AI + UDL: Creating Adaptive Course Materials

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AI + UDL:
Creating Adaptive Courses

Using Artificial Intelligence to Support Universal Design for Learning Principles

Facilitator: YOUR NAME HERE

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Welcome & Framing

Warm-up Question: "When you think of AI in teaching, what comes to mind?"

Our Story

Professor Martinez struggled to provide accessible materials for his diverse biology class. Using AI tools, he transformed a complex cellular respiration lecture into multiple formats - simplified text explanations, visual metaphors, and interactive concept maps - without spending hours on manual adaptation.

Making Connections

AI Tools

Powerful adaptation tools that can transform content quickly

UDL Framework

Evidence-based approach to inclusive design

Combined Impact

More responsive and inclusive courses for all students

AI + UDL Principles

Universal Design for Learning provides a powerful framework that AI can enhance in three key areas:

Engagement

AI helps create multiple paths to motivation and interest:

- Generate culturally relevant examples that resonate with diverse students
- Create personalized, gamified formative assessments
- Develop choice boards with varied learning activities

Representation

AI transforms how content is presented:

- Generate concise summaries at different reading levels
- Create visual metaphors and concept maps
- Produce audio transcripts and descriptive captions

Action & Expression

AI enables flexible assessment options:

- Design multiple assessment formats (written, visual, audio)
- Create rubrics that accommodate diverse expressions
- Generate scaffolded assignment templates

Prompting Principles

Clear Communication Unlocks AI Potential

Effective prompting is the bridge between your educational intentions and AI's capabilities. Like giving clear instructions to a skilled but literal-minded assistant, good prompts produce dramatically better results.

> "The quality of your prompts directly determines the quality of AI outputs. Invest time in crafting clear, specific, and contextually rich prompts."
>
> — Ethan Mollick, AI Researcher

Key principles include being specific about desired outcomes, providing sufficient context, and structuring requests logically to guide AI processing.

AI SOCRATIC METHOD

Ask a question

↓

Generate a response

↓

Analyze the response

↓

Pose a follow-up question
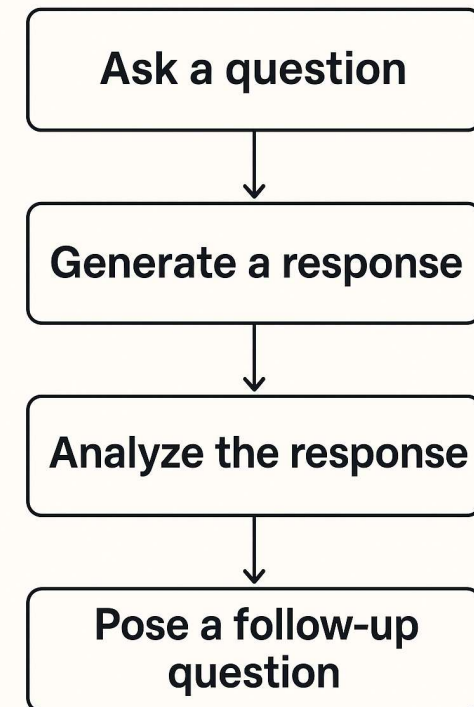
Hands-On: AI for Adaptive Design

Representation

Demonstrate how AI can transform complex academic text into plain language summaries and create visual metaphors to reinforce concepts.

Try it: "Summarize this journal article about TPACK at a 9th-grade reading level, then create a visual metaphor."

Flexible Assessments

Show how to generate multiple assessment formats for the same learning objective to accommodate different learning styles.

Try it: "Create three different ways students could demonstrate understanding of economic supply and demand: written, visual, and multimedia."

Adaptation

Practice rewriting assignment instructions for English language learners with simplified vocabulary while maintaining academic rigor.

Try it: "Rewrite these instructions for English language learners while preserving the core academic requirements."

Accessibility

Learn to use AI to review course materials for accessibility issues and generate recommendations for improvements.

Try it: "Review this syllabus for accessibility issues according to WCAG 2.2 guidelines and suggest improvements."

We'll spend 20 minutes on guided practice with these examples. Feel free to use your own course materials or our sample content.

Quick Win Tips and Tricks

Prompt Pattern

Use "Act as a [role]…" to get tailored output.

Iterate

Expect to refine your prompts.

Protect Privacy

Never enter student-identifiable info.

Accessibility First

Always request plain language, captions, and alt text.

Prompt Bank

Build and share a collection of UDL-aligned prompts with colleagues.

Write a "Act as a…" prompt for a lesson in your course and share in the chat box.

Advanced Prompting Techniques

Role Prompting

Assign AI a specific role: "Act as an experienced middle school science teacher creating a lab safety quiz for 7th graders."

Chain-of-Thought

Request step-by-step reasoning: "Show your thinking process as you design this assessment rubric."

Few-Shot Prompting

Provide 2-3 examples of desired output format before requesting the AI to generate similar content.

Format Requests

Specify output structure: "Provide response as a bulleted list with no more than 5 items, each under 20 words."

Constraints

Set clear boundaries: "Focus only on content appropriate for 9th grade reading level, avoiding controversial topics."

Persona Matching

Match AI voice to audience: "Write in the encouraging, supportive tone of a patient tutor working with struggling students."

Wrap-Up & Resources

Key Takeaways

AI + UDL creates a powerful combination for designing adaptive, inclusive, and creative learning environments that serve all students better.

Try One Change This Week

Exit Ticket: "Share one AI + UDL idea you'll implement in your course this semester."

Essential Resources

- CAST UDL Guidelines - Comprehensive framework for inclusive design
- CLEAR AI Framework - Ethical considerations for AI in education

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