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Research Literacy with AI: Verifying Sources with Perplexity and the CRAAP Framework to Improve Intrinsic Motivation

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Research Literacy with AI: Verifying Sources with Perplexity and the CRAAP Framework to Improve Intrinsic Motivation

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Overview

This activity teaches undergraduates to critically locate and verify sources by triangulating results from Perplexity AI (free version), Google Scholar, or Academic Search Complete, using the CRAAP framework (Currency, Relevance, Authority, Accuracy, Purpose) to evaluate sources (Blakeslee 6). Rather than treating AI as a shortcut, it frames generative AI as an object of critical inquiry. Grounded in Self-Determination Theory (Deci and Ryan 5), the activity supports autonomy through topic and prompt choice, competence through scaffolded source finding and verification steps, and relatedness through peer and whole-class discussion. First, students should be taught how to identify keywords for their research questions. Second, after a brief demonstration and guided practice, students locate six sources using traditional databases from Google Scholar or Academic Search Complete. Third, students are introduced to Perplexity AI through a guided demonstration and use it to locate six additional sources related to their research questions. They are shown how the tool retrieves and summarizes information and then use it to locate 6 sources with direct links related to their research questions. Using traditional databases first allows students to

understand how these systems function and how overwhelming the results can be. Afterwards, introducing Perplexity helps them see how AI-driven searches can support the research process by identifying relevant sources more efficiently and with less cognitive load. Fourth, students evaluate and select three credible sources from Perplexity and three from Google Scholar or Academic Search Complete using the CRAAP test. Fifth, they identify the three most credible sources using the test and complete an evaluation form. Sixth, they engage in a Think–Pair–Share activity to compare AI-generated and database-verified sources and select the single most credible source. Finally, a whole-class discussion addresses AI mislabeling, algorithmic bias, and ethical research practices, followed by a reflective assignment on how evaluation criteria informed their decisions. To support engagement with research practices, this activity draws on Lepper and Hodell’s two out of four sources of intrinsic motivation: challenge and control, which can significantly influence student learning (Lepper and Hodell 73-105; Pintrich and Schunk 268). This challenge can be addressed by implementing tasks of intermediate difficulty (Pintrich and Schunk 268), thereby reducing students’ cognitive overload. This lowers the entry barrier while preserving analytical rigor. Students select their research topic, choose between prompt formats when using Perplexity AI, decide whether to submit handwritten or digital evaluations, and determine which sources to adopt, adapt, or reject. This control over academic outcomes supports autonomy and enhances intrinsic motivation (de Charms; Deci).

Time Commitment

75 minutes in one class session

Time	Activity (Key Words)
0–5:00 min	Learning Objectives & Purpose: research literacy with AI; finding research question keywords
5:00–15:00 min	Traditional Databases Demo & Practice: 1) Instructor’s database demo (Google Scholar or Academic Search Complete) 2) Using their own topics, students find 6 sources with an initial database search: Google Scholar or Academic Search Complete.
15:00–20:00 min	AI Demo & Practice: 1) Instructor’s demo using Perplexity AI (source generation & evaluation) 2) Using their own topics, students generate 6 sources with Perplexity AI.
20:00–40:00 min	Individual work: each source CRAAP verification (Select 3 from Perplexity, 3 from Google Scholar, or Academic Search Complete)

40:00– 52:00 min	Individual work: evaluate and select 3 most credible sources from AI and traditional databases using CRAAP test; fill the evaluation form
52:00– 60:00 min	Think-Pair-Share: compare AI vs. database findings, and find the most suitable and credible one
60:00– 72:00 min	Whole-class discussion: AI mislabeling, bias, and ethical use; instructor formative assessment of learning objectives
72:00– 75:00 min	Personal reflection; homework assignment

Materials

Students will need access to a laptop or tablet with internet connectivity to use Perplexity AI (free version), Google Scholar, or Academic Search Complete. Prior to the activity, students should have developed a research question in class. They will also need paper or a digital document to complete the CRAAP evaluation form and write reflective responses. Handwritten or digital submissions are both acceptable.

Activity Process

- First, the instructor explains the purpose of research literacy with AI, including how these skills apply to other courses,

future careers, and the expansion of AI in daily life. Students observe an instructor-led demonstration on developing effective keywords from a sample research question and then generate relevant keywords for their own research questions to use in database searches. (5 minutes)

- Second, instructors demonstrate how to use traditional databases, Google Scholar, or Academic Search Complete, to find sources, and students then locate six scholarly sources using these tools based on their own research questions. (10 minutes)
- Third, students observe a teacher-led demonstration of how Perplexity AI generates sources and summaries for the sample research question. The instructor models two prompt approaches: (A) using selected keywords to generate six potential scholarly sources with direct links, or (B) entering the full research question to generate six potential scholarly sources with direct links. Students choose one of the demonstrated prompts to generate six potential sources using Perplexity AI for their own research topic. (5 minutes)
- Fourth, students verify each AI-generated source using Google Scholar or Academic Search Complete, examining publication timeliness, relevance, source credentials, reliability, and purpose. They identify three credible sources from Perplexity and three additional sources from Google Scholar or Academic Search Complete combined. (20 minutes)
- Fifth, from the six selected sources, students evaluate and choose the three most credible and complete a CRAAP evaluation form, responding to both closed-ended and open-ended justification questions. Students need to answer each question with bullet points or full sentences in digital or handwritten form and submit them to the instructor after

class. (12 minutes)

1) **Currency**

When was the source published or last updated? Is it current enough for my research topic, and why?

2) **Relevance**

Does the source directly address my research question? Is it appropriate for my academic level? Who is the intended audience?

3) **Authority**

Who is the author? Is he/she a qualified expert on this topic? What are the author's credentials or organizational affiliations given?

4) **Accuracy**

Are the claims supported by credible evidence with citations, and what are they? Is the source language objective? Are there any spelling, grammar, and other typographical errors?

5) **Purpose**

What is the purpose of the source: to inform, persuade, sell, or entertain? Do the authors make their intentions clear? Is the information fact, opinion, or propaganda? Is there an underlying bias?

- Six, in a Think–Pair–Share activity, each student selects the single strongest source and discusses their evaluations with peers, comparing AI-generated results with database-verified findings. (8 minutes)
- Seventh, students participate in a whole-class discussion addressing AI mislabeling, credibility claims, algorithmic bias, and ethical research practices. The instructor conducts a formative assessment to determine whether students have met the learning objectives and to identify areas that may require clarification or reinforcement. (12 minutes) Finally,

students reflect on what they have learned today and receive the homework assignment. The reflection assignment is due next class and should be approximately two double-spaced pages in total. (3 minutes)

In the assignment, students must respond to all questions below in either digital or handwritten form.

- 1) How did using Perplexity AI influence the way you located and evaluated academic sources compared to using Google Scholar or Academic Search Complete alone?
- 2) Select one AI-suggested source you chose to adopt, adapt, or reject. Which CRAAP criteria most influenced your decision about unreliable sources, and why?
- 3) How did you engage with written, digital, and interface-based modes (such as AI summaries, database abstracts, and full-text articles) during this activity? How did these modes shape your understanding of credibility and authority?
- 4) What part of the research verification process was most surprising or challenging, and how did this activity contribute to your overall research project?
- 5) What did you learn from this activity that changed the way you think about using AI in academic research?

Learning Outcomes

Students engaging in this activity/assignment will:

- Develop research literacy and strategies in using traditional databases and generative AI tools to support academic research and improve intrinsic motivation
- Evaluate and compare the credibility of AI-suggested sources and academic database results

- Apply the CRAAP framework to assess AI-generated and scholarly database sources
- Make ethical decisions about adopting, adapting, or rejecting AI-assisted sources
- Strengthen intrinsic motivation for research by exercising autonomy, demonstrating competence, and engaging in collaborative evaluation

Learning Accommodations

- Students may choose different participation roles, such as peer discussion leader or note-taker, to accommodate varied communication styles and learning preferences.
- Instructional materials should be presented in multiple formats, including live demonstrations, written instructions, and digital examples.
- Students may complete CRAAP evaluations individually or collaboratively, depending on accessibility needs.

Works Cited

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Further Reading

Dobrin, Sidney I. *AI and Writing*. Broadview Press, 2023.