

Using AI to Support Learning: a hands-on workshop

Prompt to copy/paste

Concept explanation (Slide 19)

Prompt to start with:

1. Explain confidence interval to me at a level. Include: a plain-language explanation, one example, one analogy, one common misunderstanding, and three self-check questions.
2. Explain plagiarism to me at an undergraduate level. Give one example, one analogy, one common misunderstanding, and three self-check questions.
3. Explain data privacy to me as a first-time learner. Give one example, one analogy, one common misunderstanding, and three self-check questions.
4. Explain regression to me at a graduate public health level. Give one example, one analogy, one common mistake, and three self-check questions.

Keyword replacements examples:

[concept] options: - p-value - hypothesis - literature review - sampling bias - confounding - plagiarism - citation - data privacy - theoretical framework - conceptual framework	[level] options: - first-time learner - undergraduate - graduate - beginner graduate-student - exam review - non-technical - journal club - lab meeting
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Followed with learning check prompt:

1. Ask me three questions to test whether I understand the explanation. Wait for my answer after each question. Do not give the answer until I try.
2. Now ask me to explain this concept in my own words. After I answer, identify what is correct, what is incomplete, and what I should review.

Turn AI into a tutor (Slide 20)

Prompt to start with:

1. Act as a supportive tutor. Quiz me on concept one question at a time. Wait for my answer. If I am wrong or incomplete, give one hint before giving the explanation. After five questions, summarize what I understand and what I should review next.
2. Quiz me on APA citation rules one question at a time. Give hints before answers.
3. Help me practice explaining regression. Ask one question at a time and make me answer in my own words.
4. I am studying for a statistics quiz. Ask me five questions on p-values, confidence intervals, and interpretation. Wait for my answer each time.
5. I will try answering this assignment question first. After I write my answer, give feedback on clarity, missing reasoning, and what I should review. Do not write the final answer for me.

Study plan and practice questions (Slide 21)

Prompt to start with:

1. Help me study data privacy for an undergraduate research methods quiz. Create a 30-minute study plan, 5 practice questions, an answer key, and a list of common mistakes. Before giving me the answer key, ask me to answer each question. After I answer, explain why my answer is strong or weak.
2. Help me study literature review structure for a graduate seminar. Create a 30-minute study plan, 5 practice questions, an answer key, and common mistakes.
3. Help me prepare for a journal club on survey research. Create a 30-minute reading plan, 5 discussion questions, and a checklist of what I should look for in the article.
4. Help me study causal inference for a methods class. Make a 30-minute plan, 5 practice questions, and a list of concepts I should not confuse.

Followed with learning check prompt:

Before giving me the answer key, ask me to answer each question. After I answer, explain why my answer is strong or weak.

Literature search planning (Slide 22)

Prompt to start with:

Help me plan a literature search on generative AI and student learning for a class paper. Do not give citations yet. Give search terms, synonyms, possible databases, inclusion criteria, exclusion criteria, and a review table template. End with a checklist for verifying sources.

Keyword replacements examples:

[topic] options: - generative AI and student learning - online learning engagement - academic integrity and AI tools - student burnout - data privacy education - community health communication - faculty AI adoption - peer feedback in writing courses	[purpose] options: - class paper - thesis background - journal club - seminar presentation - literature review matrix - capstone proposal - policy memo
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Follow-up prompt after finding real papers:

I found these three real articles from my library database. I will paste the abstracts. Summarize only from the abstracts I provide. Do not add facts, findings, or citations beyond the text.

Your responsibility

- Search real databases or approved sources.
- Verify title, author, journal, year, and DOI or link.
- Check that the finding actually appears in the paper.
- Do not use citations invented by AI.

Paper summary from provided text (Slide 23)

Prompt to start with:

I will provide a short excerpt. Summarize only from the text I provide. Extract: research question, study design, population or setting, methods, key findings, limitations, and terms I should look up. Mark anything not stated.

Synthetic excerpt for workshop use: A university teaching center offered a 90-minute workshop on responsible use of generative AI for graduate students. The workshop included a short lecture, prompt practice, peer discussion, and a reflection activity. Students completed anonymous pre- and post-workshop surveys about confidence in using AI for learning, understanding of academic integrity rules, and ability to identify AI-generated errors. The project team reported higher self-rated confidence after the workshop, but the activity did not include a control group and did not measure long-term behavior.

Follow-up comparison prompt

Compare this excerpt with a second excerpt that I will provide. Use only the text provided. Create a table with: purpose, setting, methods, outcome, key finding, limitation, and question for discussion.

Your responsibility

- Check the original paper, not only the AI summary.
- Mark what is missing or unclear.
- Do not treat a summary as a substitute for reading.

Notes, tables, and formatting (Slide 24)

Prompt to start with:

1. Convert my rough meeting notes into an action-item table. Preserve my meaning. Do not add decisions that are not in the notes. Use columns: action item, owner, due date, open question, and what to verify.

Student research group meeting notes:

- We need a short seminar on AI and academic integrity for next month.
- Maya will draft a flyer, but the date is not final yet.
- Chris will ask the library about a room with projector access.
- The group wants a 10-minute activity where students compare a weak prompt and a better prompt.
- Someone should check whether the department has an AI policy page.
- We might invite a faculty speaker, but no one has confirmed who.
- Need a simple feedback form after the seminar.

2. Convert my rough class notes into a study table. Preserve my meaning and do not add new content. Use columns: concept, definition from my notes, example, confusion point, and what I should review.

Class notes:

- Confounding is when another variable is related to both the exposure and outcome.
- Example: exercise and heart health, age might matter.
- Selection bias has something to do with who gets included in the sample.
- Measurement bias is about whether the thing is measured correctly.
- I am confused about how confounding is different from mediation.

3. Convert these article notes into a literature matrix. Do not add information. Use columns: article label, research question, setting, methods, key finding, limitation, and question I still have.

Article A notes: studied student engagement in online courses; survey of undergraduates; found that timely feedback was associated with higher engagement; limitation was self-reported data.

Article B notes: studied use of AI writing tools in a graduate seminar; interviews with students; students liked editing support but worried about losing their own voice; limitation was small sample.

Your responsibility

Neat formatting does not prove strong logic. After formatting, check whether the categories make sense and whether anything important is missing.

Writing, editing, and tone control (Side 25)

Prompt to start with:

1. Rewrite this paragraph for an academic audience in a clear and concise tone. Preserve my meaning. Do not add new facts, citations, or claims. Give three versions: shorter, clearer, and more polished. Then list what you changed and what I should verify.

“I think AI tools are useful for students because they can explain things and make writing sound better. But there are also problems because sometimes students just copy the answer and then they do not learn the skill. In my opinion, the important thing is that students should use AI for support and not for replacing their own thinking. Teachers also need to be clear because students may not know what is allowed.”

2. Polish this email to my instructor. Make it professional, respectful, and concise. Preserve my meaning. Do not add excuses or facts I did not provide. Give one polished version and one shorter version.

“Hi Professor, I am writing because I am confused about whether we are allowed to use ChatGPT for the literature review assignment. I used it to help make search terms but I did not use it to write the paper. I want to make sure that is okay before I submit. Can you let me know what is allowed? Thanks.”

3. Rewrite this announcement for three audiences: classmates, faculty, and community partners. Keep the facts the same and adjust only tone and wording.

“We are holding a seminar on responsible use of AI tools for learning. The session will include examples, practice prompts, and discussion about academic integrity. Participants should bring a laptop.”

Your responsibility

- Keep your own argument and voice.
- Remove unsupported claims.
- Do not let polished writing hide weak reasoning.
- Check whether editing support is allowed for the assignment.

Visualization, design, and promotion (Slide 26)

Prompt to start with:

1. Help me create a concept map for responsible AI use in student learning. Suggest the central idea, 4 main branches, 2 subpoints under each branch, and one sentence explaining the overall logic. Do not create unsupported claims. End with what I should verify.
2. Help me design a simple conceptual framework for a class presentation on AI as a learning support tool. Include these components: concept explanation, practice questions, writing feedback, formatting support, student reasoning, academic integrity, and verification. Suggest a layout and a figure caption.
3. Help me create text and layout ideas for a seminar flyer.

Event: Responsible AI Use for Student Learning
Audience: undergraduate and graduate students
Purpose: invite students to a hands-on workshop
Details to leave as placeholders: date, time, location, registration link
Output: title, subtitle, 3 bullet points, call to action, and layout suggestion
Do not invent date, time, location, logos, sponsors, or registration links.
4. Help me turn this message into one clear presentation slide: AI can support explanation, practice, organization, editing, and visualization, but students must keep reasoning, authorship, and verification. Suggest a title, 3 bullets, and one visual layout idea.

Your responsibility

Check:

- Is the visual message accurate?
- Is it appropriate for the audience?
- Is it accessible and readable?
- Are images, icons, logos, and branding allowed?
- Are date, time, location, and sponsor details correct?

Code explanation and debugging (Slide 27)

Prompt to start with:

1. Act as a coding tutor. Explain what this code or error message means. Do not rewrite the full solution first. Ask me what I think is happening, give hints, then suggest a minimal fix and checks I should run.

I am using Python and got this error:

```
import pandas as pd
survey = pd.read_csv("student_survey.csv")
survey.groupby("class_year")["confidence_score"].mean()
```

Error message:

KeyError: 'confidence_score'

Please help me understand what the error means and how to check the problem.

2. Add comments to this code so I can understand what each line does. Do not change the code unless you see a clear issue. If you suggest a change, explain why.
3. Suggest 5 sanity checks I should run before trusting a summary table from a student survey dataset. Do not assume the dataset is clean.

Your responsibility

- Do not paste restricted data.
- Do not submit code you cannot explain.
- Run and test code yourself.
- Follow assignment rules for coding help.