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## Chatting as Brainstorming: Drafting Research Questions with Generative AI in an Introductory Composition Course

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## **Chatting as Brainstorming: Drafting Research Questions with Generative AI in an Introductory Composition Course**

### **Assignment Overview**

Many people are interested in generative AI tools such as ChatGPT as potential assistants. For this assignment, you will use ChatGPT (or a similar generative AI tool) as a brainstorming assistant as you move from a narrowed topic to a question that will guide your research process for your next project. Your task is twofold:

- produce a well-formed, productive research question and a related set of keywords that will allow you to conduct productive database research.
- reflect on ways to use generative AI tools productively and ethically.

To accomplish these tasks, complete the guided process outlined below. Each stage asks you to consider the characteristics of strong research questions: open-ended, free from assumptions or biases, and appropriately narrow for the scope and genre of the project.

By the end of this assignment, you will be able to:

- Compose prompts to generate potential research questions for database research.
- Evaluate the quality and effectiveness of research questions generated by ChatGPT by using characteristics of productive research questions.
- Derive a revised research question and keyword set to guide a specific project and a specific genre based on your analysis of the generated text.
- Practice appropriate acknowledgment and ethical documentation of generative AI tools.
- Discuss benefits and limitations of generative AI tools as drafting assistants.

### **Submission & Evaluation**

Upload the following to Blackboard by the deadline listed on our course schedule:

- your completed guided worksheet, which culminates with your revised research question, a set of keywords, and a short reflection on your experience of brainstorming research questions with ChatGPT
- a copy of the chat session(s) (PDFs).

You will receive formative feedback on this assignment before the first day of library research so you can make necessary adjustments to your research plan. The guided worksheet is scored as complete/incomplete.

### **Responsible Use of ChatGPT (and Similar Generative AI)**

Keep in mind that everything that ChatGPT generates must be reviewed and evaluated by you for accuracy. ChatGPT does not have direct access to the Internet or any of our library databases; it does not fact-check the text it generates. Also, as with any research process, keep careful notes, especially on your use of ChatGPT and its output. If you paraphrase, summarize, or quote (copy) from your chat session to your guided worksheet, clearly label the origin of that text and punctuate it appropriately. Also, be sure to note the date of all chat sessions and the generative AI app and version you use. Finally, do not put any confidential or identifying information into a prompt for ChatGPT or similar as the privacy of personal or identifiable data cannot be guaranteed.

*See page 2 for the guided worksheet and task process steps.*

### Guided Worksheet: A Process for Brainstorming Research Questions with ChatGPT

Type your responses in this guide. Work through each part in the order provided. Answers should be complete and clear; however, answers may be brief, using lists and short phrases when appropriate. Be sure to save/download a copy of the chat session(s) to submit with your completed guided worksheet.

1. Begin by describing the starting point for your research plan. Record the following:
  - a. Your narrowed topic:
  - b. The genre (document type) you will produce from your research:
  - c. 2-4 initial keywords:
  - d. 2-3 potential questions that could guide your research:
2. Open ChatGPT and begin a new chat. Compose an initial prompt that names your narrowed topic and genre for the final product. Example templates include the following:

*Generate research questions for \_\_\_[genre]\_\_\_ on \_\_\_[narrowed topic]\_\_\_.*

*“Generate research questions for a recommendation report on college student wellness.”*

*Generate \_\_\_[number]\_\_\_ research questions for a \_\_\_[genre]\_\_\_ on \_\_\_[narrowed topic]\_\_\_.*

*“Generate 6 research questions for a recommendation report on college student wellness concerns.”*

3. Analyze the list of questions generated by ChatGPT in part 2. Then answer each of the following questions:
  - a. Which questions seem most promising as research questions for your project? Why?
  - b. Which questions seem too broad? How so? How could you revise it to be more focused?
  - c. Which questions seem either closed or too narrow? Explain. How might you revise these questions to be more effective?
  - d. Which questions make assumptions that could lead a project in unproductive directions? Explain. How might these questions be revised to be less leading?
  - e. Which of the generated questions surprises you? Why?
  - f. Does the list of generated questions contain inaccuracies? Do you see any questions that raise flags for you? Which ones? Why?
  - g. What type of question did you expect to appear on the list of questions but does not?
  - h. Did versions of your initial questions (part 1) appear in the generated questions? Compare the questions. What do you notice?
  - i. Which generated question sparks another prompt/question for ChatGPT? How would you write that as a prompt for ChatGPT?

4. Staying in the same chat session, prompt ChatGPT to comment on its own output. For each characteristic in a.-d. below, how does ChatGPT's generated response compare to *your* observations about ChatGPT's output in part 3 above? To our class discussions on planning effective database research?
  - a. Prompt: Identify research questions in the list that are too broad.
  - b. Prompt: Identify research questions in the list that are too narrow.
  - c. Prompt: Identify research questions in the list that are potentially leading or biased.
  - d. Prompt: Identify the most promising research question in the list.
  - e. Select one question generated by ChatGPT that you feel has potential but may be too broad given the scope and genre of the research project. Prompt ChatGPT to generate sub-questions based on its initial question. What do you notice about the sub-questions generated by ChatGPT? Which, if any, helps you think of ways to redirect or refocus your research?
  - f. Optional: Enter a prompt from #3.i above. Note the generated output and any insights on crafting a strong research question and/or using ChatGPT to question and brainstorm.
5. Select the 1-2 most promising questions generated by you and/or ChatGPT. Copy and paste these questions below (document appropriately). Next, make any revisions you feel are necessary based on your observations throughout this guided process. Write a single revised question and 3-4 related keywords; this should be the question you plan to use to guide your library database research.

***Promising initial questions:***

***My revised research question:***

***Keywords to accompany the question:***

6. Reflect on 1) the strength of your revised question, 2) the process of working with generative AI as an assistant to develop the revised research question, and 3) your observations or questions about the advantages, limitations, and ethics of generative AI as assistants for similar projects. **Compose a reflection of at least 3 well-developed paragraphs.** Use the questions below to get started with your reflection:

*Reflect on developing the question:* How did your research question(s) change in this process (be specific)? What makes your revised question a strong, effective question to begin research on your specific project? How did working with ChatGPT assist you in developing your research question and keyword set? Describe your confidence in evaluating the quality of research questions after this process.

*Reflect on working with ChatGPT for brainstorming:* What did you learn about prompting ChatGPT and evaluating the output? To what degree do you feel generating and vetting many possibilities helped you draft a stronger research question? How likely are you to use ChatGPT as a brainstorming "assistant" again for a similar task? What will you borrow from this prompting and reflection process? What will you do differently?

*Reflect on ChatGPT's potential as an assistant: What do you see as the advantages and the limitations of ChatGPT as a drafting assistant more generally? Based on your experience, what must be considered to use ChatGPT and its generated output effectively and ethically? What would you like to know or explore so that you can use generative AI tools confidently, ethically, and effectively in other contexts?*