

# Reflections on Information Literacy in the ChatGPT Era

Joel Blechinger<sup>1</sup>

<sup>1</sup>Mount Royal University Library, Mount Royal University, [bleching@ualberta.ca](mailto:bleching@ualberta.ca)

## To Cite:

Blechinger, J. (2023). Reflections on information literacy in the ChatGPT era. *Pathfinder: A Canadian Journal for Information Science Students and Early Career Professionals*, 4(1). 163-172. <https://doi.org/10.29173/pathfinder78>

## Abstract

This article is a reflection on information literacy evaluation heuristics, their use in the post-secondary information literacy instructional context, and the challenges posed to them by large language models like OpenAI's ChatGPT. Mike Caulfield's SIFT and Jane Mandalios' RADAR are analyzed as examples of heuristics that run into problems when used to critically assess large language models and their generated textual output. The author concludes by sharing thoughts on how he thinks information literacy instruction may be forced to change by generative artificial intelligence in the future.

**Keywords:** information literacy, generative artificial intelligence, ChatGPT, RADAR, SIFT

In the 2022–2023 academic year, culture-wide discussion of generative artificial intelligence (AI) tools like OpenAI's ChatGPT and DALL·E 2, Stable Diffusion, and Midjourney reached a critical mass. In particular, ChatGPT's ability to generate writing from natural language prompts that could potentially be passable in secondary and post-secondary level courses—and prove difficult to accurately detect with full confidence (Fowler, 2023; Heikkilä, 2023)—caused paroxysms in higher education media. Some figures declared a full-scale crisis (Scott, 2023; Weissman, 2023), while others welcomed the end of rote forms of assessment (such as the five-paragraph essay form) with the hope that this crisis moment would provide educators with the opportunity to significantly reflect upon how they approach instruction and assessment (Warner, 2022; Warner, 2023).

When the ChatGPT moment hit, I was an early-career librarian working at Mount Royal University Library and I had just completed my first semester of in-person library instructional sessions with students. My first year of work out of library school (2021–2022) had been with a different institution, and, due to COVID-19 pandemic measures, almost all my first instructional experiences had been over Zoom, which was not ideal from a pedagogical development nor a student engagement perspective. Frequently, when instructing over Zoom, I felt parachuted into a deracinated digital space to play the role of another talking head droning on about the importance of citation to a wall of switched-off camera avatars. In contrast, working on campus in the Fall 2022 semester across the 26 instructional sessions that I led that term, I had relished the opportunity to establish rapport and build a sense of community with students as we honed our information literacy skills together in the source evaluation activities that I designed. One particular source evaluation activity that I used in almost all my sessions was to curate eight or ten sources on a given topic (say, fast fashion), and to have students assess them for credibility (or, in some cases, scholarliness), voting whether they thought the source was usable. In my collection of sources, I would try to represent the diversity—one might even say the anarchy—of online information ecosystems by choosing a wide swathe of items: a Tweet, a scholarly article, a comment on a news article, a Wikipedia entry, a library catalogue record for a monograph, a Substack, a podcast, etc. I was often quite impressed at students' ability to navigate these disparate types of information, and our debriefing conversations together were some of the most memorable experiences of my instructional career.

### **ChatGPT as a Challenge to Information Literacy**

In my view, ChatGPT poses several significant challenges to information literacy (IL) instruction. The first of these challenges is the problem of misinformation and disinformation propagated by the chatbot. ChatGPT, as a large language model (LLM) trained on an enormous textual corpus, works by trying to predict what would be a “reasonable continuation” of the text it is generating (Wolfram, 2023), and that continuation is prone to error. As has also been documented, ChatGPT is able to generate deceptively fake references (Simpson, 2023; Smerdon, 2023; Welborn, 2023), often concatenating a couple of plausible reference elements (like the name of a real

first author and a journal title), but generating a fake article title (Scheelke, 2023). On a more macro level, OpenAI's (2023) own documentation for GPT-4 asserts, "[t]he profusion of false information from LLMs ... has the potential to cast doubt on the whole information environment, threatening our ability to distinguish fact from fiction" (p. 11). These tendencies are, to understate the case, deeply worrying, and I believe librarians need to think critically about whether we can recommend the use of tools so prone to fabrication in good faith. Library professionals' uncritical boosterism of LLMs—as seen in, for example, Steve Hargadon's (n.d.) AI bootcamps—is particularly discordant coming after the Trump era, when librarians everywhere were stridently rallying against the phenomenon of "fake news" (Revez & Corujo, 2021) and working to position libraries as "arsenals of lifelong information literacy" (Jaeger & Taylor, 2021). Crucially, as critics like McQuillan (2022, 2023) have also emphasized, such boosterism in sectors like education could further pave the way for increased deployment of AI technologies in other areas of society like law enforcement and the administration of social services, highlighting that our decisions to professionally embrace these technologies do not occur in a vacuum. As Safiya Umoja Noble's (2018) *Algorithms of Oppression* and Shoshana Zuboff's (2019) *The Age of Surveillance Capitalism* have pointed out, we need to contend with the ways in which big tech companies and the algorithms that drive them misuse, exploit, and profit from personal and otherwise protected data online. These and other similar texts were fashionable in the library world in the late 2010s, and the issues they raise have not disappeared now that AI is on the scene, and we are dealing with OpenAI in addition to Meta, Microsoft, and Alphabet Inc. Despite this, in the excitement around AI, critical approaches such as Noble's and Zuboff's have, at least for the moment, fallen by the wayside, seemingly discarded because librarians and educators are unable to resist the allure of the technologically deterministic new.

Another challenge that ChatGPT poses to IL instruction has to do with how it frustrates our common IL heuristics, and this is a challenge that could lead to a profound change in the way that we conceptualize and teach IL. More specifically, popular IL teaching heuristics such as SIFT and RADAR run into problems when they are used to analyze LLMs and their output. This challenge first occurred to me as I was

reading Scheelke's (2023) library guide that advises students on how to check ChatGPT for credibility. In this guide, Scheelke suggests two techniques: lateral reading and citation verification. Citation verification, as the simpler of the two proposed techniques, entails double checking that a source produced by the LLM exists, and, subsequently, if the source actually contains the information that the LLM attributes to it.

Scheelke's (2023) other technique is lateral reading, a practice developed by the Stanford History Education Group as part of its Civic Online Reading curriculum, which is also part of Mike Caulfield's popular SIFT method of IL instruction that emerged in the late 2010s. Caulfield's (2019) SIFT method involves four steps that students are to use in assessing an online source: stop; investigate the source; find better coverage; and trace claims, quotes and media to the original context. When students use SIFT, they are reading laterally (across the web) as opposed to vertically (staying on the source), and using other online sources to determine the place of the first source in the broader information ecosystem, what its reputation is, what its biases may be, and who may be behind it.

According to Scheelke (2023), lateral reading, as applied to ChatGPT, comprises reading across other online sources to vet the information generated by the LLM:

Don't take what ChatGPT tells you at face value. Look to see if other reliable sources contain the same information and can confirm what ChatGPT says.

This could be as simple as searching for a Wikipedia entry on the topic or doing a Google search to see if a person ChatGPT mentions exists. When you look at multiple sources, you maximize lateral reading and can help avoid bias from a single source. (Checking ChatGPT for Credibility section, para. 3)

These are worthwhile practical directions—useful to mitigate against ChatGPT's above-mentioned proclivity for fabricating references and spreading erroneous information—but I think they obfuscate the central problem that the LLM creates for lateral reading and SIFT. Unlike familiar resources like books, articles, webpages, and social media posts, which we know how to evaluate, ChatGPT troubles heuristics like SIFT because it is not a discrete source. It strings words together, synthesizing sentences through a calculation of linguistic probabilities based on many sources, on

demand, for the user that prompts it. As Woods (2023) rightly identifies, “when asking a question of ChatGPT, you just get the information, without any context” (para. 8). In contrast, Caulfield’s SIFT method—and, in particular, lateral reading as a technique—is highly dependent on leveraging contextual information about a source in order to inform a judgment about it.

Perhaps, what we will see as an update to lateral reading in the age of LLMs will be performing lateral readings on the *models* themselves. For example, researchers have found ways to drastically increase the toxicity of ChatGPT’s outputs by getting the chatbot to adopt personas (Deshpande et al., 2023), and it has exhibited gender and racial biases when prompted to generate performance review outputs (Snyder, 2023). Perrigo (2023) has also done vital reporting on the exploitative practices that OpenAI used to try to detoxify ChatGPT before its release, where Kenyan workers were paid less than two dollars an hour to judge snippets of the LLM’s output that included incredibly graphic content like incest, child sexual abuse, murder, and suicide. Developing lateral reading skills for LLMs could include growing one’s awareness of their algorithmic biases, but also working towards greater understanding of the human and environmental costs of their development and daily use (Luccioni, 2023). Fully grappling with the human and environmental impact of these technologies, however, may challenge librarianship’s fundamentally liberal professional disposition where seemingly every issue needs to be framed in terms of opportunities and challenges with the librarian as the neutral professional (Anderson, 2022) that can discern the middle path between the two.

Another IL heuristic that ChatGPT poses problems for is Mandalios’ (2013) RADAR model. I have used RADAR at Mount Royal University with students in our source evaluation exercises together. Though there is some variation, commonly RADAR stands for: relevance, authority, date, appearance (or accuracy), and reason for writing (Mandalios, 2013, p. 473). When using this specific criteria-based evaluation heuristic in trying to assess ChatGPT, one runs into even more marked problems than with SIFT. For example, what would it mean for the LLM to have a sufficient type of authority? How useful is an analysis of the LLM’s appearance, when its textual output can be so easily copied and pasted to another radically different online context? Or,

even more confusingly, what if ChatGPT's "reason for writing" is simply because a user prompted the LLM to write?

## Conclusion

We need to remember that IL heuristics have changed as digitally networked information sources have changed. Checklist-based approaches to source evaluation have been critiqued for almost twenty years in LIS (Meola, 2004), and the CRAAP test has been challenged for having "assumptions ... rooted in an analog age: websites are like print texts" (Wineburg et al., 2020, p. 8). I strongly agree with Bull et al. (2021) and their argument that we need to move beyond teaching frameworks and heuristics towards fostering what they call proactive evaluation, where we come to understand that "[b]oth the user and the information have agency in a dynamic relationship" (A Model for Transitioning from Reactive to Proactive Evaluation section) in the information ecosystem. Perhaps the problems with contemporary IL heuristics that are revealed when we apply them to LLMs point toward possible future developments in IL, like proactive evaluation, as librarians and users will be challenged to develop new algorithmic or AI literacies. Developing those literacies in depth may be extremely difficult, because, as McQuillan (2022) states, "deep learning is a complex set of nested mathematical operations that are off the scale in terms of anything we can grasp directly" (p. 21), and generative AI technologies like ChatGPT remain blackboxed to outsiders (Barr, 2023). This is partly why they currently advance at such a pace as to outstrip government regulatory bodies (Papachristou & Deutsch, 2023; Wong & Collier, 2023). Personally, I still think it will be worthwhile to help learners become better evaluators of discrete information sources such as the texts created and shared by human authors. It is the skills we sharpen evaluating discrete sources that allow us to now have a critical perspective on generative AI technologies and the Silicon Valley ideology (Daub, 2020) that imbues them. What worries me far more is the possibility of a future where we have lost that perspective and fully outsourced our thinking to AI models.

## References

- Anderson, R. (2022, March 3). Libraries and the contested terrain of “neutrality.” *The Scholarly Kitchen*. <https://scholarlykitchen.sspnet.org/2022/03/03/libraries-and-the-contested-terrain-of-neutrality/>
- Barr, K. (2023, March 16). *GPT-4 is a giant black box and its training data remains a mystery*. Gizmodo. <https://gizmodo.com/chatbot-gpt4-open-ai-ai-bing-microsoft-1850229989>
- Bull, A., MacMillan, M., & Head, A. (2021, July 21). Dismantling the evaluation framework. *In the Library with the Lead Pipe*. <https://www.inthelibrarywiththeleadpipe.org/2021/dismantling-evaluation/>
- Caulfield, M. (2019, June 19). SIFT (The four moves). *Hapgood Blog*. <https://hapgood.us/2019/06/19/sift-the-four-moves/>
- Daub, A. (2020). *What tech calls thinking: An inquiry into the intellectual bedrock of Silicon Valley*. Farrar, Straus and Giroux.
- Deshpande, A., Murahari, V., Rajpurohit, T., Kalyan, A., & Narasimhan, K. (2023). Toxicity in ChatGPT: Analyzing persona-assigned language models. *arXiv*. <https://doi.org/10.48550/arXiv.2304.05335>
- Fowler, G. A. (2023, April 3). We tested a new ChatGPT-detector for teachers. It flagged an innocent student. *The Washington Post*. <https://www.washingtonpost.com/technology/2023/04/01/chatgpt-cheating-detection-turnitin>
- Hargadon, S. (n.d.). *Library 2.0's ChatGPT bootcamp for libraries and librarians: Harnessing the power of ChatGPT in library services with Steve Hargadon*. Library 2.0. <https://www.library20.com/chatgpt-bootcamp>
- Heikkilä, M. (2023, February 7). Why detecting AI-generated text is so difficult (and what to do about it). *MIT Technology Review*. <https://www.technologyreview.com/2023/02/07/1067928/why-detecting-ai-generated-text-is-so-difficult-and-what-to-do-about-it/>
- Jaeger, P. T. & Taylor, N. G. (2021). Arsenals of lifelong information literacy: Educating users to navigate political and current events information in world of ever-

- evolving misinformation. *The Library Quarterly*, 91(1), 19-31.  
<https://doi.org/10.1086/711632>
- Luccioni, S. (2023, April 12). The mounting human and environmental costs of generative AI. *Ars Technica*.  
<https://arstechnica.com/gadgets/2023/04/generative-ai-is-cool-but-lets-not-forget-its-human-and-environmental-costs/>
- Mandalios, J. (2013). RADAR: An approach for helping students evaluate Internet sources. *Journal of Information Science*, 39(4), 470-478.  
<https://doi.org/10.1177/0165551513478889>
- McQuillan, D. (2022). *Resisting AI: An anti-fascist approach to artificial intelligence*. Bristol University Press.
- McQuillan, D. (2023, February 6). We come to bury ChatGPT, not to praise it. *Dan McQuillan Blog*. <https://www.danmcquillan.org/chatgpt.html>
- Meola, M. (2004). Chucking the checklist: A contextual approach to teaching undergraduates web-site evaluation. *Portal: Libraries and the Academy*, 4(3), 331-344. <https://doi.org/10.1353/pla.2004.0055>
- Noble, S. U. (2018). *Algorithms of oppression: How search engines reinforce racism*. NYU Press.
- OpenAI. (2023). *GPT-4 system card*. <https://cdn.openai.com/papers/gpt-4-system-card.pdf>
- Papachristou, L., & Deutsch, J. (2023, March 17). *ChatGPT advances are moving so fast regulators can't keep up*. Bloomberg.  
<https://www.bloomberg.com/news/articles/2023-03-17/chatgpt-leaves-governments-scrambling-for-ai-regulations>
- Perrigo, B. (2023, January 18). OpenAI used Kenyan workers on less than \$2 per hour to make ChatGPT less toxic. *Time*. <https://time.com/6247678/openai-chatgpt-kenya-workers/>
- Revez, J., & Corujo, L. (2021). Librarians against fake news: A systematic literature review of library practices (Jan. 2018–Sept. 2020). *The Journal of Academic Librarianship*, 47(2), Article 102304. <https://doi.org/10.1016/j.acalib.2020.102304>



- Scheelke, A. (2023, April 24). *AI, ChatGPT, and the library*. Salt Lake Community College Libraries. <https://libguides.slcc.edu/ChatGPT/InformationLiteracy>
- Scott, I. (2023, April 18). Yes, we are in a (ChatGPT) crisis. *Inside Higher Ed*. <https://www.insidehighered.com/opinion/views/2023/04/18/yes-we-are-chatgpt-crisis>
- Simpson, C. (2023, February 24). ChatGPT - when good citations go bad. *Screenface*. <https://www.screenface.net/chatgpt-when-good-citations-go-bad/>
- Smerdon, D. [@dsmerdon]. (2023, January 26). *Why does ChatGPT make up fake academic papers? By now, we know that the chatbot notoriously invents fake academic references* [Tweet]. Twitter. <https://twitter.com/dsmerdon/status/1618816703923912704>
- Snyder, K. (2023, February 3). We asked ChatGPT to write performance reviews and they are wildly sexist (and racist). *Fast Company*. <https://www.fastcompany.com/90844066/chatgpt-write-performance-reviews-sexist-and-racist>
- Warner, J. (2022, December 11). ChatGPT can't kill anything worth preserving. *The Biblioracle Recommends*. <https://biblioracle.substack.com/p/chatgpt-cant-kill-anything-worth>
- Warner, J. (2023, January 4). How about we put learning at the center? *Inside Higher Ed*. <https://www.insidehighered.com/blogs/just-visiting/how-about-we-put-learning-center>
- Welborn, A. (2023, March 9). ChatGPT and fake citations. *Duke University Libraries Blog*. <https://blogs.library.duke.edu/blog/2023/03/09/chatgpt-and-fake-citations/>
- Weissman, J. (2023, February 8). ChatGPT is a plague upon education. *Inside Higher Ed*. <https://www.insidehighered.com/views/2023/02/09/chatgpt-plague-upon-education-opinion>
- Wineburg, S., Breakstone, J., Ziv, Nadav., & Smith, M. (2020). *Educating for misunderstanding: How approaches to teaching digital literacy make students susceptible to scammers, rogues, bad actors, and hate mongers* (Working Paper A-21322). Stanford History Education Group. <https://purl.stanford.edu/mf412bt5333>

- Wolfram, S. (2023, February 14). What is ChatGPT doing ... and why does it work? *Writings*. <https://writings.stephenwolfram.com/2023/02/what-is-chatgpt-doing-and-why-does-it-work/>
- Wong, S., & Collier, K. (2023, May 15). *Washington is struggling to catch up on artificial intelligence*. NBC News. <https://www.nbcnews.com/politics/congress/washington-struggling-catch-artificial-intelligence-rcna84489>
- Woods, L. (2023, February 21). AI chat tools and information literacy. *CILIP Information Literacy Group Blog*. <https://infolit.org.uk/ai-chat-tools-and-information-literacy-laura-woods/>
- Zuboff, S. (2019). *The age of surveillance capitalism: The fight for a human future at the new frontier of power*. Public Affairs Books.