaching methods, tools, and methods to aid students in a better understanding of information (2023). ChatGPT can help with research, source analysis, and reference citations during IL instruction. By "embracing ChatGPT, librarians empower students to become active and informed learners," which can "foster curiosity, critical thinking, and teamwork" (Russell, 2023). Houston and Corrado state the obvious when they conclude that "instructors who simply ban students from using AI are likely fighting a losing battle" (2023, p. 85). Instead, they urge a collaboration between educators, students, and librarians to encourage information literacy and digital

literacy, which they urge is "needed increasingly in students' lives" (Houston & Corrado, 2023, p. 85). They argue that educators who "adapt their pedagogy to the implications of this AI" or who "choose to lean into its uses" can improve learning outcomes for their students while also illustrating how to interact with AI responsibly and strategically (Houston & Corrado, 2023, p. 85). Lo and Vitale surveyed 19 Association of Research Libraries member libraries. They found that AI was used in conjunction with information literacy skill building by identifying misinformation, encouraging critical thinking skills, and evaluating AI-generated content (2023). According to survey results, libraries could improve their IL initiatives by working with interdisciplinary partners, integrating AI literacy into broader information literacy, and assisting users in understanding and assessing AI-generated content (Lo & Vitale, 2023). Libraries can play a prominent role as research institutions in navigating the AI era. They can showcase the expertise of librarians in this field, develop new skills related to AI, provide staff training, and organize workshops on these topics.

Balancing Challenges and Benefits of Generative AI

When studying the literature on generative AI, one encounters a variety of perspectives and ideas about the importance of striking a balance between the benefits and challenges of using AI in education. According to Oyelude (2023), ChatGPT has been inappropriately utilized in academic settings for purposes such as cheating on exams, composing term papers and assignments, generating phishing emails, and fabricating scientific materials. ChatGPT can be advantageous in libraries for multiple purposes, including search and exploration, reference assistance, writing tasks, and instruction on IL and digital skills (Oyelude, 2023). GenAI can facilitate the generation of ideas, streamline various aspects of the research process, and provide answers to inquiries. Researchers Dai, Liu, and Lim (2023) recommend that students critically assess ChatGPT outputs using their knowledge, expertise, and judgment. The authors urge that "epistemic agency," or the ability to "actively engage in knowledge construction, inquiry, and learning," is crucial for students to avoid biases in AI-generated content (Dai et al.,

2023, p. 88). Dai, Liu, and Lim also stress the need for "adaptability and continuous learning" as essential skills for students as the "AI landscape is rapidly evolving and advancing" (2023, p. 88). Researchers Subaveerapandiyan, Vinoth, and Tiwary (2023) determined that AI-based models may "require significant human editing to produce high-quality text, and it is the responsibility of the researcher to ensure accuracy, coherence, and relevance" (p. 13). According to Chan (2023), providing support and education on AI literacy to teachers, staff, and students is needed to augment educator proficiency and confidence through appropriate training. In the next stages of generative AI adoption in education (Chan, 2023), it will be important to teach students how to use AI technologies, evaluate their use, and talk to people about ethics, the limits, applications, and affordances of AI, as well as how to evaluate its results. To give students the tools they need to use AI technology honestly and ethically, they need to improve their critical thinking, digital literacy, information literacy, and professional ethics (Chan, 2023).

In their SWOT analysis of ChatGPT, Farrokhnia, Banihashem, Noroozi, and Wals explore the contentious nature of this "AI tool that has sparked debates about its potential implications for education" (2023, p. 2). Notable strengths of ChatGPT's mentioned by the authors include its ability to harness natural language processing capabilities, craft plausible responses, and refine itself over time (Farrokhnia et al., 2023). By providing personalized, real-time responses, the authors indicate that ChatGPT will make information more accessible to support complex and individualized learning and effectively reduce the workload associated with teaching (Farrokhnia et al., 2023). However, they also point to its weaknesses, such as a limited capacity for deep understanding and challenges in evaluating the quality of its responses, potential biases and discrimination, and a lack of higher-order thinking skills (Farrokhnia et al., 2023). The threats mentioned by Farrokhnia et al. (2023) encompass a limited comprehension of the situation, jeopardizing academic honesty, reinforcing inequality in education, promoting widespread plagiarism, and diminishing the ability to think critically.

Based on the literature cited above, most current research on libraries focuses on genAI in general rather than specifically on a tool like ChatGPT. The scarcity of available literature on the application of ChatGPT in libraries is likely attributed to its status as an emerging technology. What is apparent from the current literature is that genAI tools will likely continue to impact library professionals and their workflows. The literature suggests that while ChatGPT has practical applications, its use must acknowledge implicit ethical and practical concerns. The data sets used to train ChatGPT lack transparency, making it challenging to ascertain the potential misinformation, inaccuracies, or biases reflected in its content (Price, 2023). To optimize the impact of genAI, as highlighted in the readings, it will be necessary to navigate the potential benefits while simultaneously confronting inherent challenges. This study aims to explore critical inquiries that have yet to be investigated in the existing literature, including the attitudes of library professionals engaged in IL instruction toward ChatGPT, their current and planned uses of this tool in IL instruction, and how issues associated with it affect their perception of its usefulness.

Methodology

Theoretical Model

The application of the Technology Acceptance Model (TAM) offers a structured framework for investigating the dynamics of librarian engagement with Chat GPT in the context of developing and delivering information literacy instruction. "Perceived usefulness" and "perceived ease of use" are factors that affect people's acceptance and use of technology, according to TAM, which has roots in the fields of psychology and information systems (Davis, 1989). In IL instruction, librarians serve as intermediaries between users and technological tools like Chat GPT, aiming to enhance information-seeking skills. Examining how librarians perceive the utility and ease of integration of Chat GPT into their instructional practices can shed light on the factors shaping their adoption behaviors. Factors such as perceived efficacy in addressing user inquiries, ease of incorporating Chat GPT into existing pedagogical methods, and

confidence in leveraging its capabilities could significantly influence librarians' willingness to engage with this technology. Moreover, exploring the potential barriers, such as concerns regarding accuracy, privacy, or technological proficiency, can offer insight into the complexities of integrating AI-driven tools into information literacy programs. Applying TAM to the study of librarian engagement with Chat GPT elucidates the interplay between technological attributes and individual perceptions, thus contributing to an understanding of the adoption dynamics.

Instrument Development

The instrument (Appendix A) was developed with two main sources of information: TAM items from previous studies (Granić & Marangunić, 2019) and the emerging literature on how ChatGPT was being considered for use in educational settings through the summer of 2023, with an emphasis on library skills and information literacy. Based on prior iterations of TAM as applied to instructional technology, the research team created and revised items collaboratively with the technology in question, namely ChatGPT. In this case, the constructs include ease of use, usefulness, attitude toward use, and behavioral intention to use. An example item regarding the usefulness construct reads, "Use of ChatGPT will improve academic productivity." The five-point scale for all items sought levels of agreement from "Strongly Disagree" to "Strongly Agree." TAM items indicated attitudes, whether an individual engaged with the tool or not and so a 'not applicable' type of selection was not offered. Content validity relied on the expertise of the research team, which practices and studies within the field of instructional librarianship. Additional items regarding current and potential usage were drawn from the literature available at the time (James & Filgo, 2023). Participant information about what type of setting they worked in, the age or stage of their patrons/students, and educational attainment was collected as well.

Data Collection

IRB offices at Florida International and Virginia Commonwealth Universities jointly approved the survey before data collection. A purposive sampling approach was used that

required an affirmation that individuals engaged in information literacy instruction. Beyond these criteria, participants could be working in a variety of settings, including school, public, or academic libraries (Appendix B). The ALA platform, Connect, was used to solicit participation and follow-up email communications. Direct outreach to state-level associations was also utilized to broaden participation. Results came from surveys completed from June 29 through September 28, 2023.
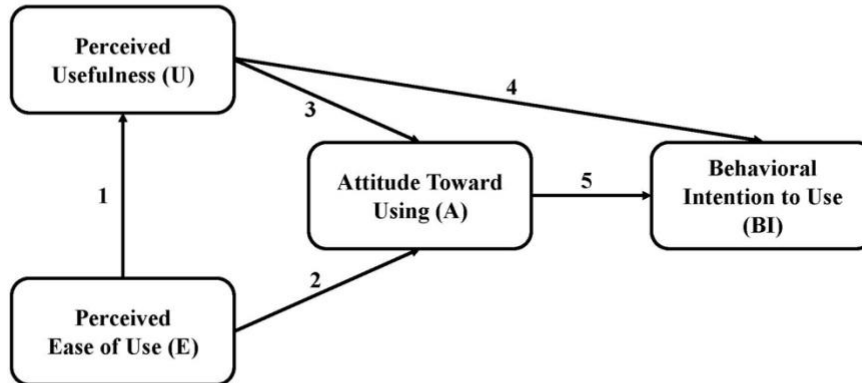
Analysis

Descriptive statistics and tests for reliability were first conducted in SPSS. Composite scores were developed for TAM constructs using SPSS, and then a Chi-square test was utilized to determine model fitness using Amos, in this case, whether the TAM model matched the expected distribution as outlined in Figure 1. The strength of the effects between variables in the model could then be examined based on factor loadings that do not represent causality but relationships. The expectation is that these variables will demonstrate positive relationships, and the following hypothetical relationships could be evaluated.

1. Perceived ease of use (E) positively affects perceived usefulness (U).

2. Perceived ease of use (E) positively affects attitude toward using (A).

3. Perceived usefulness (U) positively affects attitude toward using (A).

4. Perceived usefulness (U) positively affects behavioral intention to use (BI).

5. Attitude toward using (A) positively affects behavioral intention to use (BI).

Figure 1

TAM Model

After completing the statistical analysis, a review of questions about how ChatGPT was being used, along with an open-ended question about other applications of the technology, was conducted to support interpretation.

Limitations

A Chi-square test assumes independent observations, but within the context of TAM, the responses of individuals who share a profession may be correlated, violating that assumption. The Chi-square test also assumes linear relationships between variables. If the relationships between the TAM variables are non-linear or complex, it may not accurately capture the nature of these relationships. The depth and quantity of the open-ended question results were assumed not to be sufficient for a mixed methods approach but were leveraged in interpreting the statistical results.

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Results

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Participants

Data was collected via an online form directed to library professionals via the American Library Association's Connect platform and email inquiries that stemmed from those

communications. The intent was to find respondents from many different types of libraries; however, the overwhelming majority of participants came from academic libraries (86%). Those from public libraries (7%), school libraries (5%), and other settings (2%) are also included. Respondents had a wide range of years in the profession, ranging from 0-2 (14%), 3-5 (16%), 6-10 (26%), 11-15 (19%), 16-20 (10%), and over 20 years (15%). The age ranges of respondents tracked similarly to those of the library workforce overall (Bureau of Labor Statistics, 2024). From 205 responses, 154 were complete and met the criteria for inclusion in the TAM analysis, and 58 participants also contributed to open-ended questions. This sample size exceeded the needed responses for each TAM construct and the proposed methods. The nature of the open-ended question was to uncover other uses from the participants and was not developed for and thus insufficient for any qualitative analysis, and they were reviewed primarily to capture additional information that respondents wished to share on the topic that might aid interpretation of the survey results.

Model Fitness and TAM Constructs

With one degree of freedom and a probability level of .636, this model would be rejected if the Chi-square was less than .75 but greater than .5. The Chi-square was calculated at .225 so the model did not fit. With a lack of model fitness, we examined the factor loadings that contributed to this circumstance in terms of hypothetical relationships between the TAM constructs, although these results are simply descriptive considering the overall lack of model fitness. The following table reports the results related to the hypotheses, with factor loadings greater than .5 indicating a potential positive relationship (indicated in bold type).

Table 1

Factor loadings between TAM constructs

TAM Constructs	Standardized Weight	Estimate	Error
E to U	**.548**	.609	.075
E to A	.068	.081	.075
U to A	**.714**	.760	.068
U to BI	.205	.248	.080
A to BI	**.675**	.767	.075

We turned to more granular items that led to the composite scores shifting to a more descriptive approach for our analysis. First, Table 2 shows the means and standard deviations for each TAM variable, then figures containing results from items for related TAM constructs utilizing the same agreement scale across items are presented.

Table 2

Descriptive Statistics for TAM items

TAM Variable	Mean	Standard Deviation
1.1	4.1494	.81475
1.2	3.5909	.98095
1.3	3.3831	1.20021
2.1	3.4416	.97006
2.2	3.0325	1.01890
2.3	3.8506	.96868

TAM Variable	Mean	Standard Deviation
3.1	3.4286	1.14251
3.2	3.7078	.97636
3.3	3.2143	1.10237
4.1	3.7792	1.06179
4.2	3.7013	1.31423
4.3	4.0909	1.11651

Figure 2
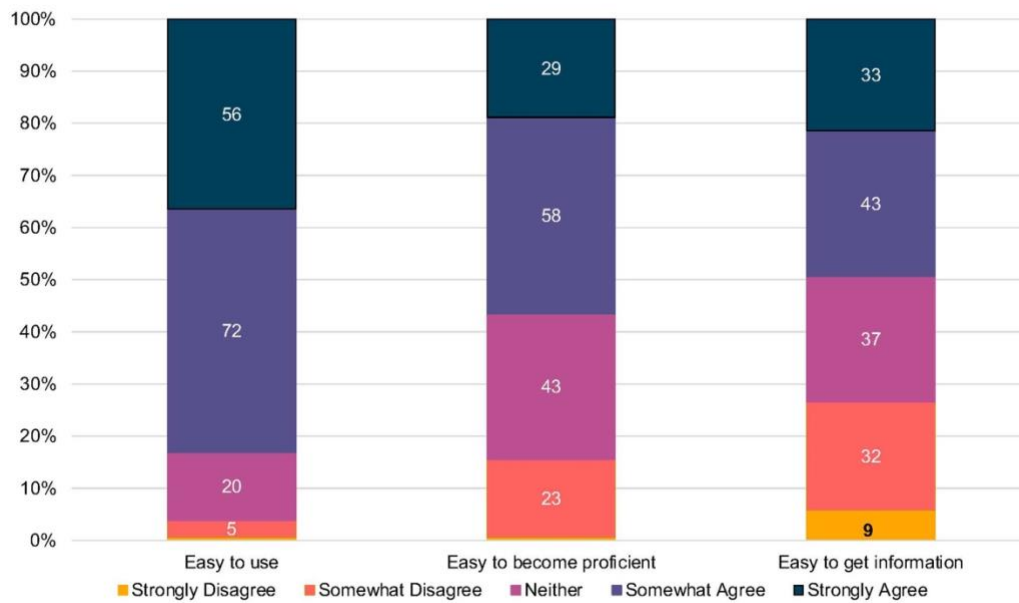
Agreement on Ease of Use Items
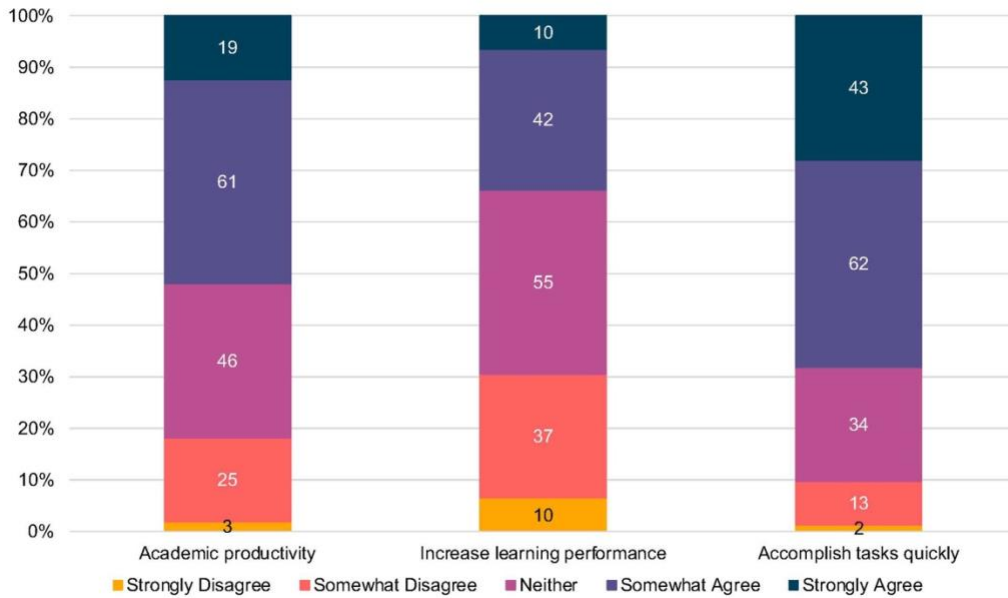

Figure 3

Agreement on Usefulness Items

Figure 4
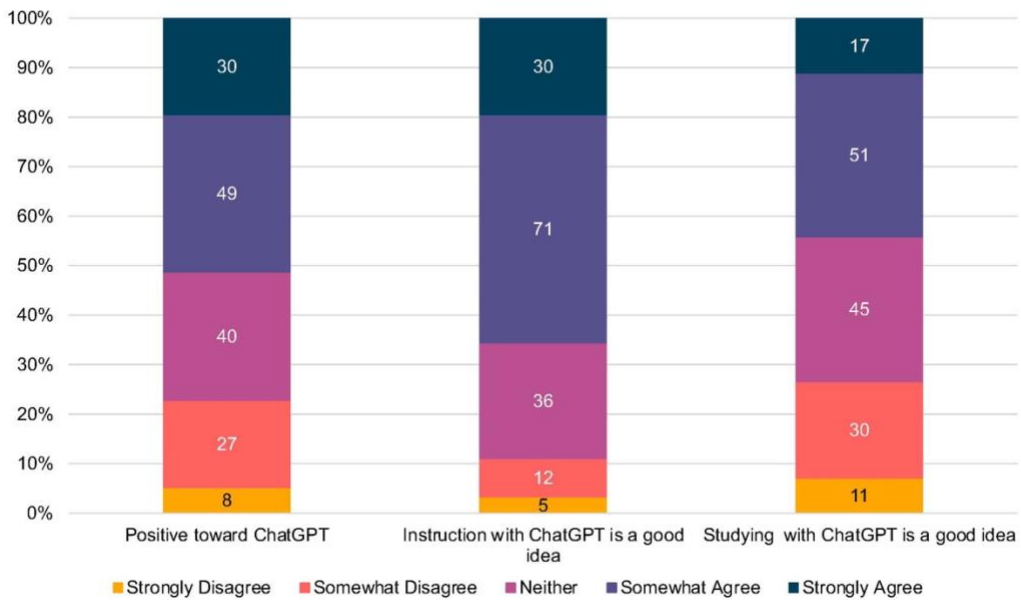
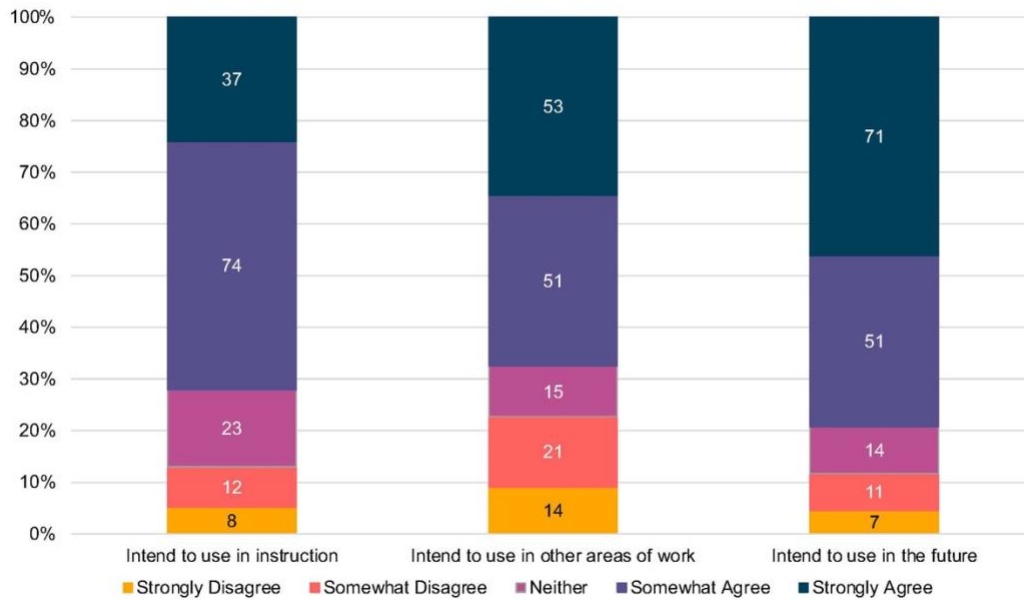*Agreement on Attitudes About Use*

Figure 5

*Agreement on Behavioral Intention to Use Items*

Current Use and Potential Use

A series of use scenarios that were gleaned from the emerging literature through May 2023 were presented, along with a scale of how often or likely participants were to use ChatGPT as described at present and in the future. For current use, the scale ran from "Never" to "Always," and the scale is illustrated in Figure 6, where "Never" is darker in color and the color saturation brightens, respectively. For anticipated or future use, the scale is similarly represented, though it ranges from "Very Unlikely" to "Very Likely." These items are simply reported by frequency tables that show current uses in Figure 6 and potential uses in Figure 7.

Figure 6

Reported Current Uses
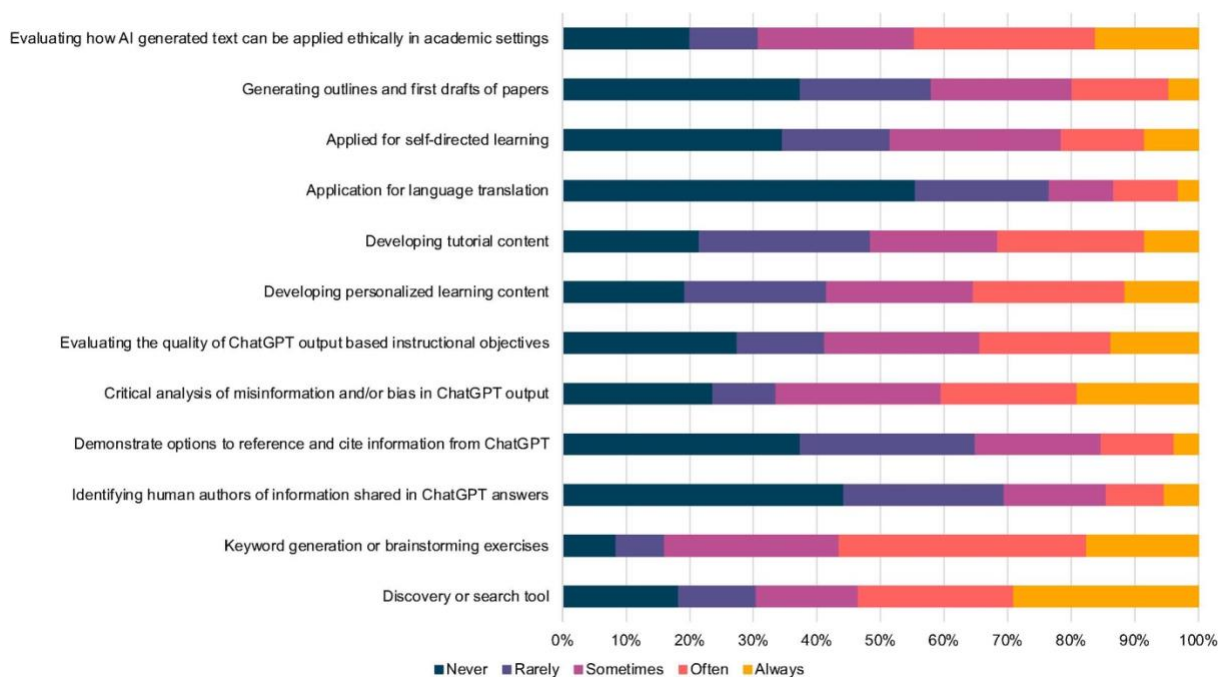
The responses indicate a varied use of ChatGPT in information literacy instruction. Some participants who provided answers to our single open-ended question about other uses have utilized ChatGPT for generating "Lorem Ipsum" text or examples during library tool demonstrations, and others have integrated it into LibGuides and professional education for library colleagues. Participants have explored the ethical aspects of AI, discussing copyrightable material, discerning authority in online sources, and addressing biases in research. Several respondents have engaged students in prompting ChatGPT for desired results, teaching them how to revise and cite the generated content to avoid plagiarism. Others have used ChatGPT for brainstorming research questions, creating outlines, writing assistance, and paraphrasing. Some have focused on the limitations of ChatGPT, cautioning against over-reliance and emphasizing the need for critical thinking in evaluating its output. One respondent noted that while using ChatGPT during library sessions, there were particular challenges with consistency in the generated content. Participants have incorporated ChatGPT into lesson planning, creating summaries of research articles, and even generating code for information literacy tutorials. The platform has been used to identify biases in research, address diversity, equity, and inclusion

(DEI) issues related to algorithmic bias and discuss the impact of AI on future careers. Additionally, there are efforts to create resources, guides, and tutorials on interrogating ChatGPT for ethical considerations. Despite varied opinions on ChatGPT's suitability for certain tasks, there is a common theme of incorporating critical thinking, skepticism, and evaluation skills into information literacy instruction. Some participants are in the early stages of incorporating ChatGPT into their courses, while others actively discourage its use and advocate for careful consideration of its limitations.

Figure 7

Likelihood of Future Use
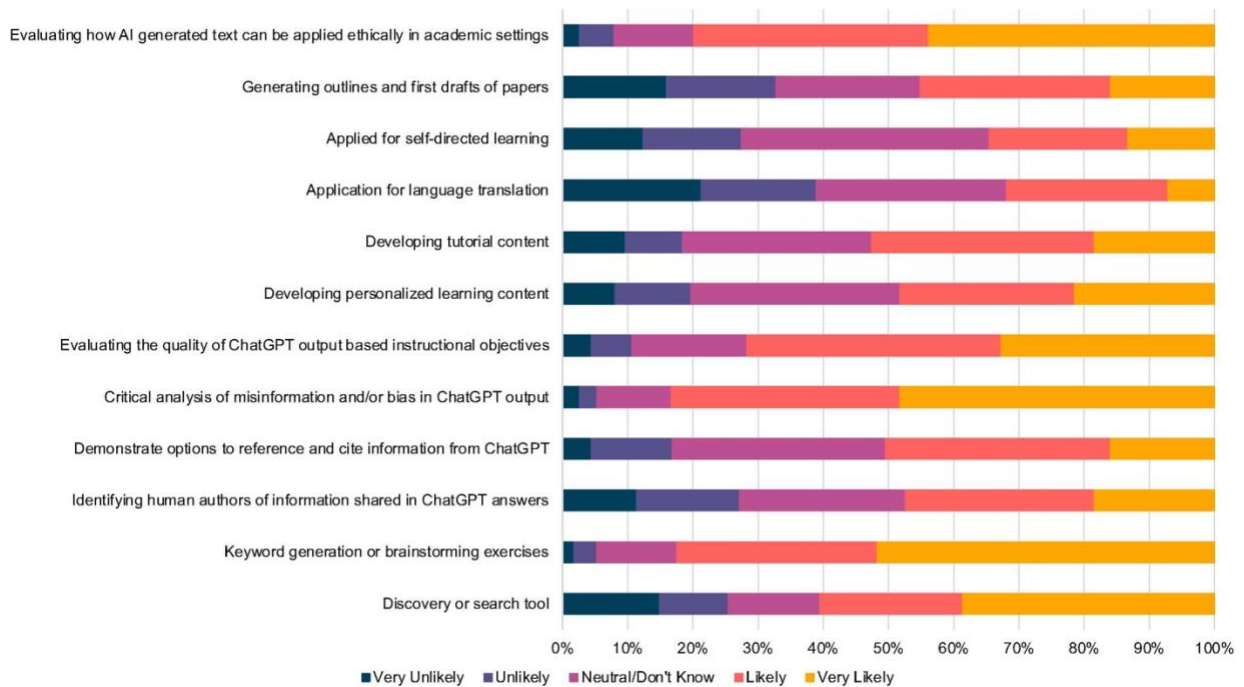
Discussion

The lack of model fitness with TAM highlights the particular disruption this technology causes for those teaching information literacy. While the majority of the participants found the tool easy to use, there were conflicting opinions on its usefulness, and this was underscored in several comments collected. Many were interested in the possibilities for developing engaging content, while others cautioned that it was an untrustworthy and unreliable tool. Further, even

when participants saw the tool as useful, this did not consistently influence their behavioral intention to use it. Based on this scenario, a reasonable possibility is that other factors are motivating engagement with this tool. One clear motivation could be related to the pervasive usage of ChatGPT by students, faculty, and the wider networked world. For many library professionals in this study, engaging with ChatGPT is not so much about acceptance of the tool, as grudging acceptance of a rapid and pervasive change in the information landscape. The findings underscore the multifaceted nature of perceptions and behaviors toward ChatGPT in instructional settings. The diversity of perspectives highlights the need for ongoing dialogue and professional development to support the effective and ethical integration of genAI tools in library instruction.

The study also emphasizes the nascent evolution of participants' strategies to incorporate ChatGPT into information literacy instruction and related tasks. The tool was noted as useful in simple tasks like generating placeholder text to more complex discussions on AI ethics and addressing bias in the research process. Based on participants' input at the time of the study, the most regular engagement with the tool included using it as a discovery or search tool, evaluating how AI-generated text can be applied ethically in academic settings, critical analysis of misinformation and/or bias in ChatGPT output, and evaluating the quality of ChatGPT output based instructional objectives. It is intriguing that, despite the many cautions about the reliability of output, the most widely used function was as a search or discovery tool. It is also at odds with the main function of the tool, which is to generate unique yet predictive text, not necessarily to locate information or resources. Do information professionals imagine that there will be a shift from the search approach to a dialectical approach with generative chat in information-seeking behavior?

Conclusions

This study created a snapshot of the perceptions and utilization of ChatGPT amongst library professionals during its tumultuous initial year of being accessible to the general public.

Despite a lack of model fitness, the analysis revealed insights into the complex interplay of factors influencing the attitudes and adoption of AI tools in educational settings. As ChatGPT and similar technologies reach further into many aspects of content development and the research process, librarians are poised to develop and design resources both with and about genAI. As academic librarians critically evaluate the role it may play in informational literacy instruction, an emerging area of research will support those developing instructional content on the topic. Existing information literacy frameworks or fresh ideas for assessing information that is primarily machine-generated rather than human-generated may inform future research on this subject.

By fostering collaboration and sharing of teaching methods, instructional librarians can leverage the potential of tools like ChatGPT to enhance information literacy instruction while upholding principles of critical thinking, skepticism, and ethical practice. Using genAI in IL applications holds great promise for library professionals to reinforce an AI literacy framework that includes the evaluation of nontraditional sources, problem-solving research inquiries, and AI safety awareness. More research is needed that evaluates existing methods of information evaluation against the output of genAI (Blechinger, 2023). A robust examination of prompt engineering techniques will allow us to refine this guidance and develop a deeper working knowledge of LLM systems in general (Lo, 2023). The convergence of these advised practices may lead to an AI literacy framework that can both empower students and support pedagogical strategies.

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Appendix A. ChatGPT and Information Literacy

Informed Consent

Introduction
Melissa Del Castillo, Florida International University, and Hope Kelly, Virginia Commonwealth University, are conducting a research project on attitudes and applications of ChatGPT in information literacy instruction. You are invited to participate in a research study to better understand how library professionals use ChatGPT in information literacy instruction and their attitudes toward its use. Before you begin the survey, please read this Informed Consent Form carefully.

Purpose of the Study
The purpose of this study is to evaluate the current AI literacy levels of academic librarians and identify areas where further training and development may be needed. The findings will help inform the design of targeted professional development programs and contribute to the understanding of AI literacy in the library profession.

You are being asked to participate based on the following inclusion and exclusion criteria:
Inclusion criteria:
- Currently engaged in teaching information literacy in a library setting.
- Willing and able to provide informed consent for participation in the study.

The exclusion criteria are as follows:
- Library employees without work duties related to information literacy
- Individuals who are not currently library employees or who are not engaged in instructional activities.

Procedures
If you agree to participate in this study, you will be asked to complete an online survey that will take approximately 15-20 minutes.

Potential Risks and Discomforts
There are no known risks or discomforts associated with participating in this study. You are free to skip any questions you do not want to answer. While there are no direct benefits to you for participating in this study, your responses will help contribute to a better understanding of how library professionals use ChatGPT in conjunction with information literacy and will inform the development of relevant professional resources.

Confidentiality
Your responses will be anonymous, and no personally identifiable information will be collected. Data will be stored securely on password-protected devices or encrypted cloud storage services, with access limited to the research team. The results of this study will be reported in aggregate form, and no individual responses will be identifiable. The variables that will be collected relate to the attitudes of library professionals toward generative AI. No personally identifiable data will be collected. Your information collected for this project will not be used or shared for future research, even if we remove identifiable information like your name.

Voluntary Participation and Withdrawal
Your participation in this study is voluntary, and you may choose to withdraw at any time without any consequences.

Contact Information
If you have any questions or concerns about this study, please contact either of the principal investigators, Melissa Del Castillo at medelcas@fiu.edu or Hope Kelly at kellyh3@vcu.edu. If you have questions regarding your rights as a research participant, or about what you should do in case of any harm to you, or if you want to obtain information or offer input, please contact Florida International University's Office of Research Integrity (ORI) at (305) 348-2494 or research@fiu.edu.

Consent
By clicking "Agree to participate" below, you acknowledge that you have read and understood the information provided above, had an opportunity to ask questions, and voluntarily agree to participate. You may print a copy of this consent form for your records.

Purposive Filtering

This survey is intended to learn from library professionals with instructional responsibilities; is teaching information literacy a component of your regular work duties?
- Yes - Survey Continues
- No - Thank you for your interest. (Survey Closed)

TAM-Based items
- Scale: 5-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (5)

Perceived ease of use of ChatGPT
1.1 ChatGPT is easy to use.
1.2 It is easy to become proficient at using ChatGPT.
1.3 It is easy to access information using ChatGPT.

Perceived usefulness of ChatGPT
2.1 Use of ChatGPT will improve academic productivity.
2.2 Use of ChatGPT will increase learning performance.
2.3 Use of ChatGPT allows one to accomplish tasks more quickly.

Attitudes towards ChatGPT
3.1 I am positive towards ChatGPT.
3.2 Instruction with ChatGPT is a good idea.
3.3 Studying with ChatGPT is a good idea.

Intention to use ChatGPT
4.1 I intend to use ChatGPT in my instruction.
4.2 I intend to use ChatGPT in other areas of my professional work.
4.3 I intend to use ChatGPT in the future.

Practical Application Items

Please rate your current use of the listed instructional applications.
- Scale for Actual use: 5-point Likert scale - Never, Rarely, Sometimes, Often, Always

Please rate your likelihood of using the listed instructional applications.
Scale 2 for Intended/potential use: 5-point Likert scale - Extremely Unlikely, Unlikely, Neutral/Don't know, Likely, Extremely Likely

Instructional Application Items
(tense for current/actual use)
- Discovery or search tool
- Keyword generation or brainstorming exercises
- Identifying human authors of information shared in ChatGPT answers
- Demonstrate options to reference and cite information from ChatGPT
- Critical analysis of misinformation and/or bias in Chat GPT output
- Evaluating the quality of Chat GPT output based instructional objectives
- Developing personalized learning content
- Developing tutorial content
- Application for language translation
- Applied for self-directed learning
- Generating outlines and first drafts of papers
- Evaluates how AI generated text can be applied ethically in academic settings

Other Uses
Tell us other ways you have leveraged Chat GPT for information literacy instruction.
- Optional, open-ended answers

Demographics & Library Context
- Select the option that best reflects your work setting.
- Public library
- K-12 school library/media center
- Academic library
- Other with text input

Personal Attributes

Age Ranges
- Standard, 18+

Degree attained
- Bachelors, masters, specialist, doctoral

How many years have you worked in library instruction?
- Less than 1 year
- 1 - 2 years
- 3 - 5 years
- 6 - 10 years
- 11 - 15 years
- 16 - 20 years
- Over 20 years

Job title
- Reference & Instruction
- School Library Media Specialist
- Academic Librarian (with varying ranks)
- etc (4-5 needed)
- Other (allow text input)

Teaching Context
- Please select the option that best align with your regular duties

Instructional Modality
- Face-to-face
- Online
- Blended (face-to-face and online)

Delivery (select all that apply)
- I teach information literacy in collaboration with teachers/professors of other subjects (embedded).
- I teach information literacy as part of library-based instruction (not in collaboration with others).
- I teach information literacy during consultations
- I teach information literacy during reference interactions

Audience (select all that apply)
- I teach elementary school students (grades K-5)
- I teach middle school students (grades 6-8)
- I teach high school students (grades 9-12)
- I teach undergraduate students
- I teach graduate students
- I teach adults or professionals

Appendix B. Recruitment - Listservs - ALA Connect

- American Association of School Librarians (AASL) Chapters Forum
- American Libraries Association (ALA) Members
- Association of College and Research Libraries (ACRL)
    - ACRL 21st Century Skills Discussion Group
    - ACRL Academic Library Services to Graduate Students Interest Group
    - ACRL Arts Section
    - ACRL CJCLS (Community and Junior College Libraries Section)
    - ACRL Contemplative Pedagogy Interest Group
    - ACRL Digital Badges Interest Group
    - ACRL Distance & Online Learning Section
    - ACRL Framework for Information Literacy for Higher Education
    - ACRL Instruction Section
    - ACRL Literatures in English Section
    - ACRL Members
    - ACRL Undergraduate Libraries Discussion Group
    - ACRL University Libraries Section
- Core: Leadership, Infrastructure, Futures Association
    - Core Artificial Intelligence and Machine Learning in Libraries Interest Group
    - Core Electronic Resources Interest Group
    - Core Instructional Technologies Interest Group
- Florida Association of College and Research Libraries (FACRL)
- Florida Association for Media in Education (FAME)
- Florida Libraries Association (FLA) Members
- Gen X Leadership and Networking
- Generative Artificial Intelligence, Reference, & Instruction Discussion Group (GAIR&I)
- Information Literacy Instruction in Academic Libraries
- Mindfulness and Contemplative Pedagogy in Libraries
- Progressive Librarians Guild (PLG)
- Radical Reference
- REFORMA
- RUSA (Reference and User Services Association)
    - Members
    - RUSA ETS (Emerging Technologies Section)
    - RUSA RSS (Reference Services Section)
    - RUSA RSS Research Help in Academic Libraries (RHAL) Discussion Group
- Virginia Association of School Librarians
- Virginia Library Association
- Virtual Reference & Emerging Technology eForum
- Young Adult Library Services Association (YALSA) YA Researchers