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Introduction to using generative AI in research literature review for graduate students

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Introduction to using generative AI in research literature review for graduate students

Assignment Introduction

As a graduate student and after in your discipline you will be asked to solve problems that have no existing solution. While you may be a subject matter expert, your own opinion is not enough. Your contribution will need to stand on the shoulders of your disciplinary colleagues and add on to what they built.

To that end, this assignment will focus on the research process of performing a literature review. In order to do an effective literature review, you will need solid information literacy skills. Those skills are described here:

Information literacy is described as the ability to identify, access, evaluate, and use information effectively, efficiently, and ethically. It involves a set of skills and dispositions that enable individuals to navigate complex and rapidly changing information environments, critically analyze and evaluate sources of information, and effectively communicate their findings.

Breaking that down into component parts, there are 4 input skills:

1. Identify
2. Access
3. Evaluate
4. Use

And 3 output skills:

1. Effective
2. Efficient
3. Ethical

The search algorithms used by the library databases you use, general search, and drafting tools all use predictive search or predictive text generation programs. You are encouraged to use such tools, and we will explore how to do that in class discussion.

Pre-Assignment Exploration (this practices some input skills)

Use generative AI (bard, GPT, etc) to explore a topic in aerospace you are interested in and consider yourself knowledgeable and one that you consider yourself uninformed. Compare.

1. What do you notice?
2. What cues or tells did you notice that led you to notice the error(s) in the topic in which you consider yourself an expert?
3. What errors are probable in the topic where you consider yourself a novice?
4. What cues or tells led you to suspect those errors?

Assignment (this practices both input and output skills)

Scenario Prompt: You are on the executive team (CEO, CFO, COO, etc. Pick your favorite) of an aerospace corporation and need to create and articulate an evidence based strategy to be used internally to direct the management team. Based on your expertise, identify a strategy for business success or compliance that relates to your topic of interest.

Perform a literature review using the library databases. Find 4 articles. At least one must be counter/naysayer. Put them in Zotero.

Create a mini-lit review with the 4 articles. Summarize each of the articles in a paragraph in an appendix to a strategy memo to the management team.

The strategy memo should give a broad framing of the issue or problem facing the management team. You need to articulate a logical response to the problem, supporting your conclusion upon your mini lit review. The strongest arguments anticipate counterarguments, which may come from your counter article or incorrect but superficially correct AI generated text. Be sure to clearly weigh the evidence and conclude appropriately.

Instructor notes:

Have aerospace reference librarian (Alfred) visit class prior

Assign "On Bullshit" essay to read prior to AI/LLM discussion

Walk through LLM "under the hood" and discuss limitations

Demonstrate a critical comparison using the drones articles & add a demonstration of bard/GPT

- implicit problems of reliance on AI.