Artificially Intelligent? Coaching Student Judgement and Integrity in the Age of AI

Kunal Amin, PharmD, BSPS
President, NEOvations Pharmacy Services
Assistant Director of Experiential Education
Associate Professor of Pharmacy Practice
NEOMED College of Pharmacy

Lukas Everly, PharmD, BCPS
Director of Experiential Education
Associate Professor of Pharmacy Practice
NEOMED College of Pharmacy

Zach Jenkins, PharmD, BCPS
Director of Advanced Pharmacy Practice Experiences
Professor of Pharmacy Practice
Cedarville University School of Pharmacy

Pharmacy Forward: Advancing Practice for a Healthier Tomorrow!

OPA Annual Conference & Trade Show April 9-11, 2026

OHIO PHARMACISTS ASSOCIATION

Disclosure Statement

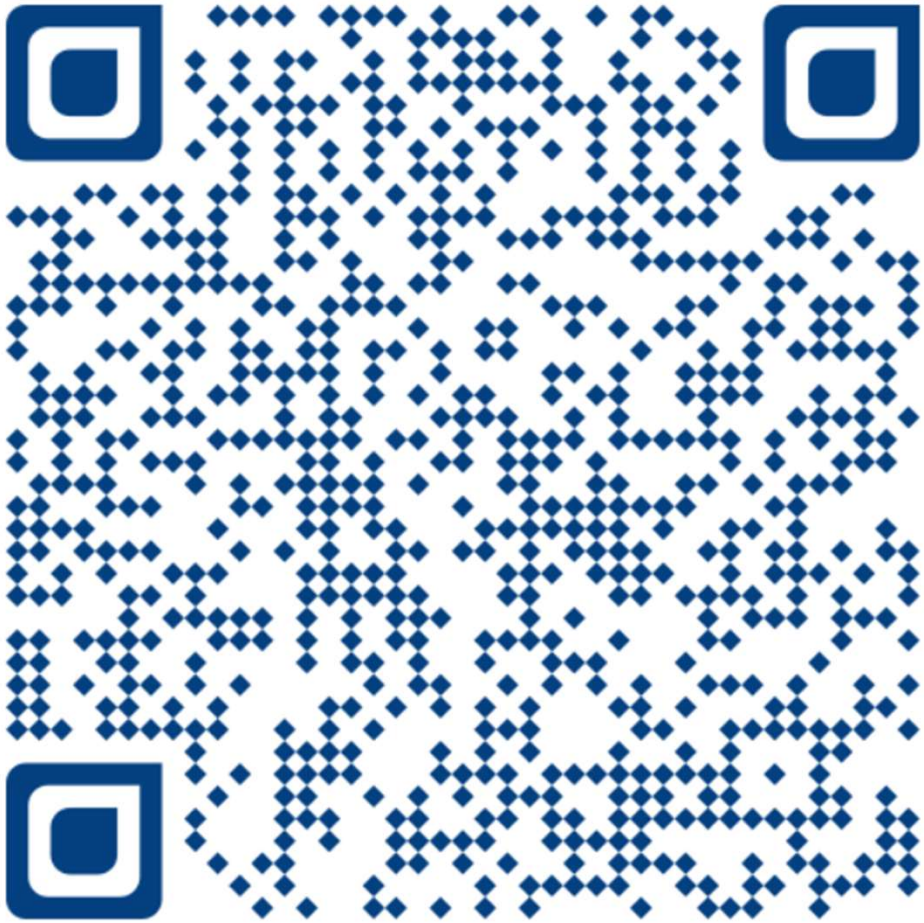
- Kunal Amin, Lukas Everly, and Zach Jenkins have no relevant financial relationship(s) with ineligible companies to disclose.
  and
- None of the planners for this activity have relevant financial relationships with ineligible companies to disclose.

Learning Objectives

At the completion of this activity, the participant will be able to:

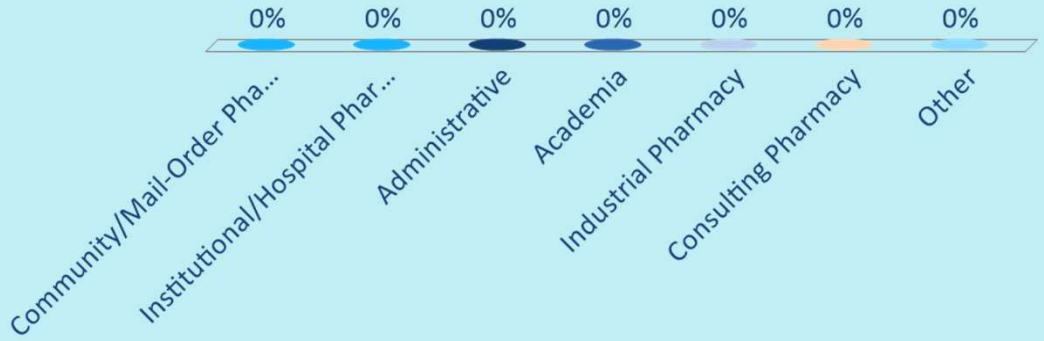
1. Identify common applications and emerging concerns related to the use of artificial intelligence (AI) in pharmacy practice and experiential education
2. Evaluate ethical, legal, and professional considerations when students and preceptors utilize AI tools during rotations
3. Apply strategies to guide student use of AI in a way that promotes critical thinking, academic integrity, and appropriate clinical decision-making

Session ID:
PharmAI



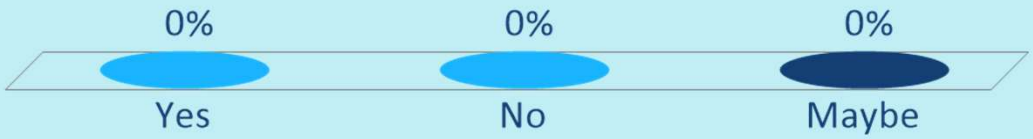
Which of the following describes your practice *role* most accurately?

A. Community/Mail-Order Pharmacy
B. Institutional/Hospital Pharmacy
C. Administrative
D. Academia
E. Industrial Pharmacy
F. Consulting Pharmacy
G. Other



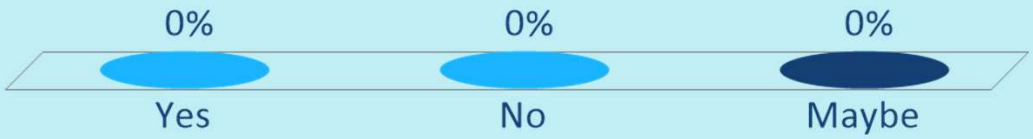
Should AI be used in pharmacy practice for clinical interventions?

A. Yes
B. No
C. Maybe



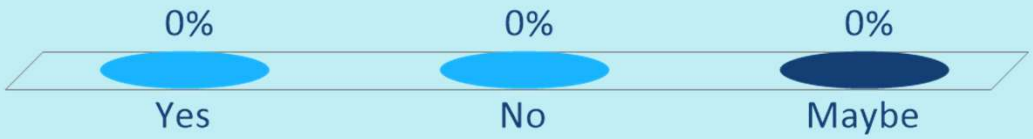
Should AI be used in pharmacy practice for administrative tasks?

A. Yes
B. No
C. Maybe



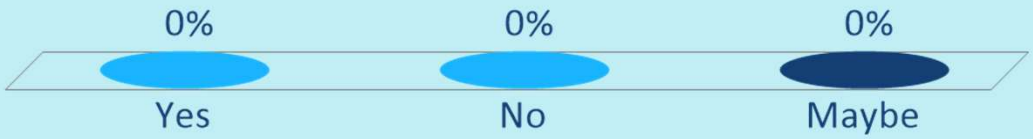
Should AI be used in pharmacy practice to provide educational instruction?

A. Yes
B. No
C. Maybe



Should AI be used in pharmacy practice by pharmacy students on experiential rotations?

A. Yes
B. No
C. Maybe



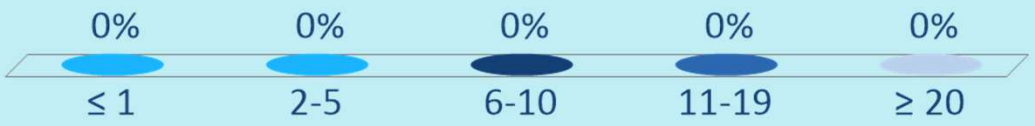
How many times have you used AI in your ***practice setting*** as an assistant for a task/role in the past month?

Which AI platforms have you used in the past 12 months for ***work related*** tasks?

A. ChatGPT
B. Google Gemini
C. Microsoft Copilot
D. Grok AI
E. Perplexity AI
F. Anthropic (Claude)
G. Open Evidence
H. Other

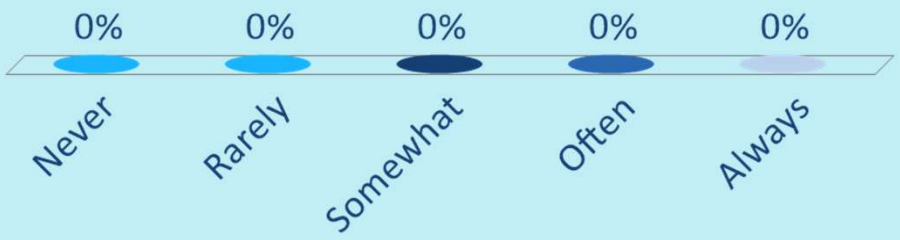
How many students have you precepted in the past 12 months?

A. ≤ 1
B. 2-5
C. 6-10
D. 11-19
E. ≥ 20



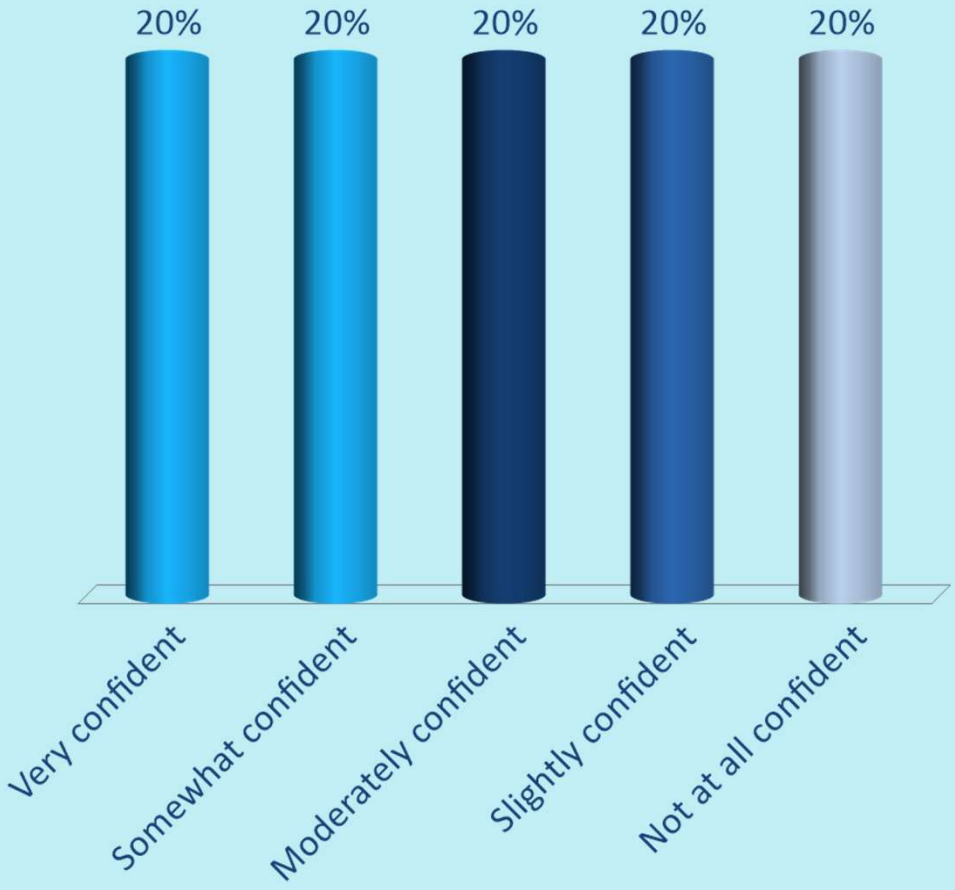
How often have you suspected students to have turned in an AI generated assignment/project in the past 12 months?

A. Never
B. Rarely
C. Somewhat
D. Often
E. Always



How confident are you in allowing students utilize AI in experiential education?

A. Very confident
B. Somewhat confident
C. Moderately confident
D. Slightly confident
E. Not at all confident



DID I JUST LOOSE MY POSITION TO AI?

Understanding Artificial Intelligence

- Artificial Intelligence is defined as the science and engineering of creating intelligent machines, particularly intelligent computer programs, capable of performing tasks typically requiring human intelligence, such as reasoning, learning, and problem-solving[1].

- ChatGPT Definition = computer systems performing tasks that typically require human intelligence

- Google Gemini =
  - Artificial Intelligence is a field of computer science that focuses on creating systems capable of performing tasks that typically require human intelligence. These tasks include pattern recognition, complex decision-making, natural language understanding, and learning from experience.

1. Ng, D. T., Leung, J. K., Chu, S. K., & Qiao, M. S. (2021). Conceptualizing ai literacy: An exploratory review. *Computers and Education: Artificial Intelligence*, *2*, 100041. https://doi.org/10.1016/j.caeai.2021.100041

Understanding Artificial Intelligence

- 3 Basic Categories
  - Machine Learning (ML)
  - Natural Language Processing (NLP)
  - Generative AI

1. Ng, D. T., Leung, J. K., Chu, S. K., & Qiao, M. S. (2021). Conceptualizing ai literacy: An exploratory review. *Computers and Education: Artificial Intelligence*, *2*, 100041. https://doi.org/10.1016/j.caeai.2021.100041

Understanding Artificial Intelligence

Machine Learning	Natural Language Processing	Generative AI
Learning from data to predict	**Understanding and processing human language**	**Creating new content**
	Examples	
Forecasting inventory	Pulling medications from prescriber notes	Ambient listening and generative documentation
Predicting readmission risk	Calculating days supply based on Qty/SIG	Auto generate medication order for e-prescriptions
Inferred DUR based on med history	Identifying patient risk and ADEs based on current PHI	Refill authorizations and denial based on past and current PHI

Common Applications in Pharmacy

Practice Setting

- Clinical Decision Support
- Automated Dispensing
- Ambient Scribing/ Documentation
- Supply Chain Logistics/ Inventory
- Patient Counseling
- Drug Utilization Reviews
- Prior-Authorizations

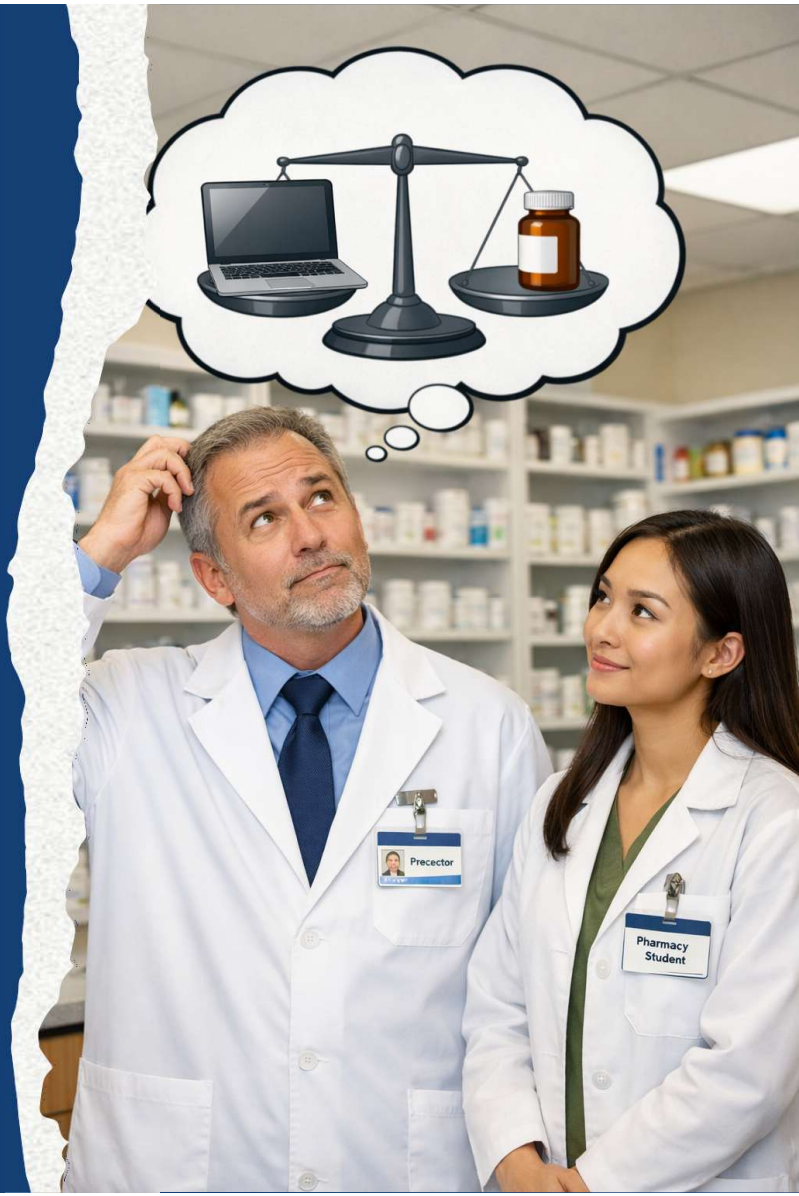
Experiential Education

- Simulate Learning
- Syllabus Creation
- Personalize Study Plans
- Summarize Clinical Trials (JC)
- Summarize SOAP notes/ Documentation

Emerging Challenges

Challenges	Description
Algorithmic Inaccuracy or Bias	If AI is trained on data from misinformation the result is going to be inaccurate or less accurate
AI Hallucination	Language Learning Models (LLMs) can often create or blurt our “fake” citations
Information Lag	AI models can have mismatch in current information based on the age of data
Thinking Gap & Skill Erosion	Over-reliance on AI platforms for clinical decisions can lead to skill deterioration and critical thinking development
Data Privacy **(HIPAA)!!!**	Risk of entering PHI into open-code and non-secure AI tools can lead to lawsuits

WHO EVEN OVERSEES AI IN HEALTHCARE?



JAMA. 2025 March; 333;(20):1769-1770.

Regulatory Pitfalls of AI in Healthcare

Federal Regulation:

Largely reduced with remaining focus falling upon FDA

AI vs Workflow:

Deployment level oversight aligns with how CMS currently operates

State Level Regulation:

Wide variability and often focused on transparency or single applications (HB 524, SB 164)

Private Contracting :

End user agreements, licensing contracts, and terms of use may circumvent accountability

Risk vs. Benefit of AI

An intentional assessment for integration

Artificial Intelligence-enabled medical devices (AIMDs):

Of 950 AIMDs, 6.3% were associated with a recall, with a mean recall per device of 3.0

JAMA. 2025 August; 2025;6;(8):e253172.

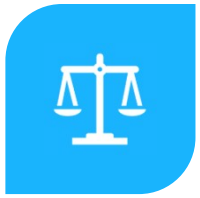
Hallucination vs Training Error:

Med-Gemini references CT images of "basilar ganglia" in paper.

How can we interpret this error?

https://arxiv.org/pdf/2405.03162

Ethical Principles



JUSTICE & FAIRNESS

TRANSPARENCY

CONSENT & CONFIDENTIALITY

ACCOUNTABILITY

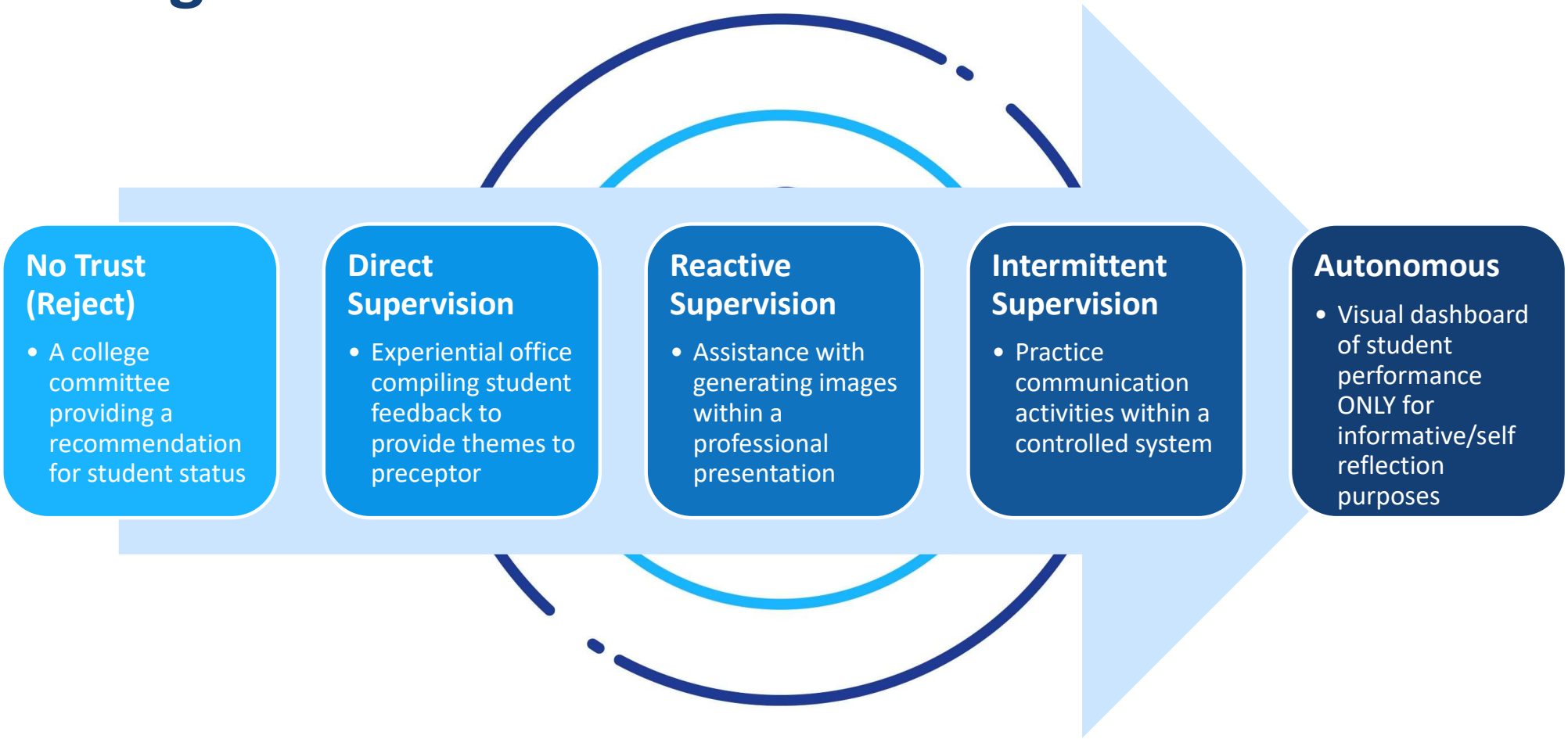
EQUITABLE CARE

Entrustment Framework for AI use in Education : *Trustworthiness*

Principle	Example
1. Ability	Was the AI developed with domain specific knowledge? How is validity, reliability, and generalizability measured?
2. Integrity	How transparent is the system on its process? Can the AI cite its sources and avoid injecting modifications? Is the AI able to state its level of confidence/certainty?
3. Benevolence	Does the AI maintain ethical principles? • Beneficence • Justice • Autonomy • Non-maleficence • Accountability

Academic Medicine. 2025 March 100(3).

Scaling entrustment



Academic Medicine. 2025 March 100(3).

Program Policy on Artificial Intelligence in Experiential Education

Preceptors assume that work submitted by students – including process work, drafts, brainstorming artifacts, and final works – will be generated by the students themselves, working individually or in groups as directed by the preceptor. This policy indicates the following constitute academic dishonesty: a student has another person/entity do the work of any substantive portion of an assignment for them, which includes purchasing work from a company, hiring a person or company to complete an assignment or exam, and/or using generative AI tools (such as ChatGPT).

1. The preceptor has the sole authority to determine if any submitted work is acceptable or in violation of this policy.
2. Students shall **NOT** use generative AI tools during assignments unless explicitly permitted and instructed by the preceptor. Such permission must be granted in advance of the use of generative AI. If permitted, students may use AI to generate ideas, questions, or summaries that they then revise, expand, or cite properly. Students should be aware of the potential benefits and limitations of using AI as a tool for learning and research. The use of AI without critical thinking stunts growth and can even lead to patient harm. AI systems can provide helpful information or suggestions, but they are not always reliable or accurate. Students should critically evaluate the sources, methods, and outputs of AI systems.
    1. The use of generative AI tools without permission by the preceptor on any given assignment will be considered in violation of the Academic Integrity Pledge.
    2. If generative AI tools are permitted for use by the preceptor, students shall give credit to AI tools whenever used, even if only to generate ideas rather than usable text or illustrations. When using AI tools on assignments, students must add an appendix showing:
        1. The entire exchange, highlighting the most relevant sections.
        2. The description of precisely which AI tools were used (e.g. ChatGPT private subscription version or DALL-E free version)
        3. An explanation of how the AI tools were used (e.g. to generate ideas, turns of phrase, elements of text, long stretches of text, lines of argument, pieces of evidence, maps of the conceptual territory, illustrations of key concepts, etc.)
        4. An account of why AI tools were used (e.g. to save time, to surmount writer's block, to stimulate thinking, to handle mounting stress, to clarify prose, to translate text, to experiment for fun, etc.)

"AI will not replace you. A person using AI might."

HOPE IN THE BOTTOM OF THE BOX?

Teaching Judgment in the AI Age

“My student’s introductory letter seemed very AI generated. I ran this information through an AI detector, and it said there was a high likelihood that this was the case. It appears unprofessional. They would have benefited from using AI to edit their CV…”

Preceptor Considerations for AI Use

Does your **institution have a policy**?

→

Does the **school have a policy**?

→

Are you **experienced** with using AI?

↓

Are there AI **platforms** that you prefer?

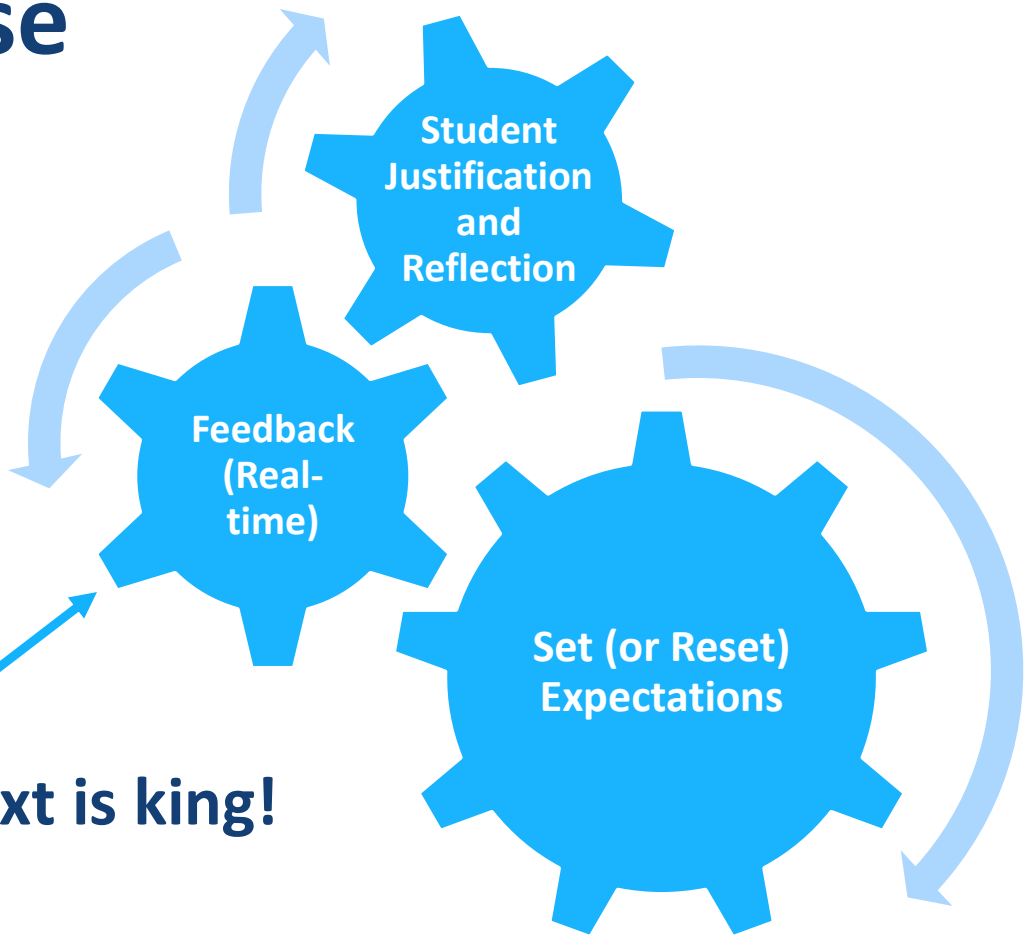
→

What **tasks** do you believe are appropriate for AI?

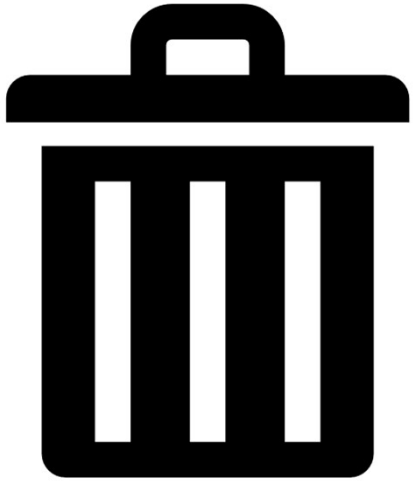
→

How do you want learners to **notify** you about AI use?

Guiding AI Use



Remember: context is king!



Trash in = Trash Out

Trust but Verify Framework

Verify Authenticity:

- Require students to provide the primary literature link for every claim an AI makes

Produce:

- Have students produce their prompt(s) and interactions for your analysis

Check Parameters:

- Determine if use case is within your restrictions (e.g., refining an educational newsletter vs. auto-generating one)

Check Integrity:

- Ensure that student is aware of data security, privacy concerns, algorithmic bias, and copyright (where appropriate)

How to Cite AI Use (Current Suggestions)

Must **explain in-text** that you have used AI and **provide a citation**

In-Text Example:

ChatGPT[1] was utilized to generate background research for this journal club, which was then checked for quality and corrected, as necessary.

Citation Example:

1. *ChatGPT*. Version Jan 30. OpenAI; 2026. Accessed Jan 30, 2026. https://openai.com/

Prompt Engineering Student Guidance

Treat AI generated output like a **first stop** resource

…**NOT** final

AI generated output must always be **double checked**

Different LLMs may yield different results – **experiment and iterate**

Check for **quality**: factual accuracy, clarity, consistency, audience, helpfulness

Encourage AI to **"show it's work"** to better understand its processes

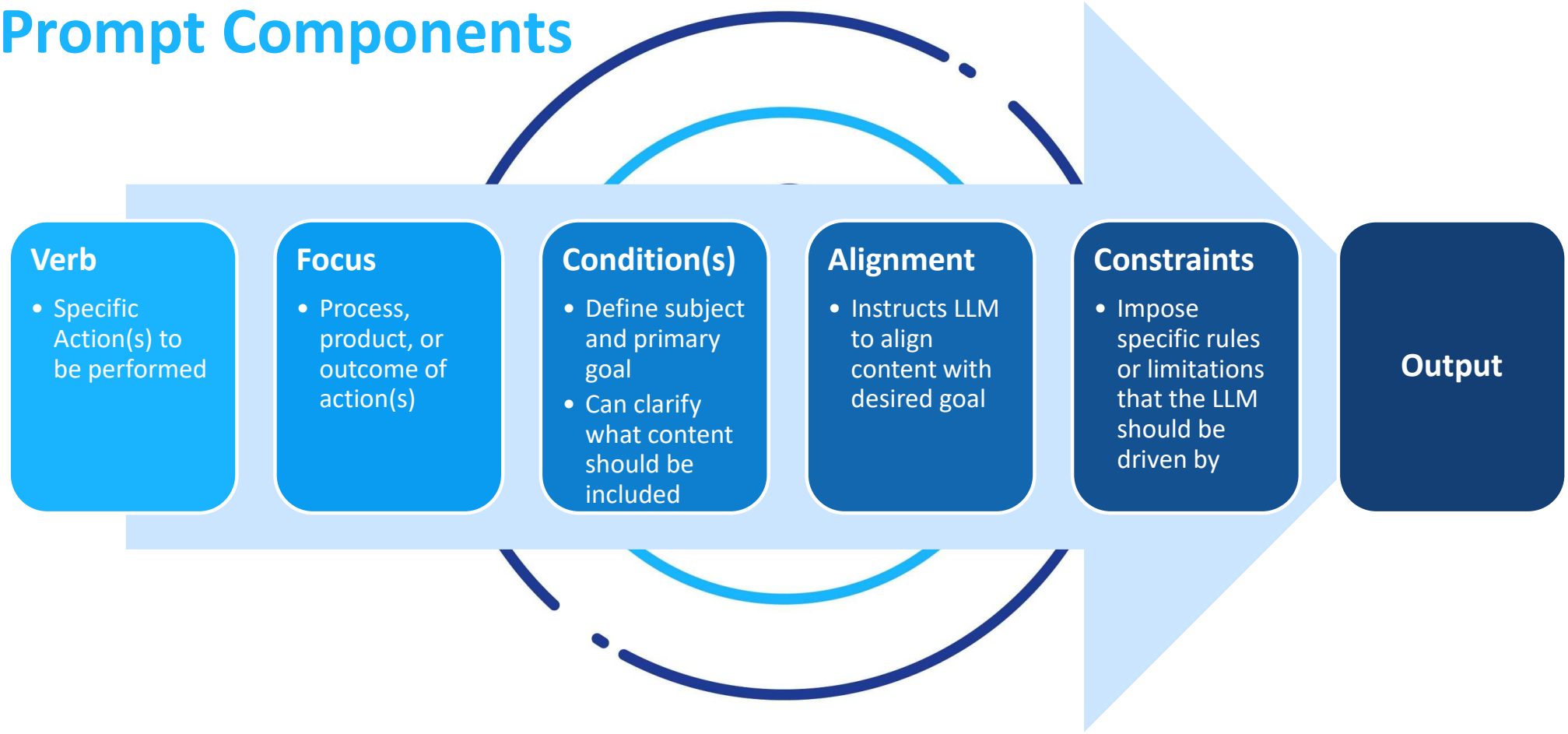
Prompt Engineering 101:
Prompt Steps

Step	Action
1. Define Goal	Identify the specific outcomes you want AI to achieve. This will ensure prompt aligns with your goal.
2. Determine Content Type and Format	Decide on the type of content (e.g., case study) and the format (e.g., multiple choice) that best fits your objectives and context.
3. Craft Initial Prompt	Create a clear, concise, contextualized, rules-based prompt that communicates the desired content and format to the AI model.
4. Initial Testing / Prototyping	Input the prompt into the AI model to generate an initial output.
5. Reflect on Output	Evaluate the AI-generated content to see if it aligns with your intended goal.
6. Iterate	Refine the prompt by adjusting the context, instruction, or constraints. Repeat until you achieve the desired output.

J Univ Teach and Learn Practice. 2023 Jun 20(2).

Prompt Engineering 101:

Prompt Components



J Univ Teach and Learn Practice. 2023 Jun 20(2).

Poor Prompt Engineering Example:

"Patient has COVID and wants Paxlovid. Check interactions with their meds: simvastatin, apixaban, amiodarone. What should I do?"

Output v1 (looks good… but wrong)

- "No major interactions—Paxlovid is only 5 days."
- "Continue simvastatin."
- "Continue apixaban as usual."
- "Amiodarone is fine; just monitor."
- "No changes needed—dispense Paxlovid."

Vague prompt → false reassurance + unsafe "continue everything"

Improved Prompt Engineering Example:

"You are a community pharmacist doing a Paxlovid DDI screen with simvastatin, apixaban, and amiodarone. Use ONLY these medications. Output in 3 lines: STOP, ADJUST/MONITOR, OK. If any med is contraindicated or high-risk, say: 'Do NOT dispense until prescriber contacted' and list what to ask/clarify. Do NOT invent dosing. Recommend using an interaction resource (e.g., FDA checklist/Liverpool) for decision."

Output v2 (accurate / actionable)

- **STOP (high-risk/avoid):** simvastatin; amiodarone → Do NOT dispense until prescriber contacted
- **ADJUST/MONITOR:** apixaban → needs prescriber-specific plan (indication/dose/renal function/bleeding risk)
- **OK:** none

Strongs prompt → clear and accurate direction

Is an LLM the right tool for the job?

Academic Medicine. 2022 May; 97(5). 612 – 622.

Socratic Method 2.0: The 4-Layer Stack

Layer 1: Clinical Core *Goal: Confirm reasoning*	• What is your recommended action and rationale? Why? • What is the worst thing that could happen if this is wrong?
Layer 2: Evidence Anchoring *Goal: Attach claims to truth and evidence by strength*	• What is your source of truth for this claim? • Is this guideline-level, primary literature, local policy, or expert opinion?
Layer 3: AI Provenance *Goal: Require transparency and ownership of work*	• Where did AI help? Show me where AI might have hallucinated. • How did you verify this content? If you can't trace it, you can't place it in patient care.
Layer 4: Metacognition *Goal: Develop self-awareness to prevent AI-dependency*	• What is your personal rule for when AI is allowable? • What competency are you trying to build here that AI might weaken? What would you do differently next time?

The Preceptor's Personal AI Toolkit

Build rotation syllabus

Generate practice cases or questions for learners

Evaluate student work and provide feedback

Draft letters of recommendation

Patient counseling or physician dialogue practice

Generate topic discussions

Case #1: The Efficient Note Writer

Scenario / Setting:
You're precepting an ambulatory care APPE. A student submits a SOAP note for a 68-year-old with T2DM, CKD3, and HTN seen for follow-up. The note is polished, beautifully formatted, and turned in unusually fast. Their recommendation to increase metformin dosing is correct.

Red flags you notice:

- Mentions a medication and diagnosis not in their record (Bactrim for UTI)
- Plan escalates antihypertensive therapy despite reported hypotension + dizziness
- ADA 2025 guidelines are mentioned but not cited

When asked if the student used AI, they say: "I used AI to draft and edit my note." The student fully understands the rationale behind their metformin recommendation.

How would you address this situation as this student's preceptor?

Case #1: The Efficient Note Writer

Key Issues:

- Hallucinations (invented meds/labs, incorrect values)
- Clinical reasoning gap (hypotension + dizziness → not a HTN escalation case)
- Transparency & accountability (AI-assisted writing without verification)
- Patient safety risk
- Liability risk

Preceptor Strategies:

- Discuss patient safety, policy, and liability
- Ask the student to share their prompt for your review
- Ask the student to point to the chart source for questionable information
- Have the student practice reviewing AI-generated notes for inaccuracies

Case #2: The Ethical Gray Zone

Scenario / Setting:
Community APPE. Student creates a patient handout for you called “Starting a GLP-1: What to expect.” Much of the information is appropriate. It looks professional.

Red flags you notice:

- No sources cited
- Contains an absolute claim about GLP-1s not being associated with hypotension
- Doesn’t match site policy (includes discussion about compounding/off-label messaging)

When asked if the student used AI, they say: “I didn’t think it counted as plagiarism because it’s not copying a person.”

How would you utilize the Socratic Method 2.0 to address this situation?

Case #2: The Ethical Gray Zone

Key Issues:

- Academic honesty
- Professional integrity
- Plagiarism / ownership confusion
- Patient safety & liability

Preceptor Strategies:

- Disclose policy, discuss AI citation norms, and discuss patient safety
- Require source anchoring
- Ask student to reflect (e.g., “where do you draw the line between acceptable use of AI and misrepresentation?”)

Case #3: The Quiet Clinician

Scenario / Setting:
Internal Medicine APPE. Student is quiet on rounds. Turns in a high-end drug monograph for formulary review with tables and recommendations.

Red flags you notice:

- Can't explain why one formulation is preferred in CKD vs. non-CKD patients
- Struggles to interpret study outcomes/limitations
- Reads from document; avoids discussion

When asked how they made their table, they say: "AI helped synthesize and build the tables."

How would you address this situation as this student's preceptor?

Case #3: The Quiet Clinician

Key Issues:

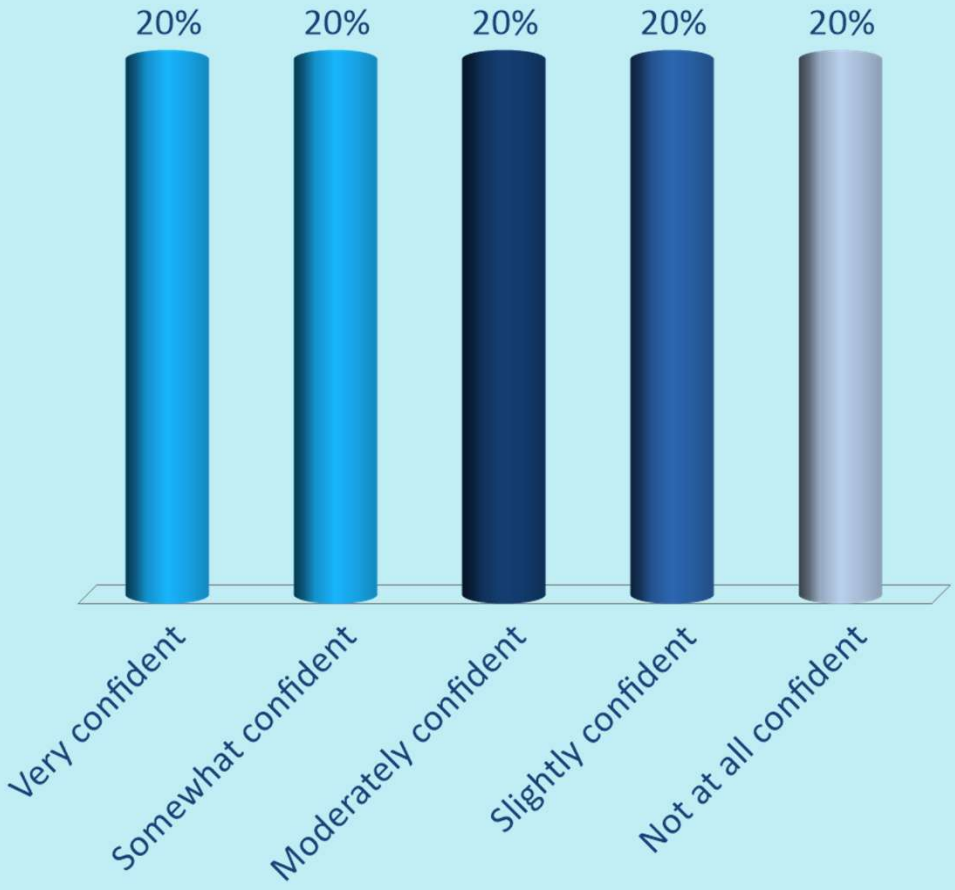
- Advanced product but shallow understanding
- Overreliance on AI (AI thinks while student formats)

Preceptor Strategies:

- Make student share their prompt and provide guidance
- Set guardrails for the student (e.g., student may use AI only after they create a one-page outline in their own words along with sources)
- Daily one-liner recommendations: 1 recommendation + 1 rationale + 1 risk/monitoring for each patient they follow
- Encourage them to input their own rationale into any AI prompt they utilize

How confident are you in allowing students utilize AI in experiential education?

A. Very confident
B. Somewhat confident
C. Moderately confident
D. Slightly confident
E. Not at all confident



Need More Information?

Kunal Amin, PharmD, BSPS
kamin@neomed.edu
Lukas Everly, PharmD, BCPS
leverly@neomed.edu
Zach Jenkins, PharmD, BCPS
zjenkins@cedarville.edu

Pharmacy Forward: Advancing Practice for a Healthier Tomorrow!

OPA Annual Conference & Trade Show April 9-11, 2026

OHIO PHARMACISTS ASSOCIATION