Proposal Pt. 2

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Library Science Program, Middle Tennessee State University

LIBS 6060: Understanding Research for Evaluation in Libraries

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Assessing AI Integration in Academic Libraries

The integration of Artificial Intelligence (AI) into academic libraries presents both opportunities and challenges that require systematic evaluation. The research questions have been refined to focus on user perception, institutional preparedness, and ethical considerations. The revised research questions guiding this study are as follows:

1. How do undergraduate and graduate students in library science perceive the effectiveness and reliability of AI-enhanced library services?
2. How prepared are academic libraries to integrate AI technologies, and what strategies are used to improve AI literacy?
3. Students and library staff will identify ethical concerns related to AI use, with analysis guided by established frameworks like data privacy standards and bias mitigation strategies, ensuring a thorough ethical evaluation.

The question related to AI literacy levels among staff was removed to maintain a clear focus on the broader institutional preparedness rather than the individual competency measurement. Additionally, the original question regarding long-term impacts was excluded due to this study's time constraints and the challenges of predicting impacts given the evolving nature of AI technologies. These revisions ensure that the research questions remain focused, measurable, and aligned with the proposed design.

This study uses a mixed-methods research design that combines quantitative surveys with qualitative semi-structured interviews to strengthen the validity of findings. Highlighting this combination can reassure the audience about the thoroughness of the approach. The mixed-methods approach is valuable when examining emerging technologies because it strengthens the validity of findings by integrating multiple data sources. Existing research on AI

in academic libraries has largely relied on descriptive and survey-based approaches, focusing on adoption trends rather than in-depth evaluation. Additionally, a mixed-methods approach incorporating primary data would have provided greater insights (Ayinde et al., 2026). By incorporating qualitative reviews, this study builds on prior research while addressing the lack of user-centered and experiential analysis. The primary method of data collection will be an online survey distributed to undergraduate and graduate students and academic library staff. Researchers can use surveys in library and information science research to measure perceptions and behaviors across a broad population. In relation to integrating AI into academic libraries, survey methods have been effectively used to assess literacy, usage, and professional experiences (Lo, 2024). This survey will include a combination of Likert-scale, multiple-choice, and limited open-ended questions. These questions will measure the frequency of AI use and the perceived reliability of tools, awareness of AI capabilities, and attitudes towards ethical concerns such as bias and data privacy. Likert-scale questions will allow for a quantity of subjective perceptions, making it possible to identify patterns and compare responses across participant groups. The method is appropriate for this study because it provides a structured, efficient way to collect data from a large sample, enabling the research to identify trends in how AI is perceived and used within academic libraries.

Additionally, to complement the survey data, semi-structured interviews will be conducted with a smaller subset of participants, particularly the academic library employees. Emphasizing staff experiences can make the audience feel their practical insights are crucial for a comprehensive understanding. The primary benefit of the semi-structured interview is that it allows for focused interviews while still giving the researcher the autonomy to explore pertinent ideas that may arise during the interview, thereby further enhancing understanding of the subject

of research and its assessment (Adeoye-Olatunde & Olenik, 2021). The semi-structured format ensures consistency across interviews while allowing flexibility for follow-up questions and exploring emerging information. Interview questions will focus on areas such as AI implementation, staff preparedness, training and support, and ethical considerations in practice. This method addresses a significant limitation in existing research, which emphasizes technological adoption without fully examining how AI is experienced by users and staff (Mabona et al., 2024). By incorporating qualitative data with quantitative data, the study enables the exploration of AI integration beyond existing measurable outcomes. To support this data collection, this study will use two instruments: a structured online survey and a semi-structured interview guide.

This study will also use a combination of convenience sampling and purposive sampling to recruit participants. Convenience sampling will be used to distribute the survey to students and library staff at a university, via accessible channels such as institutional email or course announcements. This approach allows for efficient data collection as well as for exploratory research on user perceptions. Purposive sampling will be used for the interview part to ensure that participants have relevant experience with AI tools in academic libraries. The reasons for adopting a purposive strategy are based on the assumption that, given the study's aims and objectives, specific groups of people may hold different and important views on the ideas and issues at stake and therefore need to be included (Campbell et al., 2020). So, this may include librarians involved in reference services, instruction, or the implementation of AI technologies. Selecting these particular participants with direct experience strengthens the relevance and depth of the qualitative data. The anticipated sample size is approximately 50 to 100 survey respondents and 6 to 10 interview participants. The selected methods are well aligned with the

research questions and overall goals of the study. While surveys are effective for capturing general trends in perception, use, and literacy, interviews provide the depth needed to explore institutional preparedness and ethical concern, which involves a more in-person context. Additionally, these methods reflect established practices in library and information research, where surveys and interviews are commonly used to examine emerging technologies and user experiences (Ayinde et al., 2026; Lo, 2024).

The methodological approach of this study is grounded in existing literature on AI in academic libraries. Systematic and bibliometric reviews consistently highlight the rapid expansion of AI-related research while noting the lack of empirical evaluation of user experience and long-term effectiveness (Ayinde et al, 2026). Survey-based research has been widely used to assess AI literacy and adoption, particularly among library professionals (Lo, 2024). However, many studies focus primarily on descriptive data and short-term outcomes, often overlooking the actual lived experiences of users and staff (Mabona et al, 2024). By integrating qualitative interviews, this study addresses these gaps and offers a more comprehensive perspective on AI integration. Additionally, the survey instruments are organized into different sections addressing demographics, AI usage, perceptions of effectiveness, and ethical concerns. The questions are designed to be clear and concise, using Likert scales to measure attitudes and multiple-choice items to assess usage patterns. The interview guide will include open-ended questions. Both instruments are included in Appendix A and Appendix B for reference. All participants will provide informed consent, and their responses will remain confidential. Identifying information will be removed to ensure the participants remain anonymous, and participation will be voluntary. Given the focus on AI and institutional practices, care will be taken to accurately

represent each participant's perspectives, particularly when discussing ethical concerns about AI integration.

In conclusion, this study provides a structured, methodological approach to examining the integration of AI in academic libraries, focusing on user perceptions, institutional preparedness, and ethical considerations. In response to gaps in the existing literature that emphasize the adoption of trends over user-centered evaluation, this research utilizes the understanding how AI technologies are experienced by both students and library science professionals. The use of a mixed-methods design strengthens the study by combining both quantitative and qualitative data. Additionally, the use of convenience and purposive sampling ensures feasibility while maintaining relevance to research questions. Ethical concerns remain crucial to the study and will reflect broader discussions within the field. Although the research is limited in scope and generalizability, it still contributes valuable insights into current practices and provides a foundation for future research that may explore larger populations or the long-term impacts of AI integration in academic libraries. Ultimately, the study highlights the important role of librarians and how they can navigate emerging technologies while maintaining their commitment to ethical, user-centered approaches to AI integration.

References

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Appendices

Appendix A: Survey Instrument (Preliminary)

This preliminary survey is designed to measure student and academic library staff perceptions of library services, including effectiveness, reliability, and ethical concerns.

1. What is your role?
    a. Undergraduate student
    b. Graduate student
    c. Library staff
    d. Other
2. How often do you use AI tools in your academic work?
    a. Never
    b. Rarely
    c. Sometimes
    d. Often
    e. Very Often
3. Which tools have you used in a library context? Select all that apply.
    a. Chatbots
    b. Discovery systems
    c. Generative AI
    d. Other

Respondents will indicate their level of agreement with the following statements:

4. AI-generated information from library tools is reliable
5. AI tools make it easier to find relevant academic resources

6. AI tools provided by the library help with my research experience
7. AI tools may introduce bias in my research results
8. I am concerned about data privacy when using AI tools provided by the library

Response options for these questions and statements:

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

Appendix B: Interview Guide (Preliminary)

The following interview guide is designed for academic library staff to explore experiences with AI technologies, institutional preparedness, and ethical considerations. The questions are as follows:

1. How has AI impacted your daily work or library services?
2. What AI tools do you currently use in your library?
3. What training or support has been provided regarding integrating AI into the library?
4. What challenges have you encountered when using AI tools?
5. What are some ethical concerns you have surrounding the integration of AI, or in your own experience?
6. How do you evaluate the effectiveness of AI tools in your library?