

Fostering Critical Thinking in the Age of AI: Why Information Literacy Still Matters

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Abstract: Undergraduate students enter political science classrooms today comfortable with many AI tools and services that promise to aid their learning, writing, and research. Meanwhile, many faculty and librarians view generative AI and related tools with trepidation, concerned about the ways in which they will change higher education, especially in political science. As with all new technologies, there are significant challenges that we must confront as we consider their benefits. Educators must rethink how to foster students' critical thinking, information literacy, communication, and research skills—typically long-term objectives—in light of rapidly developing apps and programs that aim to reduce effort and provide quick results. This paper from a political science librarian uses the ACRL Framework for Information Literacy to demonstrate the importance of teaching fundamental research and writing skills before offering ideas for how to incorporate AI tools into information literacy building assignments and activities in a constructive way.

Introduction

College professors and their students are caught in the midst of transformative changes to artificial intelligence (AI) technology which will have seismic impacts on the fundamentals of teaching and learning. Although AI technologies have been on the radar of educators and researchers for years, 2023—when generative AI chatbots like OpenAI’s ChatGPT, Google’s Gemini (formerly Bard), and Anthropic’s Claude built on Large Language Models (LLMs) became ubiquitous in the public sphere (Hines 2023)—marked a dramatic turning point for higher education. College students are entering our classrooms today with a multitude of AI-driven tools and services at their disposal that promise to aid their learning, writing, and research. Both students and their instructors stand to gain from this enhanced AI technology, but both also face serious risks to their work from the ever-expanding capacity and reach of these tools.

The political science discipline will eventually adapt to the impacts of AI, but instructors are already being confronted with the reality that many of our pedagogical practices and assessment strategies are no longer sufficient in this new environment. Faculty and academic librarians may view generative AI services and other tools with trepidation, concerned about the ways in which they will change political science education and teaching. As with all new technologies, there are significant challenges that we will confront as we consider their affordances. This paper will discuss how to foster students’ critical thinking, information literacy, communication, and research skills—typically long-term learning goals—in light of rapidly developing apps and programs that aim to reduce effort and provide quick results.

Literature Review

Information Literacy Pedagogy

Information literacy is defined by the Association of College and Research Libraries (ACRL) as “the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning” (2015). These abilities are developed through a framework of knowledge practices and dispositions that progress toward metaliteracy.¹ Metaliteracy is a term that conveys the higher-order personal development required in acquiring these skills, including “behavioral, affective, cognitive, and metacognitive engagement with the information ecosystem” (ACRL 2015). The six frames of the information literacy framework are: Authority Is Constructed and Contextual, Information Creation as a Process, Information Has Value, Research as Inquiry, Scholarship as Conversation and Searching as Strategic Exploration. Librarians who work closely with political science and related programs have adapted these frames to the specific needs of the discipline and use them to guide their information literacy instruction (Oberlies and Cloyd 2021).

The interconnected skills that comprise information literacy are at the core of political science research methods and teaching, and the topic is covered by the discipline’s pedagogical handbooks (Thornton

¹ ACRL previously promulgated a set of standards that acted as a checklist of competencies to determine if a student was information literate (2000), which formed the basis for numerous political science papers in past years, but has since adopted a more holistic framework for information literacy that will be the focus of this paper (2015).

2016; Shannon and Shannon 2021; Reed 2021). Yet despite the fact that information literacy has long been recognized as a key element of political science education, it is not always explicitly taught by instructors (Thornton and Atkinson 2022). College students struggle with many of the components of information literacy, including interpreting sources and constructing literature reviews, that come naturally to their expert instructors, and these skills need to be incorporated by design into political science courses (Ackerman and Arbour 2016).

Both political science faculty and academic librarians are invested in instilling information literacy skills and involving a librarian in such instruction is beneficial for student learning outcomes (Shannon and Shannon 2016; Thornton 2016; Devine, Gauder, and Pautz 2019), though these skills are vital to teach even if a librarian cannot be included (Harden and Harden 2020). Moreover, information literacy should be scaffolded within the major, from introductory government courses onward so that students will be prepared for upper-level research intensive projects (Siver and Haeg 2021).

Many political science educators have adapted their instruction beyond lectures and their assessments beyond traditional exams to incorporate a variety of evidence-based practices more conducive to knowledge retention, skill building and critical thinking. Pedagogy that centers students and encourages active engagement in the learning process, that is, “active learning,” is a best practice throughout higher education (Sharples 2019). Activities such as projects, simulations, debates, games, and group work are valuable inside and outside the classroom, and have been successfully demonstrated in courses across political science subdisciplines (Hendrickson 2021; McMonagle and Savitz 2023; Reynolds 2023). In addition to using active learning techniques within content-specific course design, such innovative, learner-centered pedagogy is central to building the core skills of writing, research, and information literacy (Murphy 2017; Collins and Nyenhuis 2021; Kapoor and LaVan 2023).

AI in Higher Education

Generative AI has been analogized as a “calculator for words” (Willison 2023), with the comparison bringing to mind the dramatic shift in mathematics pedagogy upon the arrival of that affordable calculation technology into educational settings. It has a variety of functions that free users from tedious, repetitive tasks, and as such can quickly facilitate higher-order thinking and analysis. Yet as Warner (2023) points out, while the output from generative AI and a student may look the same, they derive from completely different processes—predictive algorithms versus human thought. For Warner, “the learning that happens inside the student is far more important than the finished product they produce on a given assignment.” To extend this argument, the struggle inherent in learning how to express oneself and articulate ideas has value beyond the written word.

The recent surge in public access to generative AI technology has completely altered the paradigm of teaching and learning, and there are innumerable ramifications to higher education. Generative AI chatbots like ChatGPT, Gemini, and Claude can provide topic ideas, research questions, outlines, and complete essays in response to one or more prompts by a user (Sabzalieva and Valentini 2023, 8–9). The output can be modified into seemingly any tone and can even mimic the voice of a user’s provided text to generate new text, making it extremely versatile and difficult to detect (Mills 2023). Many serious concerns have been raised regarding academic integrity, the commercial nature of the products, the lack of transparency and privacy, and biases replicated from the source material (Sabzalieva and Valentini 2023, 11). For example, these LLMs do not disclose the sources they were trained on, and they have a tendency to hallucinate, that is, they produce text that conflicts with factual knowledge or which cannot

be otherwise verified (Li et al. 2023). Nonetheless, this technology is here to stay and will only become more advanced.

Besides the writing-centered assistance of chatbots, there are other AI tools offering to perform additional facets of academic inquiry, from gathering literature, to summarizing those papers, to cleaning and analyzing data. Traditionally, these have been labor intensive steps in research, though information retrieval has dramatically improved with advances in library search and discovery tools. Library databases typically rely on keyword searches of structured metadata (e.g. authors, title, abstract, date, publisher) to retrieve desired results. This older type of database contains the words themselves, while powerful new computing options now allow for vector-based searching that converts words into spatial concepts that can be compared for proximity to one another (Heidt 2023, 457). While libraries have found ways to connect researchers who search on the open web (e.g. Google Scholar) with their subscription information resources through third party integrations, more online databases are taking advantage of AI and machine learning technology to accelerate research (Bartsch 2022).

One such database is Semantic Scholar, a free, open-source index of over 200 million academic papers that incorporates AI into its data processing to create a sophisticated knowledge graph with “advanced semantic features such as structurally parsed text, natural language summaries, and vector embeddings” (Kinney et al. 2023). Semantic Scholar is the foundation of numerous for-profit ventures, including Elicit, a subscription AI tool that promises to “analyze research papers at superhuman speed,” allowing users to “automate time-consuming research tasks like summarizing papers, extracting data, and synthesizing your findings” (Elicit n.d.). Users can quickly produce annotated bibliographies and basic literature reviews of authentic scholarly papers from Elicit’s summaries. Similarly, Consensus uses Semantic Scholar along with the LLM GPT 4.0 to generate summaries of academic texts and offers a “consensus meter” to judge whether retrieved studies agree with a user’s yes/no research question (Consensus 2022). Research Rabbit is an AI tool that integrates PubMed and Semantic Scholar to offer recommendations for further research based on a user-supplied starting paper; they dub themselves “Spotify for Papers” (ResearchRabbit n.d.).

OpenAlex is another free index of 250 million scholarly works, which like Semantic Scholar, allows software developers to build AI tools and services on top of their database. Their index offers a powerful means of citation counting and is a common way to measure scholarly impact (OpenAlex n.d.). The subscription AI tool Keenious utilizes OpenAlex to promise their users “up to twice as many relevant papers” than they might find in their own literature search (Keenious n.d.). The site prompts you to input your existing research paper in Word or PDF format, and then it recommends sources based on its proprietary interpretation of the content. Keenious has many institutional subscribers, including many universities, which it proudly advertises as evidence of its value.

AI-enhanced search functionality is now ubiquitous on smartphones and devices—Google and Bing both provide generative AI answers at the top of every search result. There are companies that target the education sector, like Perplexity, which promise that their AI search brings back “reliable sources” from “trusted news outlets, academic papers, and established blogs,” using terms like reliable, authoritative, and trustworthy but without specifying which sources or how they determine their veracity (What is Perplexity? n.d.). Perplexity has marketed itself very successfully to students at top college campuses with gamified referral systems that promise reduced or free subscriptions to their product (Race to Infinity n.d.). Campuses with Microsoft 365 have the option to add an AI tool called Copilot, which

advertises itself as a work “assistant” to increase productivity and integrates into all their traditional—one even might say essential—software products like Word, Excel, and PowerPoint. Their promise to “surface the information and insights you need from a sea of data” is quite compelling in a world with too much content for any human to sift through (Spataro 2023).

Free or inexpensive AI tools and services can now be combined by students and academics to avoid most of the traditional, and often tedious, tasks of research, though whether they should be deployed in all of the available capacities remains an open debate. There is much criticism in the academy due the lack of transparency of the industry (Heidt 2023), and the extraordinary amounts of energy consumption and carbon emissions required for LLMs (Cho 2023). Moreover, some see AI-enhanced work as an abrogation of integrity of the academic enterprise (Hosseini, Rasmussen, and Resnik 2023). But even if AI is viewed as a promising means to increase efficiency and productivity for their own research efforts (Mollick and Euchner 2023), college instructors must consider the potentially deleterious effect of students using these tools *before* they gain competence in the basic skills of writing, critical thinking, and information literacy.

If the cat’s not just out of the bag, but “there are cats everywhere,” as the influential scholar of innovation, Mollick, memorably quipped about AI technology (Mollick and Euchner 2023, 13), the question turns to how instructors might approach it in their classrooms. Many professors have explored the impact of generative AI on teaching in recent years, with the multitude of articles in *Chronicles of Higher Education* and *Inside Higher Ed* speaking to the pedagogical challenges ahead. Mills (2023) notes that “we can’t out-prompt it” or count on designing writing assignments that are somehow AI-proof. Instead, Mills urges instructors to design meaningful and interesting assignments that will motivate students to engage and develop stronger relationships with students to encourage their active participation in learning. In addition, Mills encourages faculty to explore AI tools together with students so they can understand their capabilities and risks.

AI in Political Science Education

While empirical studies of the effects of AI tools on political science teaching have not yet been published, several in the profession have begun to explore the opportunities and challenges AI presents for political science education. At APSA’s 2023 Annual Meeting, Wobig argued that writing is a fundamental process for learning and thinking that must be mastered by undergraduates, not left up to AI chatbots, and considered ways writing assignments could be reworked to encourage independent thought and production, through active learning and increasing students’ sense of agency and intrinsic motivation (2023).² In his recent online JPSE article, Michels considers the impact of AI on political science education writ large, focusing on the effects on writing, information literacy, and critical thinking. Michels sees opportunities to enhance teaching with this new technology, argues that that understanding how to use AI tools is essential to improving students’ professional readiness, and suggests that instructors model their appropriate use for students (Michels 2023).

Political science professors are understandably anxious about the impact this AI technology revolution will have on writing and research both as disciplinary skills taught to undergraduates and as evaluative methods for assessing student comprehension and mastery of subjects. Recent surveys of APSA

² Wobig’s 2023 conference paper, “The Write Stuff: Designing Undergraduate Writing Assignments in the Era of Generative Artificial Intelligence” won the 2024 Best APSA Conference Paper Award from the Political Science Education section, and is forthcoming in *the Journal of Political Science Education*.

members appear to indicate that teaching faculty are wary of these new AI functionalities, lean towards limiting their use in coursework, and are often unable to discern when writing is produced by AI chatbots (Ardoin and Hicks 2024; Wu and Wu 2023, 2024).³ Academic librarians express similar guardedness to other educators with regard to generative AI. They are especially concerned about the accuracy and reliability of information generated by chatbots, which do not cite their source material and routinely hallucinate references (Hosseini and Holmes 2023, 840).

With respect to generative AI chatbots, Ardoin and Hicks (2024) offer some helpful recommendations about incorporating the tools into assignments through reflective exercises. If students are sufficiently adept in the course material in question, comparing ChatGPT output to their own understanding in an instructor-guided assignment could be instructive. Yet, students are typically taking a course because they do not yet have adequate knowledge in an area, so they may not have enough grounding in the discipline to discern the flaws in generated content. With regard to AI search tools that offer real citations and generated summaries or even literature reviews, nuances of expertise and relevance are perhaps even harder to parse. Now is the time to strengthen collaboration between instructors and librarians to address the challenge of information literacy in the age of AI.

Discussion

Teaching information literacy remains a top priority in the age of AI as students of political science are by nature not experts in core elements of research such as information retrieval, evaluation, synthesis and analysis. Unlike their professors, subject matter experts who can judge AI output based on their long experience, undergraduates lack this wealth of knowledge and often lack awareness of their own limitations—a phenomenon that predates this technology. Indeed, incoming students will face the same difficulties as past generations in developing their information literacy (Michels 2023, 5). Librarians and departmental faculty will need to work together to promote these skills to ensure students are confident consumers and producers of information and discerning in their use of AI tools in research.

When I asked ChatGPT 3.5 in 2023 to design “an assignment that balances the use of AI with the development of essential research skills,” it surprised me by recommending beginning with a traditional literature review and hypothesis formulation before incorporating AI tools.⁴ I reacted with skepticism, asking how one could ensure students used traditional skills to conduct a literature review (they advised consulting a librarian), and why students should be forced to write a literature review the old-fashioned way when so many AI tools exist to do the work. ChatGPT helpfully listed many reasons why this type of assignment was valuable to students, stating that “while AI tools can expedite certain aspects of the literature review process, the goal of including traditional methods is to ensure that students develop a comprehensive set of research skills, critical thinking abilities, and ethical awareness” (OpenAI 2023).⁵

ACRL’s Information Literacy Framework is a useful structure for describing the practices that can impart such skills within political science courses. As noted above, the frames can be incorporated with or without the participation of a librarian, though librarians are a great asset as experts in applying information literacy training to the disciplinary context. We are also well suited to instruction at the

³ Wu and Wu presented early findings of their research at the 2023 APSA Annual Meeting in Los Angeles, CA, but their complete article was published in 2024 by *PS: Political Science & Politics*.

⁴ See the appendix for the ChatGPT 3.5 full assignment text.

⁵ Sadly, by late 2024, ChatGPT 4o began to recommend AI-assisted literature reviews for the same query.

intersection of information literacy, digital literacy, and AI literacy due to our constant professional development and adaptation to technological advances (Scott-Branch, Laws, and Terzi 2023, 4). In the following section, I will discuss how each frame of the ACRL Framework for Information Literacy contributes to the development of robust information literacy skills in the context of research-focused political science courses. By incorporating activities that engage students independently and in groups, instructors will be able to strengthen students' critical thinking before and as they engage with generative AI.

Authority Is Constructed and Contextual

This frame is focused on how we learn to identify and assess an information source's credibility, the very foundation of information literacy. We teach our students that authoritativeness is situational and is conferred in many ways, so it is critical to examine bias and context for every source. This critical thinking skill requires practice and proceeds through stages of cognitive development. Novice students may rely on a checklist or look only for certain credentials, while advanced learners can consider alternative types of authority.

Students often begin their academic journey with a dualistic view of who is an expert/authority, and who is not. They presume that the books and articles assigned by a professor are authoritative while acknowledging that Wikipedia or social media post are not reliable. Teaching a more nuanced understanding is imperative, especially in political science where bias cannot be avoided, and many so-called "gray" information sources are necessary for a comprehensive understanding of topics. I like to ask students about areas in which they are an authority, as this is an empowering exercise that helps them think through the question of credibility with something they feel confident and knowledgeable about. Thinking about how they became an expert in that area can help the students draw parallels about what expertise they expect from authors and information sources.

A common assignment to incorporate AI tools is to have students compare AI-generated responses on a topic of the class with their own work or with readings—this could be fraught for early students whose understanding of the subject is incomplete. Instead, you could start by extending the exercise of working within their own areas of expertise and have students critique chatbot answers to their own questions. The lack of transparency in the operation of companies that create AI tools, and the ethical issues of the tools themselves could itself be a springboard for conversation on how authority is constructed and what sources are reliable.

Information Creation as a Process

Political science draws on a wide range of primary and secondary sources and the production of this information depends on the intentions of and constraints on the creators. Funding and opportunity play a significant role in what information becomes available and how it is presented. The process by which information is created (authoritative or otherwise) is not instinctively contemplated by students, and should be overtly taught by instructors. Librarians frequently mention this frame as it relates to the peer-review process for scholarship, but this is not a readily accessible analogy, as few undergraduates have a strong understanding of academic. In my experience, discussing a current event and the information that is produced over time, from social media, to print media, to articles and books proves to be more salient.

Students do innately perceive how the format of a source and its audience impacts the authoritativeness of information, but it can lead to mistaken assumptions about credibility. To illustrate this, I have an activity where I conceal the authorship of an online magazine article, op-ed, and scholarly article on the same political science topic and ask small groups to consider which is the most reliable. By choosing a variety of written works by the same political science scholar (ideally one's own or a known faculty member), you can engage students in a discussion of how one person's credibility is impacted by the venue(s) where they publish. This can be combined with a conversation about paywalls and the cost of quality information (see below). It is especially relevant to the emergence of AI generated articles on free news sites, and instructors should point out the difficulty in distinguishing between human-produced and AI-generated material.

Political science educators have made strides in addressing the rampant distortions of factual information through various online channels, i.e. mis/disinformation, and several innovative practices were discussed at the 2023 Teaching and Learning Conference at APSA. Unpacking the psychological and environmental conditions that underlie deeply held beliefs is of particular importance in political science courses where sensitive and potentially polarizing subjects are addressed. That AI generated images and videos (e.g. "deep fakes") appear genuine further complicates conversations with our students about how we validate and trust media and public information generally. Careful skill-building is critical in unlearning traditional norms of source authority and preparing students to trace the creation of information to verify its origins and intent.

Information Has Value

In the Information Has Value frame, it is critical to understand the motivations behind the production, dissemination, and framing of information. Since information is produced at a cost, it is necessary to properly cite and attribute it. Students, and even faculty, are unaware of the price of library databases and subscriptions, so librarians often explain this as part of their instructional activities. Students can relate to the costs of subscription media like streaming shows, music services, and online news, but are usually surprised at the sheer scale of research library collection budgets. Conversations about open access resources and "big deals" that universities make with scholarly publishers are becoming more prominent, but undergraduates do not always make the connection with their own textbook or tuition costs. Paid content creation is, however, ubiquitous on social media and "influencers" are an excellent example of the value proposition for information dissemination.

Librarians are frequently asked to explain the purpose of and styles of citation to students, and this is an ideal moment to mention intellectual property and copyright issues, as well as academic integrity. I find that students are interested to learn how scholarship is produced if it is described first hand by their professors, and usually are unnerved by the fact that articles are written without compensation by academics and then purchased by the university library from publishers. Using AI further complicates the question of giving credit to authors since LLMs are proprietary and do not reveal their sources in general, nor cite which sources in particular are used to generate a provided text. In my experience, students tend to be very concerned about citing correctly as they do not want to be accused of plagiarism, but they also support crediting people for their ideas, which may influence their perspectives on chatbots. AI tools are difficult to cite since they generate new content with each query, and this lack of reproducibility is an important point to raise with regard to political science research methods.

Because of the high cost of quality information, it is vital that students learn how to use the expensive resources they have available exclusively at their institution as well as where to look for open access material that they can rely on post-graduation. Assignments to translate scholarly information into more accessible formats online such as Wikipedia entries or open access materials can open students' eyes to disparities in information access.

Research as Inquiry

Research is an iterative, messy process, and this information literacy frame is at the heart of the work academic librarians and instructors do to prepare students for their projects. We aim to demonstrate that conducting research is necessary both before and after formulating meaningful questions and that researchers must be open to varied perspectives and methods to guide their work. Rather than cherry-picking sources that endorse the argument they are trying to make, students should be encouraged to explore and read widely on their topic, to develop their hypotheses in response to research and not be afraid of modifying or diverging from their original ideas.

In many respects, librarians are constrained by the parameters of assignments they are presented with, and we work when we can in concert with instructional faculty to ensure students do not fear modifying or adjusting their aim in light of information they acquire. This is a resilience that serves students well—cultivating curiosity over rigidity is vital to critical thinking and examining all information that they encounter inside and outside the classroom.

A simple way to develop this curiosity is to begin with material that sparks interest in the students, whether it is popular media, or archival documents, or public opinion data. If a student comes to the library to “do research” by starting with a database of scholarly journals, they may feel intimidated or confused by the hyper-focused studies that are returned. In consultations, I often back up to consider other entry points on a subject, whether it's a policy organization, NGO, or news source, and identify experts that have both public-facing and academic orientations to their research.

Activities like brainstorming topic ideas and creating concept maps are interactive means of conveying the iterative and broad nature of research. These are areas in which generative AI chatbots excel, however it is potentially confining to students' imagination and potential if they start by having ideas presented to them. I recommend having students grapple with their research topics alone and with their peers prior to including AI input, so that their creativity is not stifled. As a secondary task, using tools such as Web of Science and Research Rabbit can visually demonstrate the value of citation tracing to reveal connections between authors and scholars.

Searching as Strategic Exploration

Like Research as Inquiry, the frame of Searching as Strategic Exploration emphasizes endurance and iteration. Research requires divergent (brainstorming) and convergent (selecting the best source) thinking and multiple search strategies are usually needed in order to identify the best information. Information retrieval has become less burdensome due to advances in databases and search engine technologies mentioned above. However, training students to look beyond the first page of results and to seek out additional avenues to search is critical. In real life, information is not usually organized conveniently and efficiently—knowing how to follow leads and track down information such as data and

historical documents will benefit students beyond their educational studies into their careers and personal lives.

Librarians are often called upon to demonstrate the types of repositories and databases available to college students. One way to ensure everyone has attempted to use these resources is to have students in class explore a selection of these that are relevant to the topic at hand. I like to use a crowdsourced shared document for students to record their findings as they test the features available. It is important to have instructor encouragement to try unfamiliar search options while together in an environment where they can ask questions and are not being assessed on the outcome. Students may be impressed to discover that library tools also offer AI recommendations and make it easier to follow citations to further research.

Google Scholar has been the dominant alternative to the traditional library discovery systems and search engines for years now. Some professors are avid users and promote the site to their students as a first stop in research. As a librarian, I include Google Scholar among the tools that I demonstrate, while advising students to consider the very different ways in which library databases and search engines like Google operate and the ways results are presented. AI research options like Keenious, Consensus, or Elicit are even more removed from the ways in which library databases search based on keywords and metadata. They do not offer search string reproducibility but are attractive in their natural language processing capabilities and instant gratification. They often include more material but of extremely variable quality and completeness. All of these services disassociate citations and papers from the scholarly context in which they were created and published (e.g. the journals, monographs, and specific academic disciplines), and discourage careful reading of the full text material.

When assignments require a certain number of sources but do not specify how they be obtained, students may be inclined to rely heavily on new AI research tools. They should learn that some services, such as ChatGPT and Gemini routinely hallucinate and invent citations based on some possibly real details, like author names or journal titles, while others like Elicit, Keenious, and Research Rabbit use a corpus of existing research. When rigor in the search is necessary to ensure comprehensive, high-quality results, such as for thesis papers or systematic reviews, neither of these types of AI are yet adequate. Moreover, these tools generate summaries based on limited metadata and abstracts, leading to gross oversimplification of findings and wild inaccuracies. Students or academics who use these services will not necessarily pursue and read the full text of recommended articles, and this is a perilous risk for classroom assignments and academic publishing both. AI tools should be considered a way to explore more and expand a literature search, rather than short-cuts or alternatives to other databases.

Scholarship as Conversation

Framing scholarship as conversation conveys that communities of scholars, researchers, and/or professionals are engaged in sustained discourse and often differ in their views. We teach that student researchers should situate themselves within this conversation using citations to relevant research and information, typically in the literature review portion of their papers.

Literature reviews are frequently misunderstood by students I work with as a laundry list of relevant sources. Students want to locate “good” sources or really just the ones that will meet their instructor’s expectations. Most are working in the opposite direction of true research, that is, they are seeking citations to reinforce their own ideas and the theories with which they started their essays (see

“Research as Inquiry” above). It is difficult to express that the point of research is to immerse oneself in existing scholarship and to become part of an ongoing conversation, particularly if students have not experienced academic gatherings like conferences and or read an academic journal as a whole issue.

In the age of AI generated literature reviews and bibliographies, it is critical to help students claim their agency in the research process. We must demonstrate that the purpose of these activities is not merely to offer homage to older scholars or to meet the criteria of an assignment rubric. Rather, we are making careful decisions about which prior research we want to build upon and establishing connections between previously disparate works to advance our arguments and further the research. Especially when we ask students to conduct “original research” to culminate their academic journey, it is vital for them to understand themselves as scholarly writers continuing the work of other scholars—real people—who they should read and cite because they actually want to relate that scholarship to their own.

This is a tall order and requires a more substantial treatment in the classroom than many courses offer; it is a perfect opportunity to involve a librarian. I have successfully incorporated numerous activities into class sessions to address the fundamental purpose of literature reviews. One popular activity is to have students read the literature review from an article written by the professor (ideally on the topic of the class). Students are inherently intrigued by the idea of reading their own teacher as a scholar/expert, and it provides an example of the ideal literature review as written by their professor. The discussion revolves around how the writing is organized, what key topics and categories are addressed, and what scholarship they cited. If there is more time, students can compare three carefully selected articles’ literature review sections to see how some of the same scholarship is cited by many others, to demonstrate the power of influential research on newer studies.

To incorporate AI, the instructor could prompt a service like Elicit or Consensus to produce a literature review or annotated bibliography and have students compare this to an article by the professor or their own work. Such discussions could include how to distinguish the quality and impact of cited research, the significance of the peer review process, and the danger of hallucinated research citations. AI tools may offer convenience and may surface relevant sources, but they do not contextualize these within the field itself or understand which are more reputable.

Conclusion

Consensus AI declares its intention to revolutionize information seeking through their AI technology, stating: “Searching for vetted, unbiased information has long been an arduous and painful process. It is our belief that, if used thoughtfully, carefully, and elegantly, artificial intelligence can finally change this equation” (Consensus n.d.). This sentiment likely resonates with students and researchers of all disciplines who wish they did not have to struggle with messy, iterative attempts to locate and evaluate information for their projects. Yet, it is the process itself that hones information literacy skills and develops students into critical thinkers, able to assess such claims as deceptive.

Political science courses are optimal spaces for students to improve their capacity to find and interpret information effectively; political literacy is built upon information literacy and is necessary for ethical citizenship in a democratic society. Incorporating these frames into assignments in interesting and active ways will ensure that information literacy skills are foundational rather than incidental to the course objectives. Students arrive in the classroom with extensive experience in using digital technology, but

not always with an understanding of the processes and decisions behind these developments.⁶ Building those “traditional research skills,” as ChatGPT calls them, will empower students to face rapidly changing AI technology with appropriate caution and skepticism.

While some students will inevitably look for shortcuts to an assignment, most are motivated to learn if presented with manageable projects that promote agency and encourage their individual interests. This may require more effort on the part of instructors, as personal attention to students’ writing and research is needed to ensure that they are developing these skills rather than simply gaining the ability to run an AI prompt. Focusing on information literacy inside the classroom with innovative activities, ideally with the assistance of a librarian, will help ensure that all students have a strong groundwork on which to build. Further studies on the impact of AI assistance in political science teaching and learning will be invaluable to the profession as we navigate these new challenges.

⁶ See for example, quantitative methods instructors confronting students’ computer illiteracy (Best and Mallinson 2023).

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Appendix: November 17, 2023 ChatGPT 3.5 Response to question: "Can you suggest such an assignment that balances the use of AI with the development of essential research skills?"

Here's an example of an assignment that balances the use of AI with the development of essential research skills in a political science course:

****Assignment Title: Analyzing Political Discourse: AI-Enhanced Sentiment Analysis****

****Objective:****

The goal of this assignment is to explore the intersection of AI and political discourse analysis while developing critical research skills, including data collection, analysis, and interpretation.

****Assignment Components:****

1. ****Literature Review (Traditional Research Skill):****

Students are required to conduct a literature review on a specific political issue or theme. This involves using traditional research skills to identify key academic articles, books, and other relevant sources that provide background and context for the chosen topic.

2. ****Hypothesis Formulation (Critical Thinking):****

Based on their literature review, students develop a hypothesis or research question related to the chosen political issue. This encourages critical thinking and the formulation of testable propositions.

3. ****Data Collection (AI Integration):****

Students use AI tools for sentiment analysis to examine public opinions on the chosen political issue. They collect data from various sources such as social media, news articles, or political speeches. AI tools should be selected based on their appropriateness for sentiment analysis tasks.

4. ****Data Validation and Bias Evaluation (Critical Analysis):****

Students critically evaluate the output of the AI sentiment analysis. They assess the reliability of the data, consider potential biases in the AI algorithms, and compare the AI-generated results with their own observations and insights.

5. ****Qualitative Analysis (Critical Interpretation):****

In addition to the AI-generated data, students conduct qualitative analysis of political discourse. They analyze specific examples, quotes, or statements related to the chosen issue to provide depth and nuance to their research.

6. ****Comparison with Academic Research (Integration of Traditional and AI-Enhanced Approaches):****

Students compare their findings from the AI-enhanced sentiment analysis with insights from academic research. This step encourages them to see how AI tools can complement traditional research methods and identify potential areas of convergence or divergence.

7. **Ethical Reflection (Critical Awareness):**

Students reflect on the ethical considerations of using AI in political discourse analysis. They consider issues related to bias, privacy, and the responsible use of technology in research.

8. **Presentation or Paper (Communication Skills):**

Students present their findings in a written paper or oral presentation. This allows them to practice effective communication of research results, integrating both the AI-enhanced and traditional research components.