Prompting for Educators: Effective Communication with AI

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Disclosures

None

Objectives

1. Apply effective prompting frameworks (e.g., TRACI) to interact with AI tools.
2. Identify factors that influence AI output quality, such as bias and data input quality.
3. Develop refined prompts to achieve task-specific outputs.
4. Recognize ethical risks such as AI-generated misinformation and biased content (next month)

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Upcoming Sessions

- Evaluating AI Outputs: Ensuring Accuracy and Relevance (July 17)
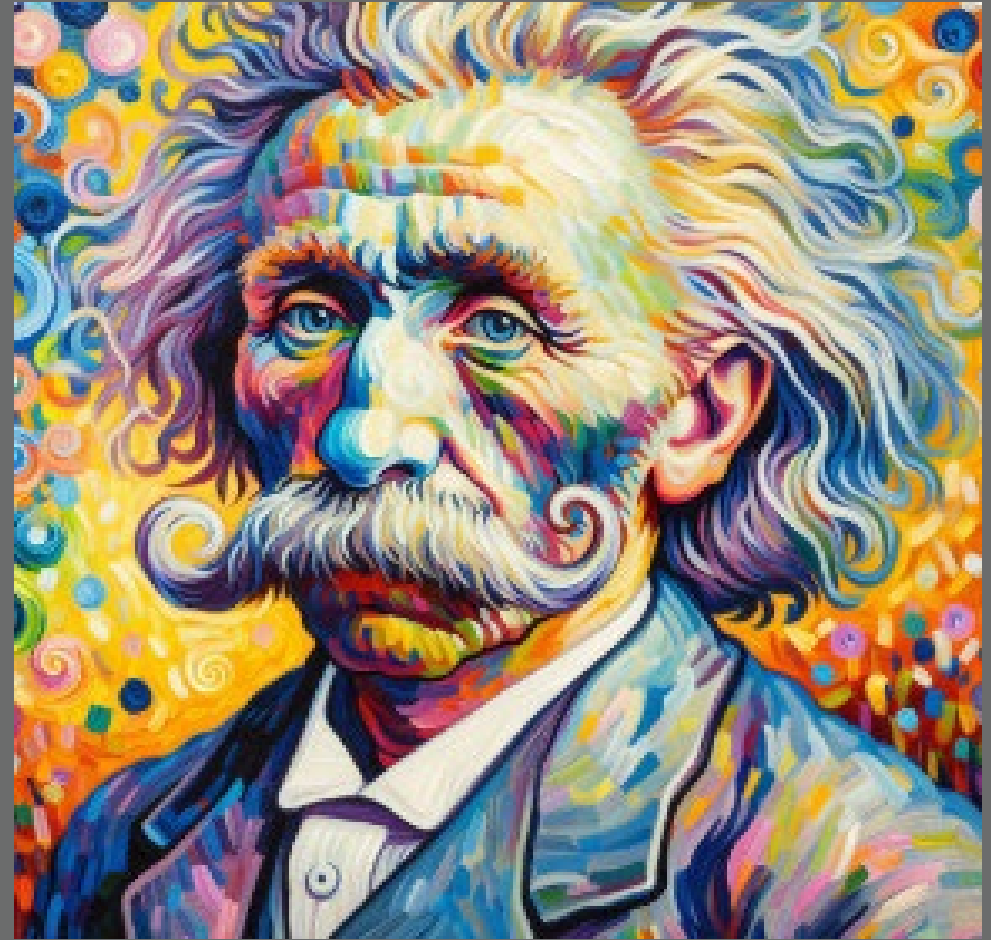- AI for Efficiency and Automation (August 21)

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Self-Assessment Survey

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Prompting

Prompting

"If I were given one hour to save the planet, I would spend 59 minutes defining the problem and one minute resolving it," - Albert Einstein

Create an abstract painting of an older man with long frizzy hair and a big handlebar mustache in the style of van Gogh

Why is Effective Prompting Important?

- Efficiency
- Energy Conscious
- Getting the best possible outputs
- Remember – you are teaching the AI

AI is about communication. You need to understand your problem really well. Then, develop a well - thought -out prompt to start the conversation.

Google

see one, d

see one do one teach one origin

see one do one teach one

The saying "see one, do one, teach one" originated as a clinical education method, popularized by William Stewart Halsted in the late 19th century, during the early days of surgical training in the United States. Halsted, the first Chief of Surgery at Johns Hopkins Hospital, ...

How to Prompt

TRACI Framework for Prompting

Context

- **TASK** refers to general type of output that the prompt should achieve
- **ROLE** refers to the title or persona of the 'person' who will present the response
- **AUDIENCE** refers to the title or persona of the 'person' who the response is designed to reach.
- **CREATE** provides clear instructions about desired format of the response.
- **INTENT** indicates the overall intention or purpose of the prompt

Reference: https://structuredprompt.com

Prompt: **You are a medical educator.** **Write a short 5-sentence email** **to medical students** **orienting them to your course.** **The email should have 3 learning goals that include professionalism, engagement, and a growth mindset.**

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Output

Subject: Welcome to the Course – Let's Begin Our Journey Together

Dear Students,

Welcome to our course! This semester, we'll focus on three key goals: developing professionalism in all interactions, staying actively engaged in both clinical and classroom settings, and embracing a growth mindset as we navigate challenges together. I encourage you to ask questions, support one another, and reflect often on your progress. Please review the syllabus before our first session, and don't hesitate to reach out with any questions. I'm excited to learn with you and support your journey into medicine.

Warmly,

[Your Name]
Course Director

That is a great start! Can you change the tone to make it more hip and funny?

Subject: Welcome to the Course – Let's Get Nerdy (in a Cool Way)

Hey future doctors,
Welcome aboard! This course is all about leveling up your professionalism (yes, that includes replying to emails), staying engaged (no ghosting during small group discussions), and rocking a growth mindset (mistakes = learning, not doom). We'll laugh, we'll learn, and we'll probably mispronounce a few Latin terms along the way. Check out the syllabus before we kick things off, and bring your curiosity, your questions, and maybe a snack—because learning is better when you're not hangry.

Catch you soon,
[Your Name]
Your Friendly Course Director (and occasional pun enthusiast)

Would you like me to tailor this even more to your specialty (e.g., anatomy, internal medicine, psychiatry)? Or add a meme or GIF suggestion to go with it?

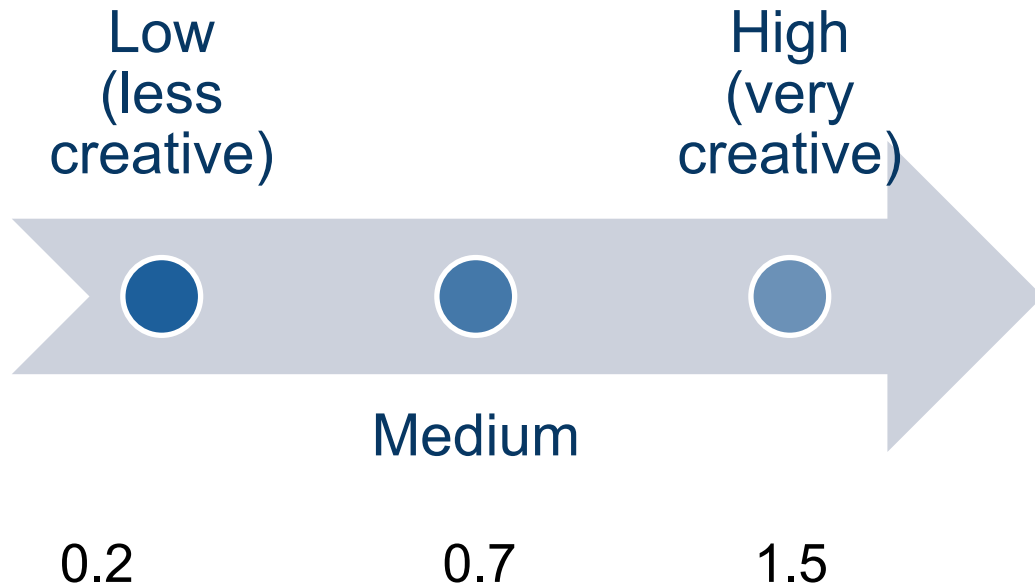# Other Ways to Guide Prompting

- **Guiding Prompt Language**
  - "Before you start, ask me questions to make sure your response is more helpful."
  - "Go slowly and think step by step." (Chain of Thought Prompting - if you want to see the AI thought process)
  - "I want to create X, ask me questions to get the information you need in order to create it." (e.g. I need a website reference in AMA format)
  - "Give me a bunch of plausible answers" (Brainstorming). Instead of "Give me the correct answer" (like Googling).

- **In-Context Learning:** Give it a template or an example based on the type of output you want

- **Prioritize/Sequence**: Use a numbered list/steps/markdown language in your prompt (AI doesn't understand bold or large font as more important

- **Grounding**: Upload documents for it to use or analyze (grounding, data, examples)

Temperature

Low (less creative)

High (very creative)

Medium

0.2   0.7   1.5

GenAI Platforms: Default Temperatures

Platform	Temperature	Best Uses
ChatGPT	Medium	Summarizing
Claude	High	Creative writing
Copilot	Medium	Generating ideas
Gemini	Low	Accurately answering questions
Open Evidence	N/A	—
Notebook LM	N/A	—

Developing Prompting Competency

You are a Clinician Educator. Develop ideas for 5 cases you could use to teach groups of learners that include medical students (novices), interns (advanced beginners) , and residents (competent). The cases should align with Pangaro's RIME model and encourage the development of clinical reasoning skills.

Sure! Here are five cases designed to align with Pangaro's RIME model (Reporter, Interpreter, Manager, Educator) and encourage the development of clinical reasoning skills:

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Case 1:Chest Pain in the Emergency Department

- **Scenario: 54-year-old male with sudden onset chest pain.**
- **Objectives:**
  - Reporter (Medical Students):
    - Gather a focused history (OPQRST) and physical exam.
    - Identify red flags (e.g., diaphoresis, radiation to arm/jaw).
  - Interpreter (Interns):
    - Generate a differential diagnosis (ACS, PE, aortic dissection, GERD).
    - Interpret ECG and initial troponin.
  - Manager (Residents):
    - Initiate management (MONA, cardiology consult).
    - Decide on admission vs. discharge.
  - Educator (All levels):
    - Discuss pathophysiology of ACS.
    - Teach junior learners about risk stratification tools (e.g., HEART score).
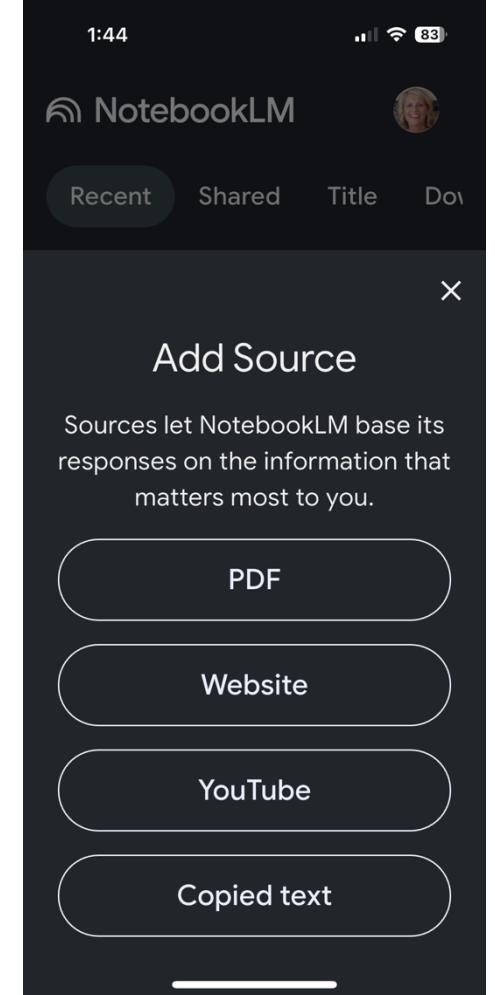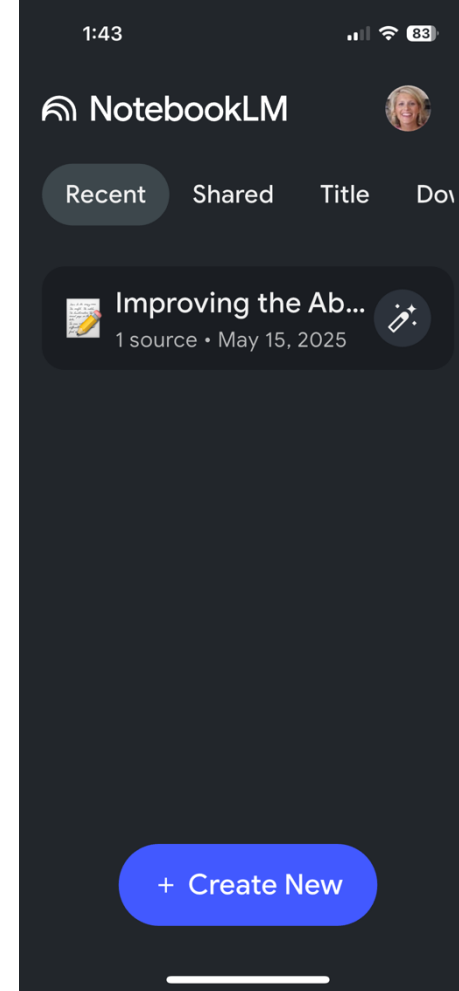
Refine the Prompt

How would you change the prompt to...
- Improve the cases
- Engage learners
- Measure entrustability
- Mitigate bias

Notebook LM Prompting

- What is it?
- How does it work?
- Features
- Use cases
- Sharing

Podcast Feature!

NotebookLM

1:43

NotebookLM

Recent   Shared   Title   Dov

📝 Improving the Ab...
1 source • May 15, 2025

+ Create New

1:44

NotebookLM

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✕

Add Source

Sources let NotebookLM base its responses on the information that matters most to you.

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OpenEvidence®

Ask a medical question...

- What is it?
- What you can use it for
- Demonstration for prompting

Genetic Counseling MCQ Prompt

You are a genetic counseling educator. Create 5 multiple choice questions that could be used to quiz genetic counseling graduate students on the most common types of cases genetic counselors engage with. Provide the rationale for why each response is right or wrong.

1. **A 35-year-old woman with a family history of early -onset breast cancer in her mother and maternal aunt seeks genetic counseling. Which of the following is the most appropriate next step?**

A. Order BRCA1/2 testing for the patient immediately
B. Refer the patient for genetic counseling and risk assessment
C. Test the unaffected father for BRCA1/2 mutations
D. Reassure the patient that no further action is needed

Correct answer: B
- Rationale: The American College of Medical Genetics and Genomics and the National Society of Genetic Counselors recommend referral for genetic counseling and risk assessment in individuals with a family history suggestive of hereditary cancer syndromes. Testing should ideally begin with an affected family member if available, not the unaffected individual.[1-2]
- A is incorrect because testing should start with an affected relative. C is incorrect because the father is not on the affected side. D is incorrect as the family history warrants further evaluation.

2. Which of the following is the most common indication for pediatric genetic counseling?

A. Adult-onset cancer risk

B. Carrier screening for cystic fibrosis

C. Evaluation of developmental delay or congenital anomalies

D. Predictive testing for Huntington disease

Correct answer: C

- Rationale: Pediatric genetic counseling most commonly addresses evaluation of developmental delay, intellectual disability, or congenital anomalies, as these are frequent reasons for referral in children.[3]
- A is incorrect as adult-onset cancer risk is not a pediatric indication. B is common but less frequent than evaluation for developmental issues. D is rare in pediatrics.

3. A couple presents for preconception counseling due to a family history of cystic fibrosis. What is the most appropriate counseling point?

A. Cystic fibrosis is inherited in an autosomal dominant manner

B. Only one partner needs to be a carrier for the child to be at risk

C. Both partners should undergo carrier screening

D. Carrier screening is not recommended if there is no family history

Correct answer: C

- Rationale: Cystic fibrosis is autosomal recessive; both partners should be screened to assess reproductive risk.[3-4]
- A is incorrect; CF is not autosomal dominant. B is incorrect; both must be carriers for risk. D is incorrect; carrier screening is recommended even without family history.

4. In the context of hereditary cancer syndromes, which of the following family histories most strongly suggests referral for genetic counseling?

A. One second-degree relative with colon cancer at age 75
B. Two first-degree relatives with breast cancer, one diagnosed at age 42
C. One first-degree relative with prostate cancer at age 68
D. No family history of cancer

Correct answer: B

- Rationale: The American College of Medical Genetics and Genomics and the National Society of Genetic Counselors recommend referral when there are multiple affected relatives, especially with early-onset disease.[1-2]
- A and C are less suggestive due to age and cancer type. D is not an indication.

5. Which of the following is a key component of the genetic counseling process for BRCA1/2 testing, as outlined by the United States Preventive Services Task Force?

A. A) Only providing test results

B. B) Detailed kindred analysis and risk assessment

C. C) Recommending prophylactic surgery for all patients

D. D) Skipping pre-test education if the patient requests testing

Correct answer: B

- Rationale: The United States Preventive Services Task Force emphasizes detailed family history analysis, risk assessment, education, and discussion of benefits/harms as essential components of genetic counseling for BRCA1/2.[5]

- A is insufficient. C is not universally recommended. D is inappropriate; pre-test education is essential.

References

1. A Practice Guideline From the American College of Medical Genetics and Genomics and the National Society of Genetic Counselors: Referral Indications for Cancer Predisposition Assessment. Hampel H, Bennett RL, Buchanan A, Pearlman R, Wiesner GL. Genetics in Medicine : Official Journal of the American College of Medical Genetics. 2015;17(1):70-87. doi:10.1038/gim.2014.147.
2. Hereditary Cancer Syndromes and Risk Assessment. Lee-may Chen, Susan Modesitt
3. Bridging the Gap Between Scientific Advancement and Real-World Application: Pediatric Genetic Counseling for Common Syndromes and Single-Gene Disorders. McGlynn JA, Langfelder-Schwind E. Cold Spring Harbor Perspectives in Medicine. 2020;10(10):a036640. doi:10.1101/cshperspect.a036640.
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Follow Up Questions

The Future of Prompting

- As AI gets more intelligent how will that change the way we prompt?

- How will we communicate with AI in the future of medical education?

Questions?

Resource Website

Session Evaluation

The College of Human Medicine Office of CME designates this event for a maximum of 1 *AMA PRA Category 1 Credit(s)™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

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CME ACTIVITY INFORMATION

Activity Name: Enduring: Prompt Engineering for Educators: Effective Communication with AI

Date: July 10, 2025 – May 14, 2028

Activity Code: 94987

Speaker Name: Larry Hurtubise, PhD; Stacey Pylman, PhD; Emily Rush, PhD

Target Audience: Regional physicians, residents, students, faculty

Learning Objectives: *at the conclusion of this educational activity, learners will be able to:*
Objective 1: Apply effective prompting frameworks (e.g., TRACI) to interact with AI tools.
Objective 2: Identify factors that influence AI output quality, such as bias and data input quality.
Objective 3: Develop refined prompts to achieve task-specific outputs.
Objective 4: Recognize ethical risks such as AI-generated misinformation and biased content.

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Summary of Financial Disclosures:
All planners, reviewers, faculty presenters have nothing to disclose.

Commercial Support Disclosure:
No commercial support was provided for this CME activity

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