

Generative AI: a tool or a partner?

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Workshop objectives

- **Identify** elements of a prompt that produce effective results.
- **Formulate** structured prompts that effectively communicate specific tasks and questions to generative Artificial Intelligence.
- **Apply** prompting strategies to human-AI collaboration scenarios in teaching, research, and general work activities.



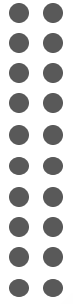
Workshop agenda

- Part 1: AI as an entity designed to engage us
- Part 2: The structure and elements of a prompt
- Part 3: Practice communicating with genAI tools



Part 1: AI as an entity designed to engage us

Taking a look at present perception and future needs for working with AI in teaching and learning.



My placement of Artificial Intelligence

I think we're just at the start of something big.

I see generative Artificial Intelligence (genAI) as a transformative partner.

Success with genAI is in how we *interact* with the technology.



Fire enables food preparation, metallurgy, warmth, etc.



Electricity enables artificial light, modern technology, etc.



Internet enables mass, instantaneous communications, etc.



AI enables creation beyond one's skills, knowledge discovery, etc.

Let me start with a question...

For example, how would ask generative Artificial Intelligence to teach you about driving student collaboration?

You could explore ‘driving student collaboration’ in these ways

Asking the tool to give items

Let’s think Internet Search...

- “ways to drive student collaboration”
- “university classroom student collaboration”
- “pedagogies for student collaboration in-person and online”
- “university student learning activities that involve collaboration”

Asking your partner to tell/explain

Let’s think a colleague or friend...

- “I’m revising my course design for undergraduate students and want some ideas for driving increased student collaboration. Can you give me 10 ideas across various learning activities that I can brainstorm with?”



Style of communications

- Think about the difference in how you communicate with a **tool** (e.g. Google Search) or with a **person** (e.g. colleague, student).
- And consider how large language models (LLMs) were/are trained with...
 - Human professional casual writing
 - Human artistic creations
 - Human audio recordings
- Generative AI was/is trained to communicate to us, like us. It is supposed to sound natural and familiar.

Note: We do not yet have general AI. But 'reasoning capable' AI now?



Many instructors are only wading into genAI

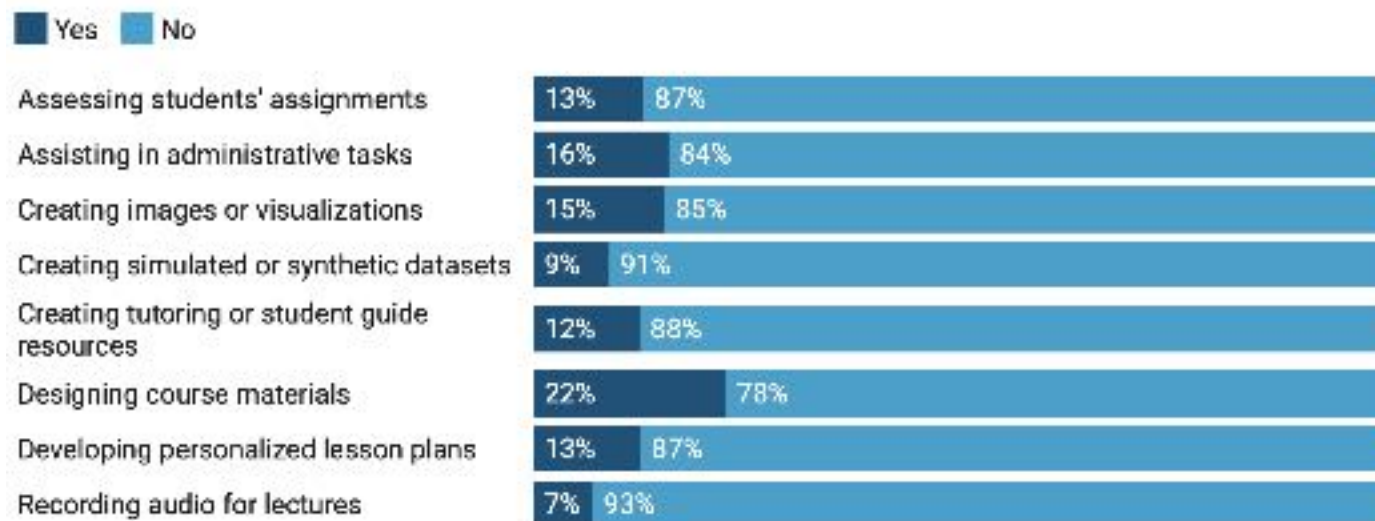
Survey question:

In which of these ways have you yourself engaged with generative AI in your teaching?

My question:

What if anything are you seeing among your teaching colleagues?

Figure 4: In which of the following ways have you yourself engaged with generative AI in your teaching? Percentage of respondents who indicated they have or have not used generative AI for each activity.

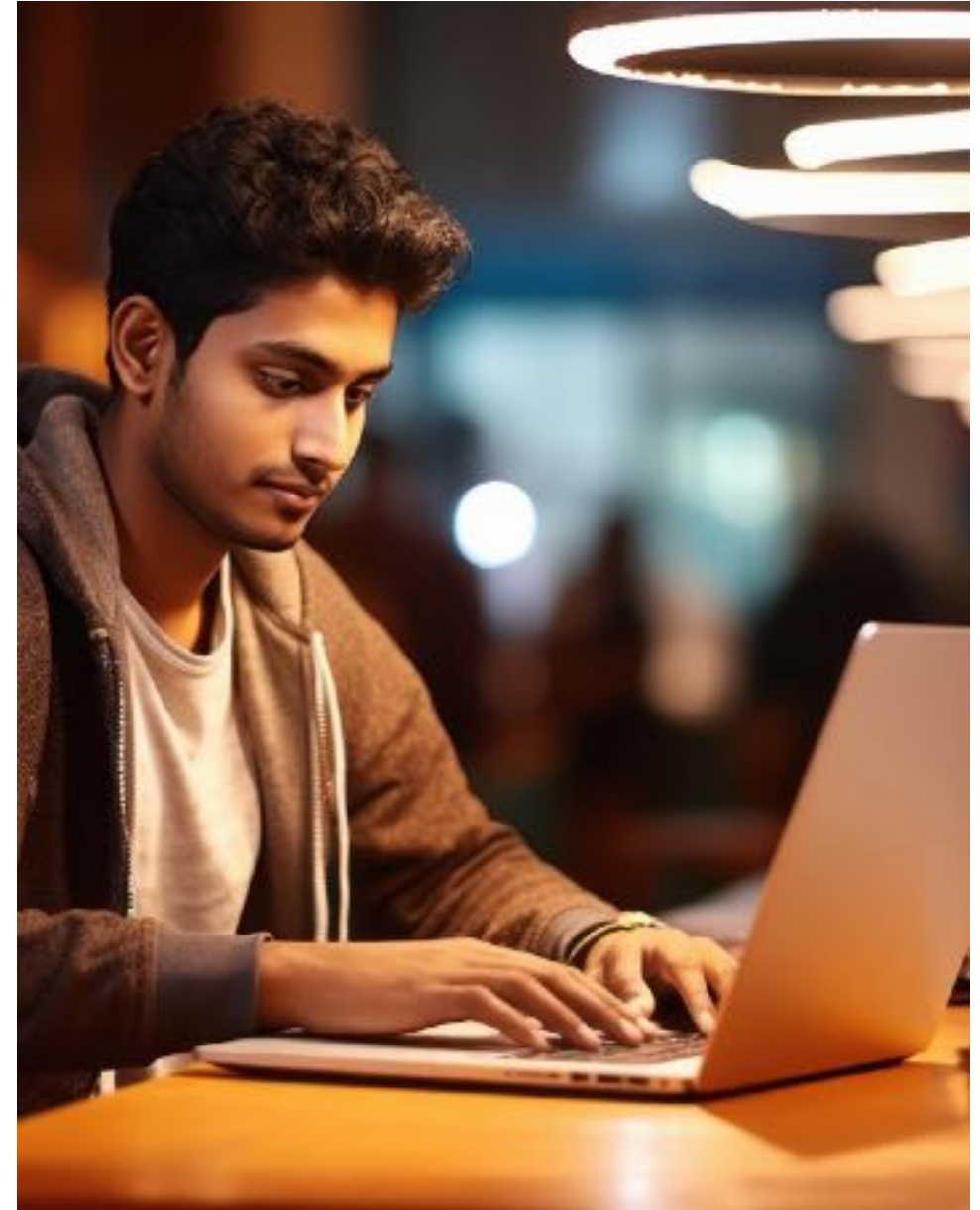


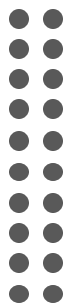
Source: Ithaka S+R • [Get the data](#) • Created with [Datawrapper](#)

Your student's use of genAI

In which of these ways are you encouraging, hearing, and/or seeing students use genAI?

- I do not allow students to use genAI in my course(s)
- Brainstorming ideas
- Drafting and/or editing written assignments
- Creating outlines
- As a study guide
- Conducting research
- Creating multimedia
- Language instruction
- Writing code





Surveyed student use of genAI

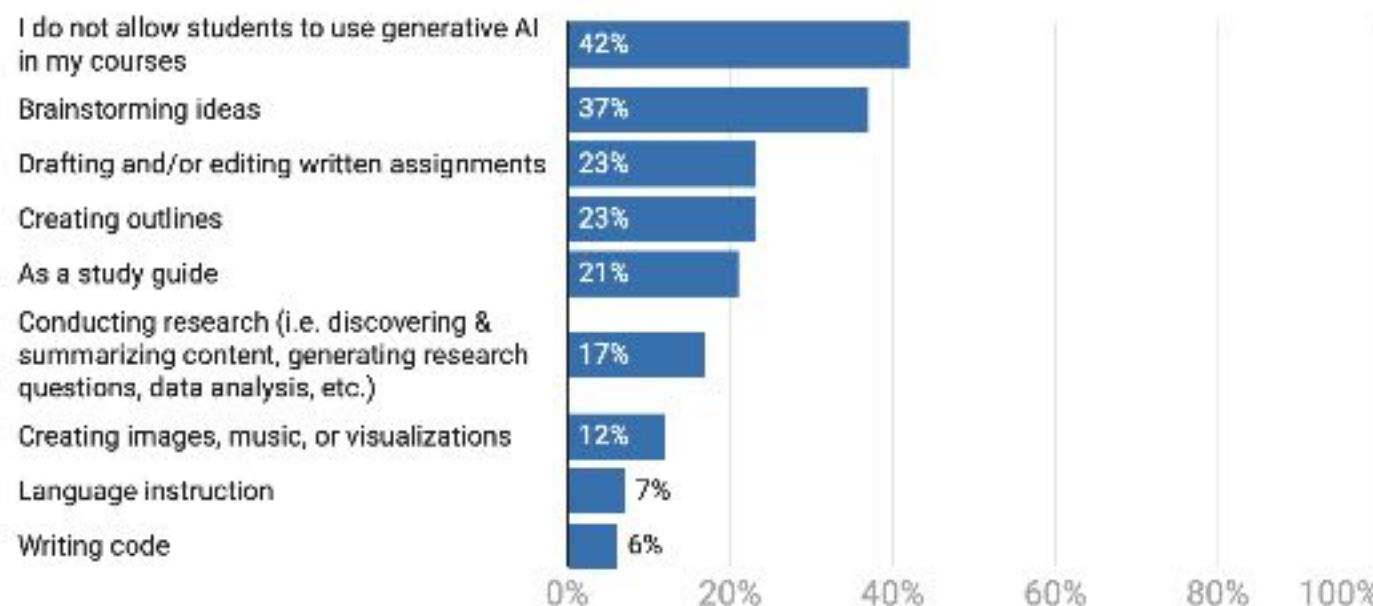
I asked...

In which of these ways are you encouraging, hearing, and/or seeing students use genAI?

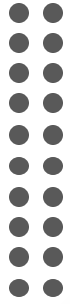
Students are engaging with it, but probably not in the wisest ways.

Figure 7: In which of the following ways have you yourself encouraged or allowed students to use generative AI in your courses? Please select all that apply.

Percentage of respondents who selected each activity.



Source: Ithaka S+R • [Get the data](#) • Created with Datawrapper



A need for AI literacy

"AI literacy [is] a set of competencies that enables individuals to critically evaluate AI technologies; communicate and collaborate effectively with AI; and use AI as a tool online, at home, and in the workplace." (Long and Magerko, 2020)

Long, D., & Magerko, B. (2020, April). What is AI literacy? Competencies and design considerations. In Proceedings of the 2020 CHI conference on human factors in computing systems (pp. 1-16).

What is it?

1. Recognizing AI
2. Understanding intelligence
3. Interdisciplinary
4. General vs. narrow

What can AI do?

5. AI's strength and weaknesses
6. Imagine future AI

How does AI work?

Cognitive systems

7. Representations
8. Decision-making

Machine learning

9. Machine learning steps
10. Human role in AI
11. Data literacy
12. Learning from data
13. Critically interpreting data

Robotics

14. Action and reaction
15. Sensors

How should AI be used?

16. Ethics

How do people perceive AI?

17. Programmability

Start by engaging in prompting/conversation

Or just play with it!

CLEAR prompt framework

University of New Mexico
(2023)

1. Concise
2. Logical
3. Explicit
4. Adaptive
5. Reflective

RTRO prompt framework

Georgetown TLISI (2024)

1. Role
2. Tasks
3. Requirements
4. Output

5 "S" model prompting framework

University of North Carolina
(2024)

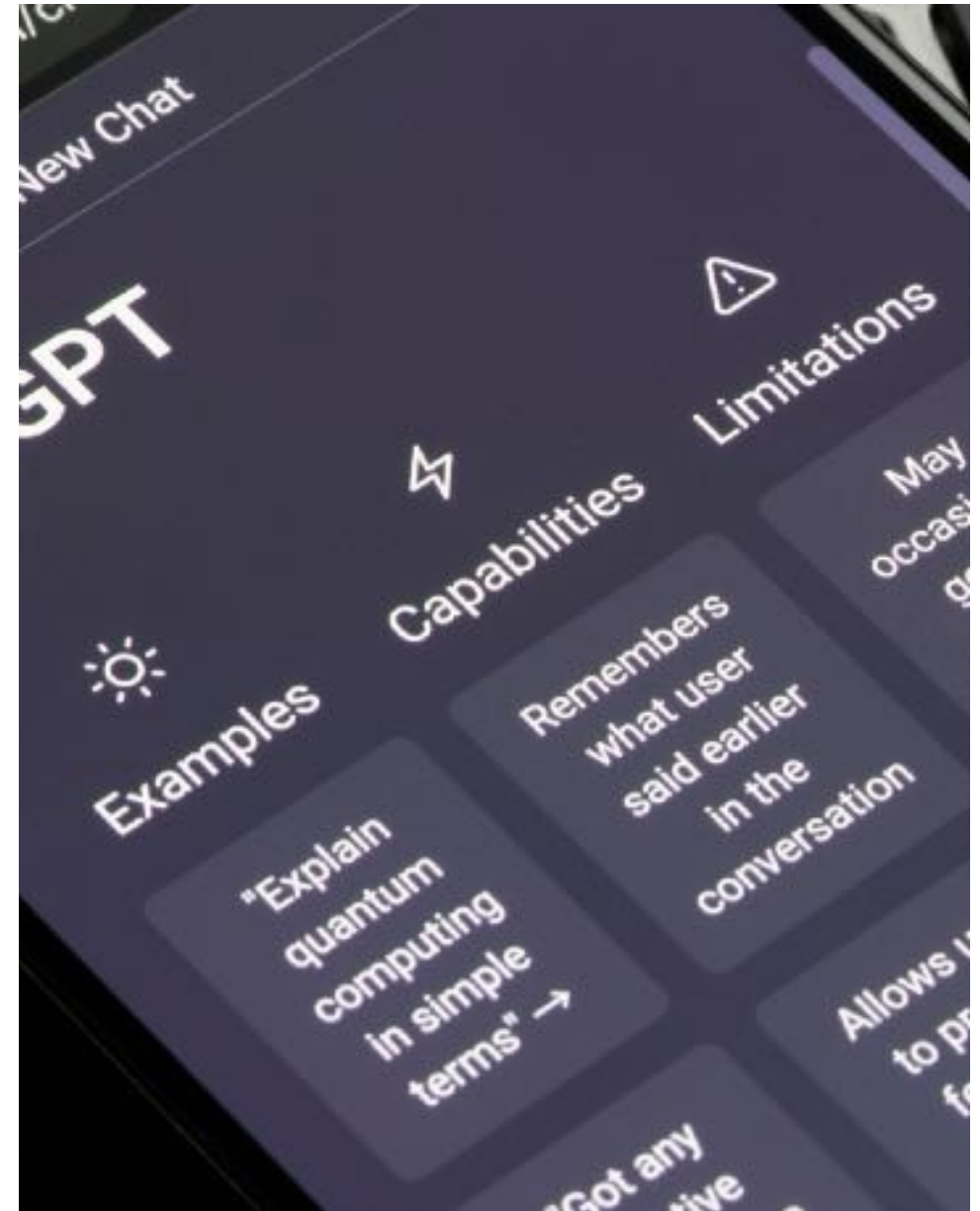
1. SET the scene
2. Be SPECIFIC
3. SIMPLIFY your language
4. STRUCTURE the output
5. SHARE feedback

Part 2: The structure and elements of a prompt

Examining what makes a 'good' prompt and highlighting a tool versus partner approach.

General prompt design guidance

- Do not approach it like a search engine
- Iterate and have a conversation
- Critically assess what you receive for hallucinations and bias
- Experiment on style, tone, structure, context, references to facts, etc.
- *Don't drive yourself crazy looking for a formula*



Generally, there are 7 elements of a prompt

1. Persona [the role]
2. Audience [for whom]
3. Context [situation]
4. Goal
5. Format
6. Output [samples]
7. Blind spots [what AI can't know]



7 elements of a prompt

Persona [the role]

Tool

"You are a university instructor and you are preparing to teach a class."

Partner

"I need you to work with me as a university undergraduate instructor and help me to prepare for an upcoming class."

7 elements of a prompt

Audience [for whom]

Tool

"You are preparing a presentation for undergraduate students."

Partner

"I am preparing a presentation for undergraduate students and need another perspective. I'd like you to give me yours."

7 elements of a prompt

Context [situation]

Tool

"You will be presenting to students in a course that you are currently teaching."

Partner

"I will be presenting new materials to my students and would like some other ideas of how to do it."

7 elements of a prompt

Goal

Tool

"Your course is entitled Learning Technologies for Adult Education and the topic you are preparing for is educational technology. You need to create multiple points and examples for sub-topics 1) analog classrooms, 2) internet and digital learning, and 3) learning with Artificial Intelligence."

Partner

"The class topic this week is educational technology and I'll be raising these sub-topics: 1) analog classrooms, 2) internet and digital learning, and 3) learning with Artificial Intelligence . I need help identifying both 2-3 examples for each sub-topic, as well as outline a linear flow of how I may approach presenting the sub-topics in the order I listed."

7 elements of a prompt

Format

Tool

"You need to present this material in a series of slides. So you should prepare an outline for a slide deck with content for each slide following the given sub-topic order."

Partner

"I am thinking first about presenting this topic and sub-topics with a series of slides. It would be very helpful if you could prepare and outline of 15 slides. For each slide, please include a header and bullets of recommended text content. And if you have an idea for an image, please just describe it in text."

7 elements of a prompt

Output [samples]

Tool

"Take a look at this example [on-screen or uploaded document] use it as a basis for structuring your work."

Partner

"I am sharing with you an example of an outline I've previously used and you may see it as an example of how I am thinking. Feel free to structure differently though."

7 elements of a prompt

Blind spots [what AI can't know]

Tool

“As you prepare the slides, plan for some of the audience to be unable to see colors, needs key points emphasized, and only has 15 people in the audience.”

Partner

“Some things that may be helpful for you to know are that I have 15 people in my class, they tend to request main points highlighted, and at least 1 has a hard time seeing color.”

Part 3: Practice communicating with genAI tools

Exercises prompting with genAI tools.

Let's try some partnering communication/prompting

Recall the 7 elements of a prompt

1. Persona [the role]
2. Audience [for whom]
3. Context [situation]
4. Goal
5. Format
6. Output [samples]
7. Blind spots [what AI can't know]

Practice these guidelines

- Start simple
 - Small questions, then chunk, then multiple parts
- Give instruction
 - Use action verbs, give directions, keywords, and contexts
- Be specific
 - Give details, provide a logical order, expect to be taken literally
- Be precise
 - Be direct, use a casual professional tone
- Say what 'to do'
 - Avoid saying what 'not to do', ask it to ask you

Example: Start simple

(ChatGPT, temp)

Tell me something interesting about
Washington D.C.

Tell me about historical places,
universities, annual social events, and
popular sites around Washington D.C.

Example: Give instruction

(ChatGPT, temp)

Please give me a presentation outline on the relationship between unemployment and inflation.

Please give me a presentation outline with key points and supporting text that explains the relationship between unemployment and inflation.

Example: Be specific

(ChatGPT, temp)

I am preparing to teach students about climate change. What are some key points I should raise?

I am preparing to teach undergraduate computer science students about the challenges technology advancement may face with climate change. What are some key points I should raise?

Example: Be precise

(ChatGPT, temp)

Please explain the field of meteorology.
Keep your explanation short and only
provide a few sentences.

Please explain within a single
paragraph of 4-5 sentences, the field of
meteorology to a high school student
who is beginning to learn about the
subject.

Example: Say what 'to do'

(ChatGPT, temp)

I'm starting studies this academic term towards an undergraduate economics degree. I'd like recommendations on what I should study and what are some good research topics. Please do not ask details about me or my interests.

I'm starting studies this academic term towards an undergraduate economics degree and I'm looking for ideas on how to focus my studies and discover good research topics. I'd like you to ask me a series of questions about my studies and interests, and when you feel you have enough information about me, give me your recommendations for study and research topics. I'm ready for your first question.

General search

Lite – Google

Impacts of the COVID-19 pandemic on US universities from 2020-2023.

Depth – Perplexity (Pro)

I am exploring the impacts of COVID-19 on the US economy from 2020-2023. For now, I'm focusing on US universities. As I'm just getting started, can you please help me identify how the COVID-19 pandemic affected US universities in terms of enrollments, finances, and online learning?

Images

Traditional – Google

university students in the US arriving to an in-person class inside of a lecture hall at the start of the term

Same used >>>

Generative – Adobe Firefly



Images

Traditional – Google

SLP helping child with cerebral palsy and jaw instability

Same used >>>

Generative – MS Copilot Designer



In conclusion:

Feel free to contact me at jason_torres@gwu.edu
and/or the Instructional Core at instructioncore@gwu.edu