Pennsylvania Libraries: *Research & Practice*

Enhancing Information Literacy through Generative AI in the Library Classroom

Denise A. Wetzel and Justin Kani

Denise A. Wetzel is the Science & Engineering Librarian at Penn State University, dawetzel@psu.edu. Justin Kani is the Economics & Business Librarian at Weber State University, justinkani@weber.edu.

This article explores the integration of a generative AI chatbot into early undergraduate education to enhance information literacy. Leveraging the ACRL Framework for Information Literacy—specifically the "Scholarship as Conversation," "Research as Inquiry," and "Searching as Strategic Exploration" frames—the authors assert that AI tools that cite their sources can improve students' research skills while emphasizing critical reading and resource verification. Furthermore, AI-based scaffolding through prompts can bridge students' current knowledge within broader scholarly conversation, guiding them toward specific learning objectives. The paper reviews the impact of generative AI on higher education, reviews major AI tools, and proposes two adaptable classroom assignments. It concludes that effective use of AI in education can support success, prepare students for the complexities of modern research, and promote ethical information use.

Introduction

In 2022, the New York Times highlighted a paradigm shift in how students can approach research and writing—and cheating—when a professor found that a student's paper was written by a novel program called ChatGPT (Huang, 2023). While artificial intelligence has been in development for a while, often marketed to consumers as virtual personal assistants like Apple's Siri or Google Assistant (Hoy, 2018), it was the seamless advancement in generative artificial intelligence (AI) with chatbots like ChatGPT—with their ability to write and problem-solve like humans—that caught higher education by surprise (Chen et al., 2023). While higher education is grappling with this novel research platform, the authors argue that librarians are well positioned to teach students how to effectively and ethically use AI.

This article proposes that integrating AI into undergraduate research processes, when aligned with the Association of College & Research Libraries (ACRL) Framework for Information Literacy for Higher Education, can significantly enhance the scaffolded learning experience for students. Specifically, the Framework for "Scholarship as Conversation," supplemented by "Research as Inquiry" and "Searching as Strategic Exploration," can help students master the latest in research innovation, while reinforcing the importance of deep learning through reading and verification of resources (Association of College & Research Libraries [ACRL], 2016). The authors conclude with two example assignments designed for adaptation in the classroom. These assignments are specifically tailored to support

Pennsylvania Libraries: *Research & Practice*
Enhancing Information Literacy through Generative AI in the Library Classroom

palrap.org

students in the early stages of their undergraduate studies, focusing on the processes of identifying and understanding scholarly conversations and evaluation. One approach offers a more integrated experience, often found in close collaboration with English composition programs, combining composition skills with information literacy in a scaffolded format. The other example showcases a traditional, subject-specific session designed to deliver a focused learning experience. Through rich discussions, the authors share two meaningful examples of how AI can be incorporated into the library classroom, underscoring the flexibility and adaptability of AI tools in fostering student success across diverse instructional models.

Literature Review

Haman and Školnik's (2023) small experiment revealed limitations in ChatGPT's ability to identify seminal articles in medical literature. This raises an important question: if ChatGPT struggles with such tasks, how can students reliably determine what constitutes a seminal article, especially if they are unsure about the credibility of the information provided by AI? Further, the lack of attribution in ChatGPT is its tendency to generate false information, a phenomenon known as hallucination (IBM, 2003; Haman & Školník, 2023). This lack of attribution is particularly problematic in scholarly communication, where citing sources is vitally important in the practice of scholarship as conversation (ACRL, 2016).

By integrating these tools into the information literacy classroom, educators can provide personalized learning experiences and reinforce the importance of critically evaluating sources, ultimately improving students' information literacy and analytical skills. James and Filgo (2023) delve into ChatGPT's fit, highlighting its potential to enhance students' information literacy skills. Without ChatGPT's ability to link to citations, the authors concluded that it functioned as a good tool for idea generation, but students must develop their own academic voice and not overly rely on AI-generated content. Further, AI has the potential to enhance scaffolded instruction by providing real-time feedback and support while addressing individual student development (Kim & Kim, 2022). The authors acknowledge that while AI offers these capabilities to enhance scaffolded instruction, it is important to emphasize that it should complement, rather than replace, teacher expertise and human interaction in the learning process.

Scaffolding in first-year college classrooms is a pedagogical approach that provides structured support to help students transition from their current skill levels to achieving specific learning objectives (Miyaoka, Toolsidass, & Magee, 2023). This method is particularly effective in introducing students to the academic environment, where they often have their first encounters with the college library and begin developing crucial information literacy skills. Chatbots should provide scaffolded learning experiences, guiding users through skills and concepts step-by-step. Features that enable back-and-forth dialogue and allow users to ask questions are crucial for improving participation and retention of information. This allows students to move beyond initial impressions to a more in-depth understanding of their research (Reiser & Tabek, p. 45). To effectively teach the research process, librarians can frame assignments around a scaffolded framework that emphasizes "Scholarship as Conversation." This approach allows students to critically engage with existing scholarship, understanding that research is not just about building an argument but about contributing to an ongoing conversation. By fostering this mindset, students are encouraged to explore diverse perspectives, recognize nuances, and see how research evolves. This encourages students to move beyond finding sources to support a claim and instead view their work as part of an ongoing academic dialogue

The growing importance of AI literacy in education extends beyond just understanding how to use AI tools. As educators and librarians grapple with integrating these technologies, it's crucial to evaluate different AI chatbots and their potential applications in academic settings. The subsequent section delves into generative AI tools, highlighting their potential as valuable resources for early career undergraduate students. This analysis offers readers

Pennsylvania Libraries: *Research & Practice*
Enhancing Information Literacy through Generative AI in the Library Classroom

palrap.org

an overview of the top five generative AI chatbots, while acknowledging the dynamic nature of this field, where developers continually enhance and introduce new features.

Exploring Five Generative AI Chatbots

Selecting an appropriate AI chatbot for educational purposes can be a complex task, given the diverse array of options available and their varied applications. While ChatGPT has garnered significant attention in the realm of generative AI, it's crucial to consider whether it's the optimal choice for specific educational needs.

The first notable feature is the initial launch date across the five compared tools in Table 1 between August 2022 and December 2023. Essentially an eighteen-month span, this time may feel short in the calendar world but long in the technological world. Further, after the initial launch dates, these models have continued to evolve and update to include new features, new supervised data learning, and human feedback learning. As an example, Google had the largest shift in generative AI chatbots when it pivoted from its initial offering of Bard to Gemini.

A second notable category in Table 1 highlights if the chatbot lists sources in its answers to input prompts. This concept refers to the use of grounded or ungrounded large language models. Grounding in AI refers to the process of connecting abstract knowledge to concrete, verifiable information or real-world examples (Liu, 2023). It is crucial for improving the accuracy, reliability, and contextual relevance of AI-generated responses, particularly in large language models (LLMs). Some chatbots, like Microsoft's CoPilot and Perplexity AI, will include links to shared content. Other chatbots, such as Open AI's ChatGPT and Anthropic's Claude, generate responses but do not include specific links within their text. This can be confusing for students when there is no confirming information given and responses seem factual.

Table 1

A comparison of five popular generative AI chatbots for use in library instruction as of November 1, 2024. Information pulled from individual website descriptions.

Generative AI Chatbot	Developer(s)	Initial Launch Date	Grounded or Ungrounded	Sources Listed in Output	Sign-Up Required for Basic Queries	Individual Pricing
ChatGPT	Open AI	November 2022	Ungrounded	No	No	Free - $0 Plus - $20/month
Claude	Anthropic	March 2023	Ungrounded	No	Yes	Free - $0 Pro - $20/month billed annually
CoPilot	Microsoft	February 2023	Grounded	Yes	No	Free - $0 Pro - $20/month
Gemini	Google DeepMind	December 2023	Grounded	Sometimes	Yes	Free - $0 Advanced - $19.99/month
Perplexity AI	Aravind Srinivas, Denis Yarats, Johnny Ho, and Andy Konwinski	August 2022	Grounded	Yes	No	Free - $0 Professional - $20/month

Pennsylvania Libraries: *Research & Practice*
Enhancing Information Literacy through Generative AI in the Library Classroom

palrap.org

The third and final point is the inclusion of AI tool account sign-up requirements. Some chatbots can answer basic questions without requiring users to create an account. While an account is needed for more in-depth functionality across most tools, ChatGPT, CoPilot, and Perplexity AI do not require users to create an account. This feature increases library instruction adaptability since time is not needed in-class for students to register, verify, and log-in to an account to use a tool. Librarians also do not need to communicate with course instructors before class to organize student access. The ability to jump into a tool in the moment or as part of a planned instructional session benefits students as it allows more time for hands-on learning and/or demonstrations.

Additionally, the lack of registration steps alleviates some privacy concerns. For instance, it is unclear how collected personal information is being recorded, retained, and/or shared. When registering, users typically provide personal details such as name, email address, and sometimes more sensitive information like phone numbers and home addresses (National Telecommunications and Information Administration, 2023). This data can be stored and used by the AI developers for various purposes, including marketing and analytics. Further, many users do not read privacy policies before agreeing to them. These policies outline how personal data is collected, used, and shared. A significant number of people (56%) often agree to these policies without reading them, which can lead to an unawareness of how their personal data is being handled (McClain et al., 2023). Their data may then be shared with third parties, including advertisers and analytics companies, which can lead to further privacy invasions. While other privacy concerns in AI use abound, not needing to register for an account to practice using a tool allows a modest amount of protection.

In concluding this section, the authors agree with Bowen and Watson's (2024) concept of digital literacy—referred to as "AI literacy"—which involves knowing how to select the appropriate AI tool for specific tasks, create effective prompts, recognize the risks of AI-generated errors or "hallucinations," and understand the importance of iterative refinement. In assessing these tools, the authors independently chose Perplexity AI for first-year classroom integration. By incorporating this particular tool, students are exposed to both scholarly and high-quality resources found on the Internet. AI has largely centered on ChatGPT, but the future is bright for AI tools that provide citations.

Use in a Credit-Bearing Information Literacy Class

At Weber State University, one author currently teaches a credit-bearing information literacy course that is integral to students' graduation requirements. This one-credit course is offered as a standalone class or in conjunction with ENGL 2010, a key composition course. This course is particularly effective for teaching information literacy because it allows students to engage deeply with research concepts while exploring diverse subjects of their own interest with the goal of writing a 7–8-page research paper.

Unlike a single session, which focuses on negotiating the scope and outcomes of a single presentation, this one-credit course provides an in-depth exploration of information literacy. Students engage deeply with the ACRL Framework, reflecting on how information is relevant to work, everyday life, and most importantly, the research process in academia. They develop a metacognitive understanding that research is part of an ongoing scholarly dialogue rather than an isolated endeavor. As Table 2 shows, throughout the course, students learn to view research through several key perspectives. They see "Scholarship as a Conversation" where they contribute to and critique existing scholarly work (i.e. the annotated bibliography assignment), understanding that their own research builds upon and engages with the work of others. They gain skills in "Research as Inquiry" by formulating research questions, breaking down complex issues, and assessing and organizing information to draw informed conclusions. Lastly, using the "Searching as Strategic Exploration" framework, students learn to define their research scope, identify relevant sources, apply diverse search tools and techniques, and manage their search processes and results effectively (ACRL, 2016) This comprehensive approach helps students see how research connects with broader academic discussions and the ongoing development of knowledge.

Pennsylvania Libraries: *Research & Practice*
Enhancing Information Literacy through Generative AI in the Library Classroom

palrap.org

Table 2

An overview of the scaffolded research process that guides students from topic exploration to the completion of their final paper.

Assignment	Scaffolding
Research Topic Proposal	Introduces students to the research process and helps them narrow down their topic.
Inquiry Literature Review	Builds on the topic proposal by teaching students to critically evaluate and synthesize existing research. Students develop a foundation for their research project.
Perplexity AI Assignment	Gives students practical experience with an AI research tool, bridging the gap between initial research and more in-depth analysis. Going beyond looking for data that fits their narrative.
Annotated Bibliography	Helps students develop their research skills by organizing and summarizing sources. Builds on the Inquiry Literature Review and AI assignment by applying critical evaluation to a broader range of sources.
Major Research Paper	Synthesizes all the skills learned in previous assignments. Students apply their research, evaluation, and writing skills to create a comprehensive argument.

These methods are crucial for effectively navigating the vast amount of available information and ensuring its credibility. This approach is informed by the ACRL Framework, which emphasizes that research is an iterative process driven by inquiry. This Framework encourages seeking multiple perspectives, identifying gaps or weaknesses, and maintaining a critical and open stance throughout the research journey. In alignment with these principles, the assignment titled "Researching Your Topic with Perplexity" (see Appendix A) is designed to assist students in the early stages of developing their major papers.

At this juncture, students are exploring their chosen topics and gathering initial information. This assignment leverages Perplexity AI to help students either broaden or refine their focus based on their findings, embodying the iterative and inquiry-driven nature of effective research. While Perplexity AI can find academic and scholarly articles, for this assignment, one of its great benefits is that it replaces the Googling stage for novice researchers with more structured guidance. Typically, during this stage, students are just beginning to familiarize themselves with their topics and transitioning to a deeper understanding of the conversation can be a significant leap. By using Perplexity AI, students can more effectively bridge this gap, enhancing their comprehension and refining their research approach.

To begin the activity, students will input their selected topic into Perplexity AI. The tool will then generate a summary that outlines the current discourse surrounding the topic, including any controversies or disagreements. Students are expected to take detailed notes on this summary, assess the credibility of the sources cited, and record any additional insights or ideas on the provided assignment sheet. Next, students should identify and list additional keywords that could further enhance their research. If a specific subtopic from their initial findings captures their interest, they are encouraged to develop a follow-up prompt focusing on this subtopic, using a format consistent with their initial prompt.

Students are also tasked with reviewing the sources cited by Perplexity AI and to seek out additional resources to support their research. This step may involve using library databases or Google Scholar and seeking guidance from librarians if needed. The final step involves using Perplexity AI to create a concluding summary output of the research. This summary should encapsulate the main topics discussed and include any follow-up questions that arose during the investigation.

Pennsylvania Libraries: *Research & Practice*
Enhancing Information Literacy through Generative AI in the Library Classroom

palrap.org

The assignment aims to familiarize undergraduate students with AI tools for early-stage research development, enhance their ability to critically evaluate sources, and develop their skills in identifying relevant keywords and exploring subtopics. By engaging in this process, students gain practical experience in refining their topics with the goal that they can make an intervention in the conversation. There are also opportunities for librarians and instructors to provide feedback if the assignment is done in class. Exploring scholarly articles and their references can open additional opportunities to use library databases and, if necessary, interlibrary loan services. This approach allows students to conduct further searches for similar articles and resources, enhancing the depth and breadth of their research.

As part of the initial assignment feedback, the instructor found that research questions have been scoped more appropriately, students utilized found resources for the assignment in their annotated bibliography, and students had a better sense of the conversation happening in their topic going into writing their 7–8-page research paper.

Using Perplexity AI in the First-Year Chemical Engineering Classroom

In the first-year chemical engineering classroom for Pennsylvania State University (PSU), Perplexity AI is used for a group activity shared in Appendix B that explores why students are interested in their chosen major, but more importantly lays the groundwork for source evaluation. Harkening back to the ACRL Framework for "Scholarship as Conversation," students engage in the importance of understanding scholarly communication as an ongoing dialogue while encouraging them to see themselves as active participants in the larger information community. Students are placed in small groups to accommodate active roles for all members. The activity also utilizes Google Docs as a tool that supports collaboration in the classroom. Google Docs allows multiple users to edit a document simultaneously, enabling students to work together on projects, assignments, or group activities in real time (ED Technology Specialists, 2023). This feature fosters student success as they can see each other's contributions as they happen, enhancing communication and teamwork. The document is then shared via both a shortened URL and a QR code to ensure students can access the document on their preferred device.

Collaborative learning activities encourage students to explore new ideas and technologies in a supportive setting. By working together, students are exposed to diverse perspectives and innovative approaches to problem-solving. This environment nurtures creativity and adaptability, allowing students to experiment, make mistakes, and learn from them without fear of judgment. Such experiences are invaluable in building confidence and resilience, preparing students to navigate the complexities of academic life. Overall, the integration of scaffolding and peer-to-peer learning in the first-year library classroom equips students with the skills and mindset necessary for lifelong learning. The addition of a generative AI chatbot into this mix will only equip students further (Oddone et al, 2023). By addressing generative AI early, students are more likely to experience positive attitudes and integrations of AI tools in their academic experiences.

Each group should include at least one notetaker, one researcher, and one speaker. The notetaker is responsible for completing their group's section in the assigned Google Doc. The researcher uses Perplexity AI to gather information and share findings with the group. The speaker presents the group's results to the entire class. Assigning distinct roles helps students engage in the activity without feeling pressured to speak in larger settings, which is particularly beneficial for those who prefer not to speak publicly (Lange, Costley, and Fanguy, 2021). Additionally, this role distribution provides students with learning disabilities the opportunity to contribute meaningfully to the group's success. This approach helps disrupt stereotypical and gendered role assignments that can often occur in group settings (Burke, 2011). It promotes a more inclusive and equitable learning environment where all students can develop a diverse set of skills.

Pennsylvania Libraries: *Research & Practice*
Enhancing Information Literacy through Generative AI in the Library Classroom

palrap.org

The in-class activity starts with a discussion about the use of AI, inviting students to share which tools they have previously used. This conversation is framed positively, acknowledging the prevalence of AI in everyday life. The focus is on empowering librarians to guide students in the smart and ethical use of AI tools, fostering an understanding of how these technologies can be effectively and responsibly integrated into their academic work. The librarian then models the use of Perplexity AI in the classroom, filling out an example line on the Google Doc shared in Appendix B's Example Row (row 2 of the table). The questions students are requested to complete are:

1. What interests your group about Chemical Engineering? OR What does your group want to learn about in Chemical Engineering?
2. Develop a question about chemical engineering to research in Perplexity AI
3. After reviewing the answer to your question, what sources did Perplexity AI use in its answer to your question?
4. How would you evaluate these sources? Would you use them if you are writing a research paper?
5. What is another question your group can ask to narrow your results or find more information?

During modeling, discussions of source evaluation are interactive and allow students the opportunity to evaluate Perplexity AI cited sources together. Furthermore, the ACRL Framework for "Research as Inquiry" allows students to engage in research as an iterative process. Chatbots can offer instant responses to student queries, helping them quickly identify gaps in their understanding or areas needing further exploration. (2016). Once the modeling phase is complete, students are organized into small groups to work on their individual tasks.

After the single session class is completed, students maintain access to the Google Doc. It is important to discuss this assignment and how it will be shared after the class with instructors prior to the class itself. This way librarians can reference how students will access the assignment after the class period ends. A simple integration is within the course's learning management system (LMS). PSU's LMS of choice is Canvas. Course instructors can embed or link to Google Docs for display directly within Canvas (or their LMS) and any changes will be automatically updated.

This activity and shared lesson information is valuable because of the impact it makes on student success. While it may seem like a simple activity, students have the opportunity to engage with Perplexity AI for basic information gathering, while also learning from their peers. Students also become aware that multiple generative AI tools exist, and they are not limited to the singular, and ubiquitous, ChatGPT they most likely know. Additionally, the students in this class are early career undergraduate students, usually new to PSU. Part of the activity looks at removing stress associated with knowledge-gathering as an individual and moves to create a shared, peer-to-peer learning environment to support diverse perspectives and experiences.

Conclusion

Both authors chose the use of Perplexity AI for their generative AI guided assignments in the early career undergraduate classroom. Like other popular chatbots like ChatGPT and Claude, it offers users a conversational search experience. In the end, a specific generative AI tool is not the key point of this article. Rather, scaffolding, in conjunction with AI, builds student evaluation skills to better understand research. The authors identified four key criteria for AI use in the classroom: (1) AI tools that do not require an account and therefore respect users privacy and are easy to integrate into a single session; (2) Tools that offer a conversational search experience that allow students the opportunity to ask clarifying questions; (3) Tools that support the synthesizing of information (i.e. topics, debates, summarization, etc.); and (4) AI tools that incorporate citations.

It is this last criterion, providing citations and references, that Perplexity AI provides an exemplar for good information literacy practices. It simplifies the research process though its ability to summarize research, while

Pennsylvania Libraries: *Research & Practice*
Enhancing Information Literacy through Generative AI in the Library Classroom

palrap.org

ensuring that students maintain academic integrity and develop essential research skills. AI can significantly enhance scaffolded instruction within the ACRL Framework for Information Literacy by providing personalized learning paths that adapt content difficulty and pacing based on individual student progress, thereby aligning with the Framework's emphasis on developing a repertoire of research strategies. Finally, interactions with AI can prompt metacognitive reflection on the research process, reinforcing the Framework's emphasis on metacognition. While AI presents these potential benefits, librarians must guide students in using AI tools effectively and ethically to enhance the core principles of information literacy.

In the practical applications shared above, both authors feel that using AI in the classroom is beneficial to student success and learning. Librarians can use these examples as a roadmap for incorporation into their own instruction. The activities shared in the appendices are available for use and adaptation by readers. Ultimately, AI is incorporated more and more into everyday life - and library life. In October 2024, EBSCO began piloting their AI Insights - Beta tool at select institutions, which incorporates AI summaries for research articles (EBSCO, 2024). Instead of fearing these changes, using AI in the classroom allows students the opportunity to learn about prompt engineering and how to effectively use AI from their instructors and librarians. Creating positive experiences and habits early can impact their college career and then post-collegiate success.

In conclusion, the authors invite readers to check out the Martin and Armstrong (2024) report, *Tips and Trends: AI Developments and Resources for Academic Librarians* (acrl.ala.org/IS/tips-and-trends-ai-developments-and-resources-for-academic-librarians). Due to the new and novel landscape of AI-generated research and writing, and the importance of information literacy, the ACRL Instructional Technologies Committee published this report as an overview of generative AI's developments on academic librarianship. This report emphasizes the burgeoning nature of AI, highlighting current trends and providing practical guidance for academic librarians.

Recommendations for Future Research

In the future, the authors plan to explore how AI tools scaffold within the information literacy classroom. A follow-up project incorporating further assessment opportunities will speak to the impact, while also incorporating the student perspective with these activities. A comparison of grounded versus ungrounded AI models in the classroom would provide additional insights into student attitudes between the models.

References

Association of College & Research Libraries. (2016). *Framework for information literacy for higher education*. ala.org/acrl/standards/ilframework

Burke, A. (2011). Group work: How to use groups effectively. *The Journal of Effective Teaching, 11*(2), 87-95.

Chen, B. X., Grant, N., & Weise, K. (2023, March 15). How Siri, Alexa and Google Assistant lost the A.I. race. *The New York Times*. nytimes.com/2023/03/15/technology/siri-alexa-google-assistant-artificial-intelligence.html

EBSCO. (2024, October 23). Generative AI insights - Beta summaries. connect.ebsco.com/s/article/Generative-AI-Insights-Beta-Summaries?language=en_US

ED Technology Specialists. (2023, November 17). *10 Ways to promote collaborative learning using Google Docs*. edtechnologyspecialists.com/10-ways-to-promote-collaborative-learning-using-google-docs/

Haman, M., & Školník, M. (2023). Using ChatGPT to conduct a literature review. *Accountability in Research, 31*(8), 1244-1246. https://doi.org/10.1080/08989621.2023.2185514

Pennsylvania Libraries: *Research & Practice*
Enhancing Information Literacy through Generative AI in the Library Classroom

palrap.org

Hoy, M. B. (2018). Alexa, Siri, Cortana, and more: An introduction to voice assistants. *Medical Reference Services Quarterly, 37*(1), 81–88. https://doi.org/10.1080/02763869.2018.1404391

Huang, K. (2023, January 16). Alarmed by A.I. chatbots, universities start revamping how they teach. *The New York Times*. nytimes.com/2023/01/16/technology/chatgpt-artificial-intelligence-universities.html

James, A., & Filgo, E. (2023). Where does ChatGPT fit into the Framework for Information Literacy? The possibilities and problems of AI in library instruction. *College & Research Libraries News, 84*(9), 334-341. https://doi.org/10.5860/crln.84.9.334

Kim, M. K., & Kim, N. J. (2022). AI-Supported scaffolding for writing academic arguments. In C. Chinn, E. Tan, C. Chan, & Y. Kalli (Eds.), *Proceedings of the 16th International Conference of the Learning Sciences - ICLS 2022* (pp. 1129–1132). International Society of the Learning Sciences. repository.isls.org//handle/1/8426

Lange, C., Costley, J., & Fanguy, M. (2021). Collaborative group work and the different types of cognitive load. *Innovations in Education and Teaching International, 58*(4), 377-386. https://doi.org/10.1080/14703297.2020.1788970

Liu, B. (2023, December 15). Grounding for artificial intelligence. *ArXiv*. arxiv.org/html/2312.09532v1

Martin, J. & Armstrong, M. (2024). *Tips and trends: AI developments and resources for academic librarians*. ACRL Instruction Section. acrl.ala.org/IS/tips-and-trends-ai-developments-and-resources-for-academic-librarians/

McClain, C., Faverio , M., Anderson, M., & Park, E. (2023, October 18). *2. How Americans protect their online data*. Pew Research Center: Internet, Science & Tech. pewresearch.org/internet/2023/10/18/how-americans-protect-their-online-data/

Miyaoka, M., Toolsidass, R., & Magee, M. (2023, January). Embedded librarians and scaffolding for remote learning. *portal: Libraries and the Academy, 23*(1), 169-195. https://doi.org/10.1353/pla.2023.0010

National Telecommunications and Information Administration. (2023). *A proposal for more privacy in domain name personal data*. ntia.gov/blog/2023/proposal-more-privacy-domain-name-personal-data

Oddone, K., Garrison, K., & Gagen-Spriggs, K. (2023, July 17-21). From books to bots: Scaffolding ethical and critical use of generative artificial intelligence. *Proceedings of the 51st Annual Conference of the International Association of School Librarianship and the 26th International Forum on Research on School Librarianship*. https://doi.org/10.29173/iasl8740

Reiser, B. J., & Tabak, I. (2022). Scaffolding. In R. K. Sawyer (Ed.), *The Cambridge handbook of the learning sciences* (4th ed., pp. 53-71). Cambridge University Press. https://doi.org/10.1017/9781108888295.005

Pennsylvania Libraries: *Research & Practice*
Enhancing Information Literacy through Generative AI in the Library Classroom

palrap.org

Appendix A

Researching your Topic with Perplexity

Name(s)_____

Perplexity prompt (copy everything in the paragraph below including your added words:

I am researching the topic_____,

What is the conversation and research happening around this topic? What are the controversies or disagreements?

Class example (copy entire wording): I am researching the topic *social media and health effects*. What is the conversation and research happening around this topic? What are the controversies or disagreements?

Lateral Reading + verification of summary points:

Student Directions: Read through Perplexity's summary (answer) and take notes about your topic in the box below.

Perplexity URL links from prompt	Authority/ did the source confirm what Perplexity said:	Additional ideas from the article?

What additional keywords might you use in your research? Type them here:

Question for Student: Is there a subtopic within ideas mentioned in the first response that is interesting to you? If so, ask a follow up question or statement, using the same prompt above but with subtopic:

An example might be Social media and the FOMO (fear of missing out)

Pennsylvania Libraries: *Research & Practice*
Enhancing Information Literacy through Generative AI in the Library Classroom

palrap.org

Rewrite your prompt with a new question or statement.

Follow classroom example prompt: I am researching the topic *Social media and fear of missing and health* **effects**, What is the conversation and research happening around this topic? What are the controversies or disagreements?

Follow up perplexity Prompt: Provide me with links from the sources you cited in your response:

Lateral Reading + verification of summary points:

Perplexity URL links from prompt	Authority/ did the source confirm what Perplexity said:	Additional ideas from the article?

Looking through the sources that Perplexity provided you, what sources do they cite? Pick out a few additional sources that may be useful for your topic and find them using the library, Google Scholar, or Perplexity. Ask your librarian if you have any trouble finding them.

Source link	Title	Notes:

Concluding Perplexity Prompt: Summarize our conversation, including the topics we talked about and the follow up questions I asked.

CC BY-NC 4.0 Justin Kani

Pennsylvania Libraries: *Research & Practice*
Enhancing Information Literacy through Generative AI in the Library Classroom

palrap.org

Appendix B

Directions

- Each group will have 20 minutes to complete the document below while thinking about why they want to be a chemical engineer. Each group should designate at least 1 notetaker, at least 1 researcher, and a speaker.
    - Notetaker(s): Completes their group's Google Doc section below
    - Researcher(s): Wields Perplexity AI and shares results with the group
    - Speaker: Shares results with the class on behalf of their group
- Use Perplexity AI for this activity (https://www.perplexity.ai/)
- At the end of 20 minutes, each group's speaker will report what was found and any challenges.

Direct URL for this Doc: https://bit.ly/3X2lErE

Findings

Group Number	What interests your group about Chemical Engineering?OR What does your group want to learn about in Chemical Engineering?	Develop a question about chemical engineering to research in Perplexity AI.	After reviewing the answer to your question, what sources did Perplexity AI use in its answer to your question?	How would you evaluate these sources? Would you use them if you are writing a research paper?	What is another question your group can ask to narrow your results or find more information?
Example	*How chemical engineering can help with carbon capture in the atmosphere.*	*What materials can absorb carbon in the atmosphere?*	1. *University of California Davis College of Engineering* 2. *Chemical & Engineering News* 3. *U.S. Department of Energy*	*1 of the sources is an engineering news website and 1 is a government website. I want to review both further. The UC-Davis source is a press release so it would make sense to find the original article.*	*What are examples of Metal-Organic Frameworks (MOFs)?*

Pennsylvania Libraries: *Research & Practice*
Enhancing Information Literacy through Generative AI in the Library Classroom

palrap.org

1					
2					
3					
4					
5					
6					
7					
8					