Pedagogy First:

Deciding When (and When Not)
to Use AI in Teaching

Presented by:

Belmont Teaching Center · **Belmont Data & AI Collaborative (BDAIC)**

BELMONT DATA & AI COLLABORATIVE

IN THIS SESSION

The Question
Reframing how we think about AI

The Research
Three ideas from learning science

The Tool
A three-gate decision framework

The Application
Apply it to your assignment/Explore AI tools

The Invitation
The AI Table

Today's Resources

📁 *One folder — two documents*

1 ## Faculty Handout

The three gates, outcomes, and workshop activity — your reference guide for today

2 ## White Paper

The learning research behind the tool — for anyone who wants to go deeper

Open the folder now — we'll use the handout throughout the session.

Short URL

https://bit.ly/Pedagogy-First-AI-Resources

"Can I take your order?"

A customer and cashier try to have a conversation — using only ChatGPT.

When You Use ChatGPT for Everything

YouTube: "When You Use ChatGPT for Everything," NunninkComedy and Harris Alterman, 2025

Should students use AI?

This is often the starting question, but it's not the most useful one.

→

When does AI use support vs. undermine the learning I care about?

Both choosing to use AI and choosing not to use AI are sound pedagogical decisions when grounded in clear learning goals.

What Learning Research Tells Us

Three ideas that ground every decision in the Pedagogy-First AI Tool

01

Struggle builds learning.

Effortful retrieval and generation during learning predicts long-term retention. When AI removes the struggle, it may remove the learning.

Bjork & Bjork (2011)

02

Scaffolds have to come down.

A scaffold helps a learner reach what they couldn't reach alone, but it must eventually be removed. A permanent scaffold becomes a crutch.

Vygotsky (1978); Wood, Bruner & Ross (1976)

03

Good design starts with the goal.

Begin with what you want students to be able to do. Then ask: what would count as evidence? Then: what experience gets them there?

Wiggins & McTighe (2005)

Pedagogy-First AI

An Assignment Design Tool

A three-gate decision framework to help you make intentional, pedagogically grounded choices about AI in your assignments.

The value of this tool is in the thinking it prompts, rather than the result it produces.

GATE 1

The Capability Question

GATE 2

The Learning Moment

GATE 3

Scaffold or Shortcut?

The Five Learning Moments

Each moment makes different cognitive demands and AI affects each one differently.

Exploration

Generating questions, mapping unknowns, brainstorming

Practice

Applying a skill, working through problems

Repetition

Building fluency, stamina, and automaticity

Feedback

Reviewing, revising, developing editorial judgment

Assessment

Demonstrating learning, synthesis, and judgment

Note: Complex assignments move through several moments sequentially. Choose the moment for the stage you're currently designing.

Introducing the

Pedagogy-First AI Tool

IT IS

→ A thinking tool — for prompting better questions, not providing easy answers

→ Pedagogically grounded — every branch traces to learning research

→ Neutral by design — both AI and No AI are legitimate outcomes

IT ISN'T

→ A policy document — it won't tell you what to put in your syllabus

→ A rulebook — it's meant to be argued with and adapted

→ A one-time decision — run it again for different stages of the same assignment

The value of this tool is in the thinking it prompts, rather than the result it produces.

The Three-Gate Decision Framework

1 **Capability Question**

Do students need to do this independently — in a future course, exam, or career?

2 **Learning Moment**

Exploration · Practice · Repetition · Feedback · Assessment

3 **Scaffold or Shortcut?**

Would AI do the cognitive work the student needs to do, or help them reach it?

NO AI BY DESIGN

A principled pedagogical choice grounded in what students must build independently.

AI WITH INTENTION

A principled pedagogical choice grounded in how AI can scaffold without replacing learning.

Access the Tool

Tool Link

https://bit.ly/pedagogy-first-ai

→ Scan the QR code with your phone camera

→ Or type the short URL into any browser

→ Works on laptops, tablets, and phones

→ Save or print your results at the end

Think of an assignment you want to create or redesign.

1

Gate 1

Do students need to do this independently — in a future course, on an exam, in their career?

2

Gate 2

What is the assignment primarily asking students to do? (Exploration, Practice, Repetition, Feedback, or Assessment)

3

Gate 3

Would AI do the cognitive work the student needs to do, or would it help them reach work they couldn't access otherwise?

Does this result align with my learning goal, or do I need to rethink my approach?

What did you find?

✔ *Where did the tool take you, and did the result align with your learning goal?*

✖ *Where did the tool not fit your discipline or your assignment?*

❓ *What question did the tool raise that you hadn't thought about before?*

The goal isn't the outcome; the goal is reasoning you can explain.

A Practical Guide
to What's Out There

Know the tools. Know the differences. Know how to use them in your teaching.

What All These Tools Have in Common

Every tool on this list is a Large Language Model (LLM): software trained on vast amounts of human text that predicts and generates useful responses. Same basic technology — different strengths, interfaces, and integrations.

They generate — not search

They write new text each time. Not a Google search. Not a database lookup.

Better prompts = better results

All of them respond to specificity. Context, role, format — use them every time.

They can be confidently wrong

They produce plausible-sounding text, not verified facts. Always check important claims.

No memory between sessions

Unless you tell them your context, they start fresh every conversation.

Five Tools You Need to Know

ChatGPT

The one students are using

Free + paid tiers · chatgpt.com

Claude

Best for long docs & nuanced writing

Free + paid tiers · claude.ai

Gemini

Lives inside Google Workspace

Free + paid · integrated into Google Docs/Gmail

Copilot

Lives inside Office 365

Often included with Microsoft 365 license

Perplexity

AI that cites its sources

Free + paid tiers · perplexity.ai

ChatGPT

by OpenAI · chatgpt.com · Free tier available

Most students are already using this.

Strengths

- Versatile — writes, explains, codes, brainstorms
- Largest plugin/GPT ecosystem
- Browses the web (paid tier)
- Strong at step-by-step reasoning and math
- Most familiar to students — easy to demo

Education Use Cases

- Generate first-draft rubrics to refine
- Create multiple-choice or discussion questions
- Ask it to explain a concept at different reading levels
- Have it play 'devil's advocate' on a topic
- Use Custom GPTs to build course-specific tools
- Demo it live — students see how you prompt and evaluate

Claude

Strengths

- Handles very long documents (upload a syllabus, a paper, a reading)
- Nuanced, thoughtful tone — reads less like 'AI-speak'
- Excellent at writing feedback and editorial suggestions
- Strong at holding complex instructions across a conversation
- Designed with safety and honesty as core principles
- Projects feature lets you save context across sessions

Education Use Cases

- Upload a full article — ask for a structured summary
- Paste student writing — get detailed developmental feedback
- Upload your syllabus — ask it to identify alignment gaps
- Draft assignment descriptions; ask it to flag ambiguities
- Use Projects to build a persistent 'course assistant'
- Ask it to argue against your course design — stress-test assumptions

Gemini

by Google · gemini.google.com · Integrated into Google Workspace

Strengths

- Deep integration with Google Docs, Gmail, Drive, Slides
- Real-time web access built in — current information
- Multimodal: understands images, PDFs, audio
- Works directly inside tools faculty already use daily
- Strong at summarizing and organizing information
- Google Workspace for Education often includes it

Education Use Cases

- Summarize a Google Doc reading while you're inside it
- Draft email responses to students from within Gmail
- Ask about current events, recent publications, today's news
- Use in Google Slides to draft presentation content
- If your institution uses Google Workspace — it may already be enabled
- Students using Gmail/Docs may have access already

Microsoft Copilot & Perplexity

Microsoft Copilot

by Microsoft · Often included in Microsoft 365 / institutional licenses

- Built into Word, Excel, PowerPoint, Outlook, Teams — AI where you already work
- Drafts documents, summarizes email threads, generates slide decks from a prompt
- Check with your IT/admin — many institutions have Copilot already licensed
- Best fit: faculty deep in the Microsoft ecosystem

Perplexity

by Perplexity AI · perplexity.ai · Free tier available

- Designed as a research assistant — every answer cites its sources
- Great for fact-checking, literature orientation, staying current in a field
- Lower hallucination risk than general chatbots because it grounds responses in live web sources
- Best fit: research prep, literature reviews, verifying claims — for faculty and students alike

Which Tool for Which Task?

Task	ChatGPT	Claude	Gemini	Copilot
Brainstorm & draft content	✓✓	✓✓	✓	✓
Long document analysis	✓	✓✓	✓	✓
Nuanced writing feedback	✓	✓✓	✓	✓
Current events / web search	✓	—	✓✓	✓
Works inside Google Docs/Gmail	—	—	✓✓	—
Works inside Word/Outlook	—	—	—	✓✓
Cite sources / research assist	~	~	✓	~

✓✓ = Best choice   ✓ = Works well   ~ = With caveats   — = Not designed for this

The Prompt Framework That Works Everywhere

Same structure works in ChatGPT, Claude, Gemini, or Copilot.

ROLE	TASK	CONTEXT	FORMAT
Tell it who to be	Say exactly what you want	Give course/student details	Specify the output shape
"Act as an experienced composition instructor..."	*"...write 5 discussion questions on climate policy..."*	*"...for a 200-level environmental studies class."*	*"Return them as a numbered list with a short rationale for each."*

The first response is rarely the best. Follow up: 'Make this shorter.' / 'Add a real-world example.' / 'Be more critical of my assignment design.'

What to Walk Away With

1 Your students are already using ChatGPT. Know the tool they know — so you can have an informed conversation about it.

2 Choose based on your workflow: Google shop → Gemini. Microsoft shop → Copilot. Long docs + writing → Claude. Research → Perplexity.

3 Prompting is a teachable skill — and modeling it in class is itself a form of AI literacy instruction.

4 Pedagogy still drives the decision. The tool comes second; the learning outcome comes first.

The AI Table

An informal lunch conversation about AI and teaching.

No agenda. No slides. No pressure.
Just a table, good company, and open questions.

Skeptics, enthusiasts, and everyone still deciding — all are welcome.

DETAILS

**Thursday, April 16
Noon— 1
Location TBA**

Sign up on the feedback form — or watch for an email invitation.