2025 Educause Course Teaching with AI

Martin Schmidt

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Medicine & Health Sciences

Key Features of the Course

2-week online program designed to help higher education professionals integrate AI into their teaching practices

Interactive modules, live discussions:

- What Do I Need to Know About AI?
- Rethinking Exams, Papers, and Projects
- Partnering with Students Using AI
- Ethical Considerations of AI
- Designing Instruction in Light of AI

Digital microcredential upon completion

Why Does AI Matter in Education?

AI-generated student work is often polished and rubric-compliant—but does that mean learning happened?

The real issue: grading machine-written work with machine graders risks eroding the teacher-student relationship.

Key shift: From assessing products to evaluating processes—especially in areas like professional identity formation and clinical reasoning.

Three Models for AI Integration

The red/yellow/green light framework

🔴 **Mitigate**: Prohibit use and employ tools to detect infractions

🟡 **Support**: Encourage responsible use. Ask students to disclose and reflect on how they used AI in assignments.

🟢 **Elevate**: Design activities where AI becomes a learning partner. Example: peer-reviewed essays critiquing both content and AI usage.

Strategies that Worked

Question writing

Generates Board-style questions with rationale and objectives, great for formative assessment

See AAMC prompt engineering guides for writing very good questions

Peer critique of AI-assisted essays

Students disclose AI use, peers evaluate both the ideas and the AI application

Evaluate AI-generated answers

Students can summon AI help during exam but need to indicate if they agree with the answer

Simulations with chatbots

AI chatbots can simulate some patients better than actors

Partnering with Students

Model learning, not control

- We’re all novice learners in the AI era.
- Invite students to co-design activities, share what works across courses, and reflect critically.
- Your mindset—trust, transparency, and creativity—shapes theirs.

Respect the adult learner

- Know what they want to learn and can identify busywork
- Adult learners can spot learning opportunities and may refrain from using shortcuts

Challenge

How can we use AI to teach students to think better, not just write faster?

How can we maintain the human connection with our students?

Teaching with AI
EDUCAUSE Reflections

Jason Semprini, PhD, MPP
Department of Public Health

DES MOINES UNIVERSITY
MEDICINE & HEALTH SCIENCES

Agenda

Reflection

Readiness

My Teaching Roles

Public Health Capstones – Project Based Courses (Demonstrate skills)

Proposal Writing Courses – Writing Intensive Courses (Learn skills)

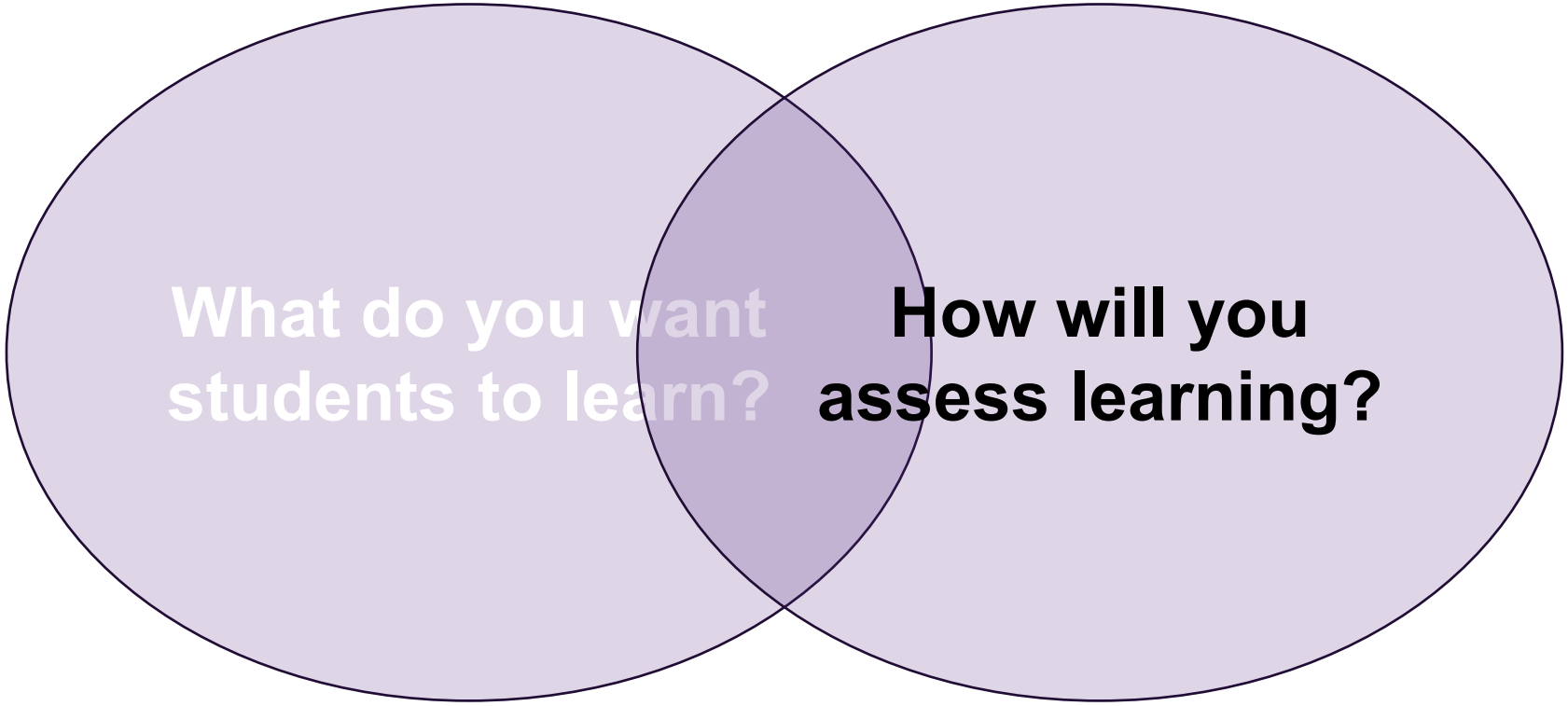
Research Elective Course – Research Intensive Course (mixed)

Reflection

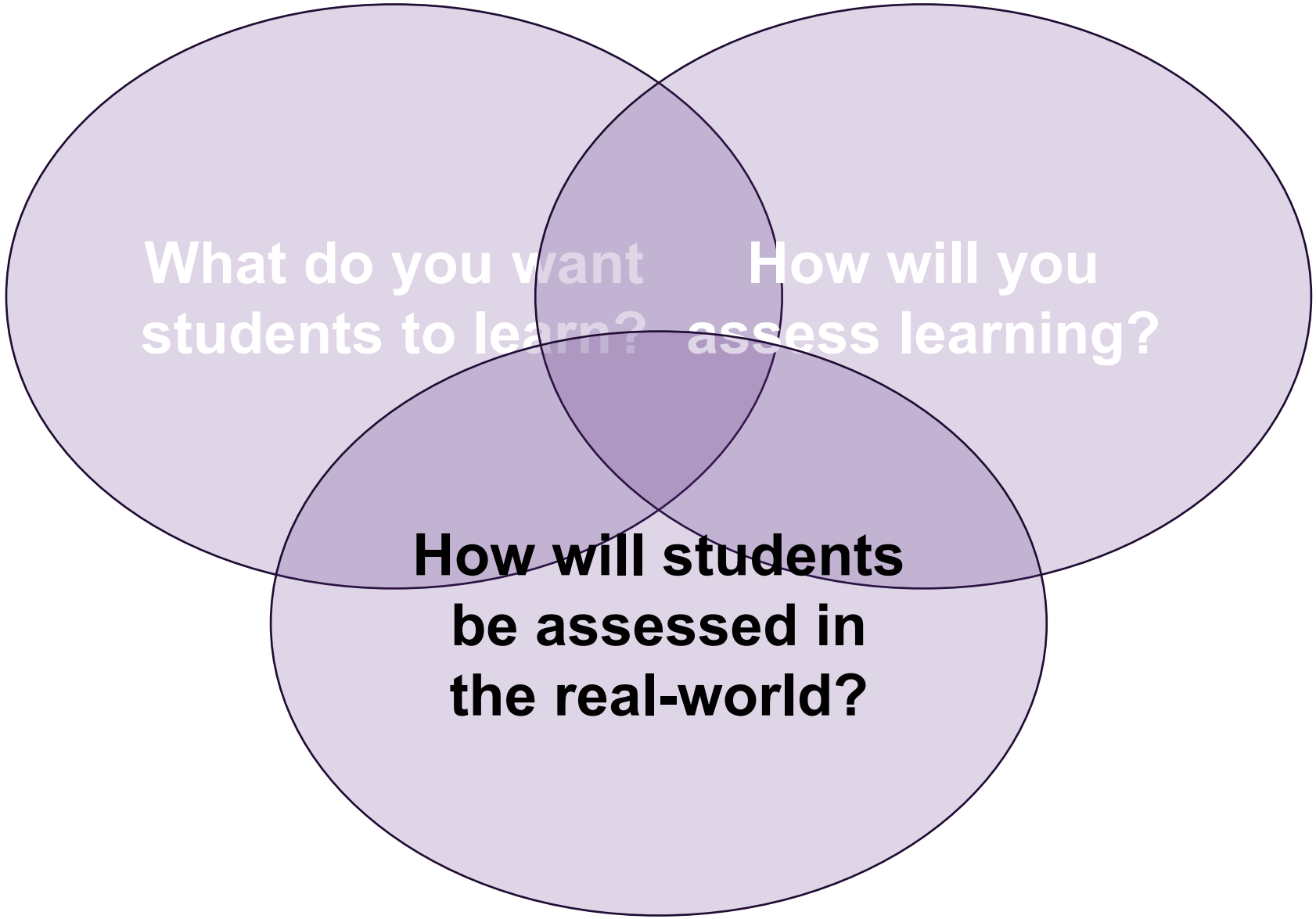
Reflection

What do you want students to learn?

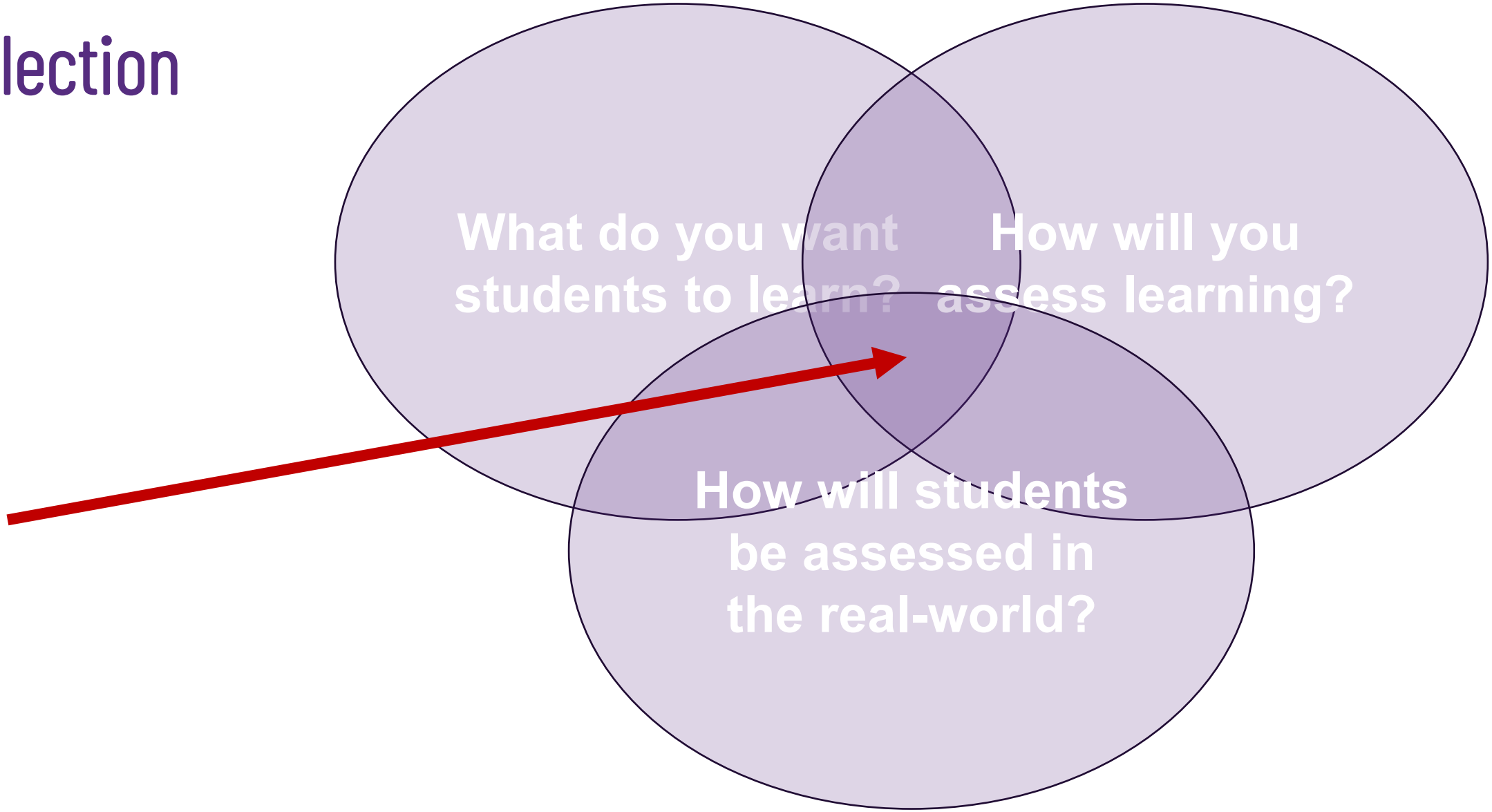
Reflection


What do you want students to learn?
How will you assess learning?

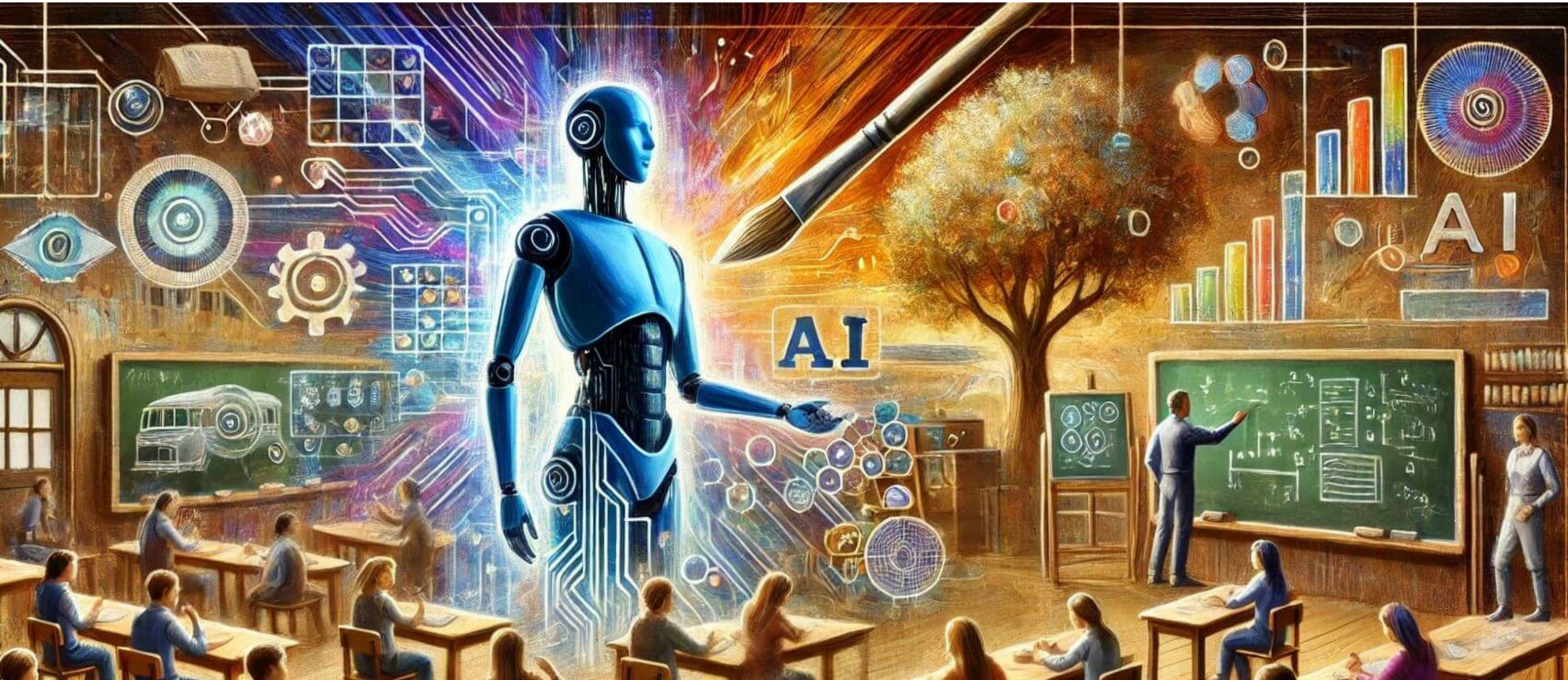
Reflection


What do you want students to learn?
How will you assess learning?
How will students be assessed in the real-world?

Reflection

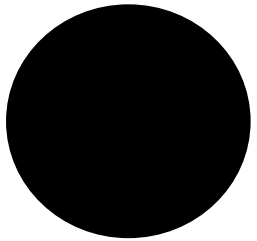

What do you want students to learn?
How will you assess learning?
How will students be assessed in the real-world?

Reflection – AI is disrupting that intersection



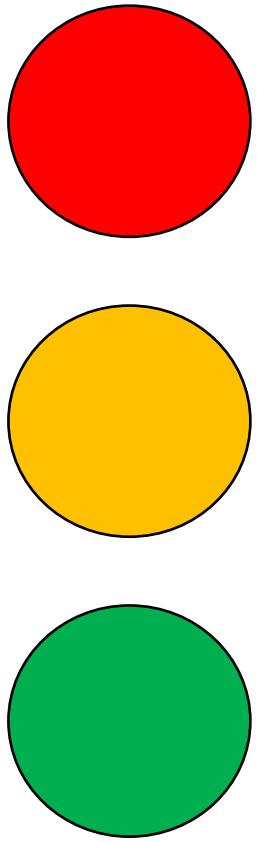
Ready or not…

Ready or not…



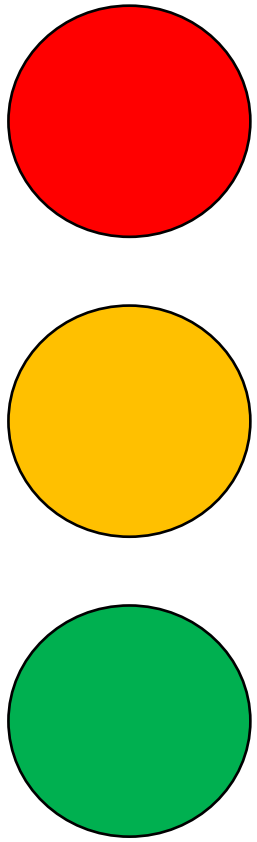
Cannot ignore AI.

Readiness for AI in the classroom



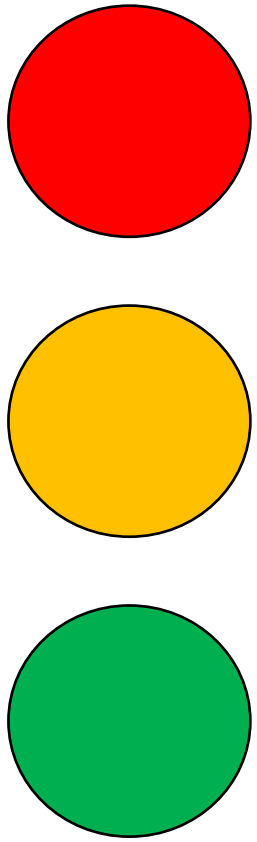
Not using AI in the classroom.

Readiness for AI in the classroom



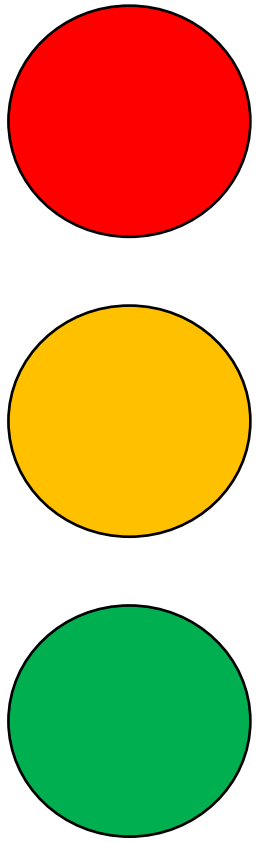
DOES NOT MEAN DO NOTHING!

Readiness for AI in the classroom



Adapt teaching and assessing to mitigate disruption from AI.

Readiness for AI in the classroom

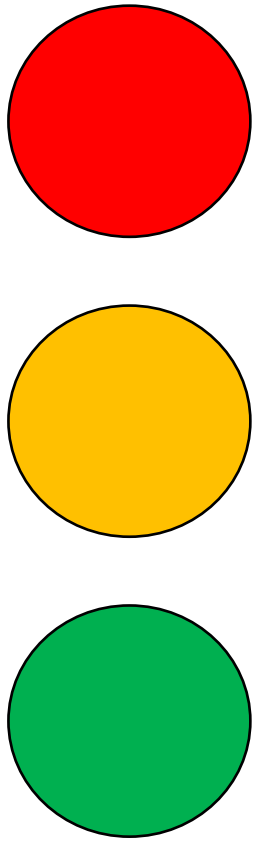


Adapt teaching and assessing to mitigate disruption from AI.

Examples

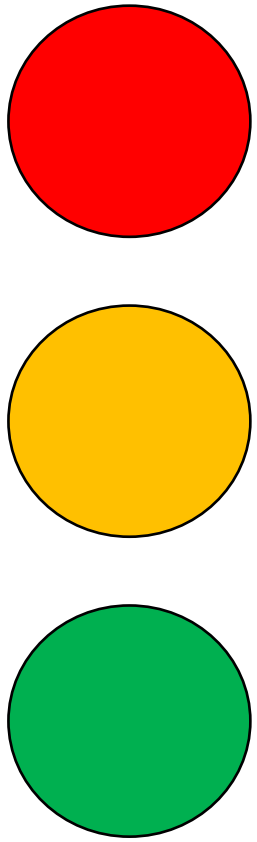
- Offline tests
- Oral reports
- Supervised practice

(My) Readiness for AI in the classroom



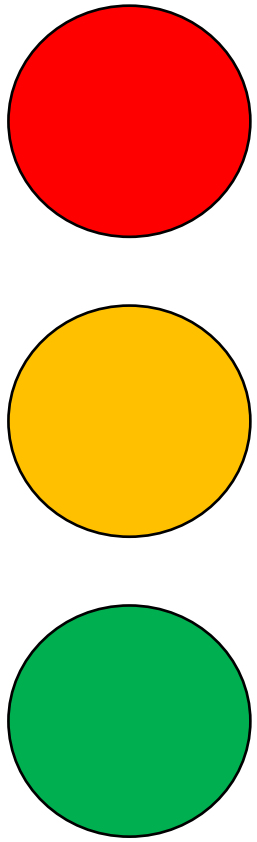
Research elective courses → ***mentorship model.***

Readiness for AI in the classroom



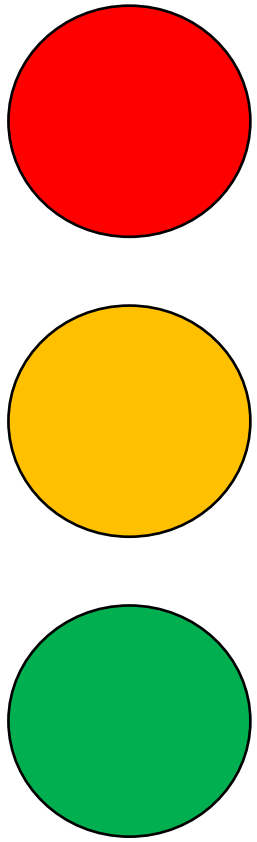
Cautious exploration of AI in the classroom.

Readiness for AI in the classroom



Focus on process, emphasize transparency, and evaluate approaches.

Readiness for AI in the classroom

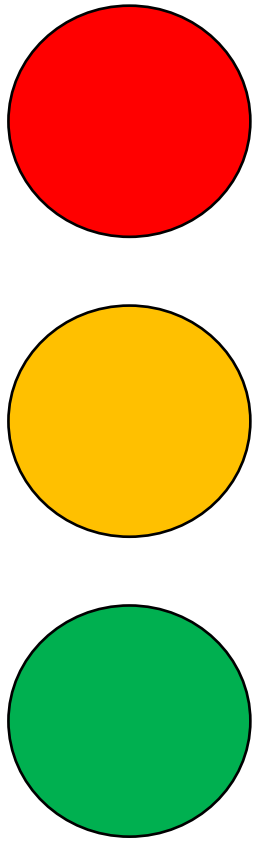


Cautious exploration of AI in the classroom.

Examples

- Brainstormer
- Editor
- Summarizer
- Low-stakes tasks
- External to competitive advantage

Readiness for AI in the classroom



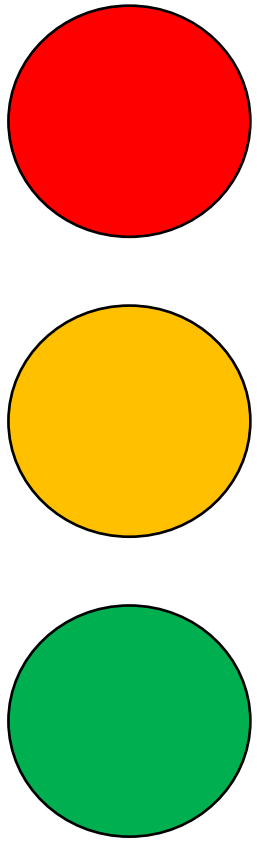
Writing courses → ***<u>Do not explicitly ban AI. Rigorous evaluation.</u>***

Allow AI to compliment tasks.

Assess writing process.

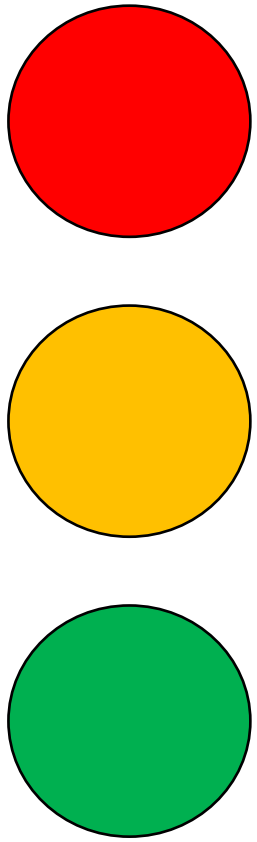
AI generated papers are future competition.

Readiness for AI in the classroom



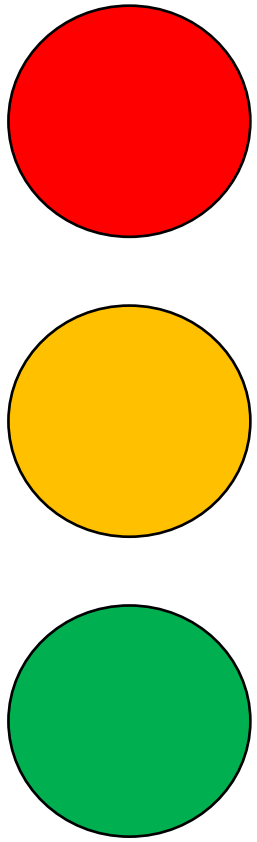
Maximize opportunity, embracing AI as critical tool for learning & practice

Readiness for AI in the classroom



DOES NOT MEAN AN AI FREE FOR ALL!

Readiness for AI in the classroom

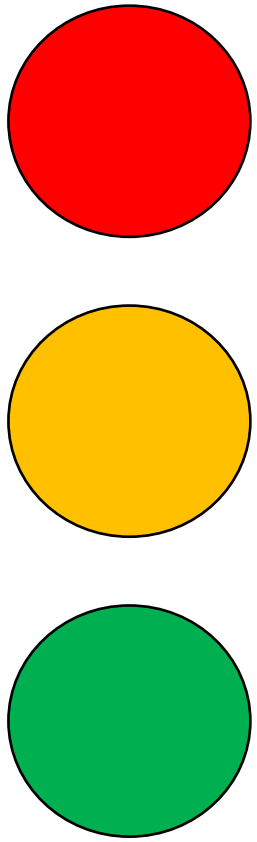


Encourage or Require effective use of AI

Examples

- Teach effective prompting
- Teach appropriate case uses for AI
- Discuss ethics

Readiness for AI in the classroom



Project-based courses → Shifting towards green light readiness

Summary

AI has disrupted higher education, do not let it disrupt how you teach students what you think they need to learn.

3 stages of readiness:

Red – Mitigate AI disruption.

Yellow – Cautious exploration and iterative evaluation.

Green – Encouraging / Requiring effective AI use.

AI in Data Analysis

Jared Datzman, DrPH

Use Cases

- Data Cleaning and manipulation
- Code creation and troubleshooting (from excel formula to python to SQL)
- Data analysis
- Data interpretation

Tools

1. Quadratic 
2. Julius AI 

3. Bricks 
4. Zebra 

Specialized

5. Claude 
6. ChatGPT 

Dangers

- Mindlessness and vibe coding
- Bias
- Obfuscation
- Asking the wrong question
- Privacy
- Hallucination

Workarounds

For Students

- Presentations for students, deeper questions for exams/papers
- Teaching Python/R/SQL
- Critical interpretation of AI output
- Guide students towards the proper use of AI and away from reliance on a single AI or source

Workarounds

For Researchers

- Asking the right questions
  - Avoid reliance for interpretation/conclusions
- Find software that is HIPAA, GDPR, and SOC2 compliant
  - Local hosting (if available)
- Learning Python/R/SQL
- Have clear roles for the AI (for example data cleaning) with a focus on expediting the process rather than utilizing it for analyses with which you are less familiar

Exploring AI as a Thinking Scaffold: Practical Insights from the EDUCAUSE Course

LiLian Yuan, PhD

Physiology and Pharmacology

- **Focus:** Graduate Biomedical Research Training (PhD & MS Students)
- **Question:**

  Can AI serve as a **thinking scaffold** - a tool that supports, but does not replace, scientific reasoning and creativity?

Helping Students Think Logically

Challenge: Biomedical graduate students often know what to do, but not always why. they jump from data to conclusions without articulating reasoning.

Exploring AI as Scaffold:

- Use AI as a tutor to prompt stepwise reasoning.
- Example prompts:
  - Why is this control appropriate?
  - What would prove your hypothesis correct or wrong?
  - What alternative explanations exist?
- AI encourages students to externalize their logic and refine arguments.

Question for us:

- Can guided AI dialogue strengthen students' ability to reason like scientists?

Guiding Dissertation Thinking

Challenge:

Students often struggle to narrow ideas into feasible, mechanistically sound projects.

Exploring AI as Scaffold:

- Use AI for structured brainstorming: summarize literature, refine hypotheses, predict outcomes.
- Simulate a "committee discussion" to reveal logical gaps or feasibility issues.

Question for us:

Can AI help students think about their thinking - turning project design into a reflective process?

Supporting Scientific Writing & Grants

Challenge:

Graduate students find scientific writing overwhelming: logic, persuasion, and tone are hard to balance.

Exploring AI as Scaffold:

- Have students use AI to:
  - Outline and reorder sections for logical flow.
  - Generate 'mock reviews' of Specific Aims to anticipate critiques.
- Compare AI feedback with peer or faculty edits to reveal reasoning behind revisions.

Question for us:

How might AI feedback become a mirror for scientific clarity, not a shortcut to polished writing?

Reflections & Discussion

Emerging Insight:

• When used thoughtfully, AI scaffolds the thinking process rather than replacing it.

• It externalizes reasoning, offers formative feedback, and supports iteration.

Faculty Role:

• Shift from provider of answers → **coach** of reflective thinking.

• Emphasize ethics, attribution, and critical verification.

• Guide students to ask: 'How does this AI output change how I think?'

Closing Question:

How can we design assignments and mentorship practices that use AI to amplify, not outsource, student thinking?

EDUCAUSE AI

Brian Pinney, PhD

October 30, 2025

Teaching and Learning in the Age of AI

AI will change how we engage in teaching and learning

Tasks that *require* no AI use likely need a way for definitive confirmation

Novel tasks that allow or encourage AI use can be designed to mitigate some risks but this is a new area

Educators and students are *both* learning how to use AI for tasks

Researchers are still determining what works and what doesn't

What seems clear initially: knowing what it does and how to do certain tasks seems to improve outcomes.

Changing the Paradigm of Learning Activities

AI makes *new* activities available

- "Fool the AI" – in class "gamified" element that leverages AI being wrong as a learning activity
- AI as Academic Coach – can reinforce good study approaches
- AI as a brainstorming partner or to counter argue a point
- Misconception mining – asking AI for likely student errors to learning tasks

AI can make *old* activities more engaging or efficient (DMU Example)

- Patient interviewing – no longer requires peers
  - All students can be working on skill development at the same time
  - Students likely find the patient role difficult (they know too much)
- Drafting cases or writing questions (caution)
- Drafting flashcards (Anki/Quizlet)

What If Students Cheat With AI?

This is a serious concern…

What do we actually want students to *do*? (Writing as an example) Maybe AI can support the development.

What if we *design* for them using AI?

EDUCAUSE Example

- Instructor added a "consult with AI" option on exam
- Rules: if students use it, the *best* they can get on the question is 50%
- AI provides an answer and explanation and students have to write if they agree or disagree (can *still* miss it)

What did they find?

High performers still performed high (and didn't use the AI)

Lower performers performed similarly to before and tended to use AI more

Students that used AI had to make an important choice… guess and maybe get all the points or give up half the points to secure some.

Tended to improve how well lower performers engaged with items

Cognitive Offloading is a Serious Issue

Dimension	Cognitive Offloading	Cognitive Scaffolding
Definition	Delegating cognitive work to AI to save time/effort	Using AI to support and stretch one's own reasoning and memory
Primary Functions	Automation, summarization, convenience	Guidance, questioning, feedback
Learner's Cognitive Load	Tends to lead to reduction > can result in shallow processing	Tries to keep learners in a state of productive challenge > deeper processing
Best Used When	You *already* know the content and need efficiency	You're learning new material or learning how to use material
Overuse Risk	Reduction in critical thinking, dependency, poorer recall	Slightly slower appearance of learning but improved retention

Where Does Using AI Really Seem to Impact Outcomes?

- AI tends to be very good at traditional written tasks
- Open MCQ exams or written products (not proctored) are a major risk if supposed to be student generated
  - AI detection software does *not* do a good job (course even gave examples of using AI to defeat AI detection software)
    - Can result in pushing students *into* using AI if they are nervous about false positives
- Students asking AI to do *significant* heavy lifting with learning tasks rather than to drive engagement
- Research is emerging and show mixed results with AI
  - AI *can* support learning outcomes or be negative
- Supporting/Educating educators and learners seems to be important for good learning outcomes
- Learning activities need to leverage AI in a meaningful way