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Future-Ready Faculty: Designing Next-Gen Assignments and Assessments with AI

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Our hopes for today:

- Develop assignments that enhance student learning while acknowledging the realities of AI tools
- Apply practical evidence-based frameworks for developing authentic assessments in an AI-integrated learning environment
- Implement transparent guidelines and strategies to help students make informed decisions around appropriate AI use in assignments
- Discuss the capabilities and limitations of using AI in assessment, including grading and providing feedback.



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How are you feeling about AI: 1-6



1



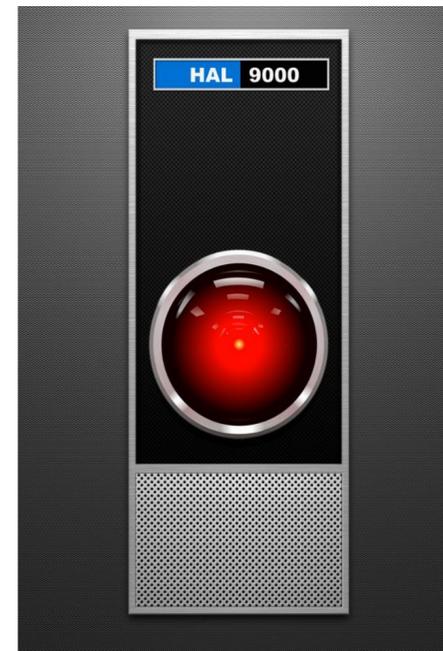
2



3



4



5



6



How to use AI meaningfully in our context?



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MicroSoft Copilot

We have access to the latest Generative AI technologies in an enterprise environment

- Runs on Chat GPT 4
- Realtime access to the Internet
- Can upload documents
- Can create images



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Generative AI Prompt Engineering

Useful Format from *Teaching With AI*:

1. **Task** - What specific task do you want AI to perform?
2. **Format** - What is the desired output from the AI?
3. **Voice** - What tone, style, or language should the AI use in the generated output?
4. **Context** - What additional context or examples can you provide for the AI to make the task more effective? (e.g., relevant case studies, sample outputs, style guides)

Bowen, J. A., & Watson, C. E. (2023). *Teaching with AI: A practical guide to a new era of human learning*. Johns Hopkins University Press.



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Sample Prompts

- **Task:** Design a multimedia presentation assignment that enhances digital literacy.
 - **Format:** Assignment guidelines (1-2 pages)
 - **Voice:** Informative, encouraging, and clear
 - **Context:** The assignment should require students to create a multimedia presentation using various digital tools. Include instructions on the content, format, and technical requirements, as well as criteria for evaluation.
-
- **Task:** Create a group project that fosters collaboration and critical thinking.
 - **Format:** Project brief (1-2 pages)
 - **Voice:** Collaborative, motivating, and structured
 - **Context:** The project should require students to work in teams to solve a complex problem or create a comprehensive report. Outline the project goals, roles, deliverables, and evaluation methods.

Another useful example of prompt engineering:

Prompt (refine learning outcomes):

You are a university professor teaching an introductory Biology course. You are also an expert at course design and have a deep understanding of **D. Fink's Taxonomy of significant learning outcomes**. I have provided my current learning outcomes. Help me refine them ensuring they are specific and measurable.

Prompt (generate assessment):

Given the outcomes we just refined:

Generate a comprehensive assessment that includes a variety of question types (e.g., multiple-choice, true/false, short answer, essay) designed to evaluate students' understanding and mastery of these outcomes. Each question should clearly align with at least one of the stated course outcomes, and please indicate which outcome each question addresses. Include instructions for students on how to approach the assessment, as well as a grading rubric that outlines the criteria for evaluating students' responses to each question type.

[Fink's Significant Learning Outcomes](#)

[Fink's Taxonomy of Significant Learning](#)

**Let's practice:
Designing Authentic Assignments
What? So What? Now What?**



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Authentic Assignments: What?

- A form of assessment in which students are asked to perform relevant tasks that demonstrate meaningful application of essential knowledge and skills (Mueller, 2005).
- Emphasize on practical application of tasks in professional and social settings (Sidhu & Chan, 2010)
- Are an alternative to traditional high-stakes assessments. Assessment *for* learning.
- Can be used as summative or formative assessment.



Authentic Assignments: So What?

- Increase student motivation by showing the practical uses of what they are studying. (Indrawn, 2019).
- Promote self-regulated learning (Steiner, 2016).
- Engage students in intellectually challenging work that extends the value of their courses.
- Simplify grading because instructors can judge students' work from the perspective of the readers/viewers/clients.
- Disincentivize misuse of generative AI tools.



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Turning a traditional assignment into an authentic assignment: a student paper

Original	Updated
<p>Assignment Title: <i>Research Paper on Climate Change</i></p> <p>Instructions:</p> <ul style="list-style-type: none"><input type="checkbox"/> Write a 5-page research paper on climate change.<input type="checkbox"/> Use at least 5 academic sources.<input type="checkbox"/> The paper should explain the causes, effects, and solutions to climate change.<input type="checkbox"/> Provide citations in APA format.	<p>Scenario:</p> <p>Imagine you are a climate consultant hired by a local community [be specific] that has experienced the impacts of climate change on your area. Your task is to develop a strategic action plan to help the community mitigate further damage and adapt to future changes. The plan should consider social, economic, and environmental factors and propose solutions tailored to the specific needs of the community.</p>

Authentic Assignments: Now What?

Let's brainstorm ways to make a traditional assignment in your discipline more authentic using CoPilot. Please generate prompts using this framework:

1. **Task** - What specific task do you want AI to perform?
2. **Format** - What is the desired output from the AI?
3. **Voice** - What tone, style, or language should the AI use in the generated output?
4. **Context** - What additional context or examples can you provide for the AI to make the task more effective? (e.g., relevant case studies, sample outputs, style guides)



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Debrief

Please share:

- **Reflection on Process:** How did applying the Task, Format, Voice, Context framework change how you thought about crafting AI prompts?
- **Authentic Assignment:** What aspects of your traditional assignment became more authentic or meaningful after redesigning it with AI in mind?



Meaningful Use of AI for Your Learners: Assessments



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TILT: transparency in learning and teaching

- **Transparent Assignment Design**

is an evidence-based framework generated by the Transparency in Learning and Teaching in Higher Education project (AAC&U).

- Helps the students understand why they are doing an assignment and how to successfully complete it. Increases sense of belonging, student success, retention.

- **Purpose**

- Learning objectives that help students recognize how the assignment will benefit their learning.

- **Task**

- Steps of the activities that students should do/perform.

- **Criteria**

- The characteristics of successful work and how you plan to assess it.

Transparent Assignment Design in the Age of AI

- **Purpose**

Learning objectives that help students recognize how the assignment will benefit their learning.

Knowledge & Skills: **Understanding AI limitations and biases**

- **Task**

Steps of the activities that students should do/perform. **Specify any mistakes to avoid, including unethical AI use.**

- **Criteria**

The characteristics of successful work and how you plan to assess it.

- **Is AI use clearly documented where required? Have AI contributions been appropriately attributed?**

- **Has AI-generated content been critically evaluated and refined?**

- **Has AI been used as a tool rather than a replacement for learning?**



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Resources that can help:

AI Assessment Scale

1	NO AI	<p>The assessment is completed entirely without AI assistance in a controlled environment, ensuring that students rely solely on their existing knowledge, understanding, and skills</p> <p>You must not use AI at any point during the assessment. You must demonstrate your core skills and knowledge.</p>
2	AI PLANNING	<p>AI may be used for pre-task activities such as brainstorming, outlining and initial research. This level focuses on the effective use of AI for planning, synthesis, and ideation, but assessments should emphasise the ability to develop and refine these ideas independently.</p> <p>You may use AI for planning, idea development, and research. Your final submission should show how you have developed and refined these ideas.</p>
3	AI COLLABORATION	<p>AI may be used to help complete the task, including idea generation, drafting, feedback, and refinement. Students should critically evaluate and modify the AI suggested outputs, demonstrating their understanding.</p> <p>You may use AI to assist with specific tasks such as drafting text, refining and evaluating your work. You must critically evaluate and modify any AI-generated content you use.</p>
4	FULL AI	<p>AI may be used to complete any elements of the task, with students directing AI to achieve the assessment goals. Assessments at this level may also require engagement with AI to achieve goals and solve problems.</p> <p>You may use AI extensively throughout your work either as you wish, or as specifically directed in your assessment. Focus on directing AI to achieve your goals while demonstrating your critical thinking.</p>
5	AI EXPLORATION	<p>AI is used creatively to enhance problem-solving, generate novel insights, or develop innovative solutions to solve problems. Students and educators co-design assessments to explore unique AI applications within the field of study.</p> <p>You should use AI creatively to solve the task, potentially co-designing new approaches with your instructor.</p>



Perkins, Furze, Roe & MacVaugh (2024). The AI Assessment Scale

leonfurze.com



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Resources that can help:



Bloom's Taxonomy Revisited

Use this table as a reference for evaluating and considering changes to aligned course activities (or, where possible, learning outcomes) that emphasize distinctive human skills and/or integrate generative AI (GenAI) tools as a supplement to the learning process.

All course activities and assessments will benefit from ongoing review given the evolving capabilities of GenAI tools.

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Blooms Taxonomy Revisited

Distinctive Human Skills

How GenAI Can Supplement Learning*

CREATE	Engage in both creative and cognitive processes that leverage human lived experiences, social-emotional interactions, intuition, reflection, and judgment to formulate original solutions	Support brainstorming processes; suggest a range of alternatives; enumerate potential drawbacks and advantages; describe successful real-world cases; create a tangible deliverable based on human inputs
EVALUATE	Engage in metacognitive reflection; holistically appraise ethical consequences of other courses of action; identify significance or situate within a full historical or disciplinary context	Identify pros and cons of various courses of action; develop and check against evaluation rubrics
ANALYZE	Critically think and reason within the cognitive and affective domains; justify analysis in depth and with clarity	Compare and contrast data, infer trends and themes in a narrowly-defined context; compute; predict; interpret and relate to real-world problems, decisions, and choices
APPLY	Operate, implement, conduct, execute, experiment, and test in the real world; apply human creativity and imagination to idea and solution development	Make use of a process, model, or method to solve a quantitative or qualitative inquiry; assist students in determining where they went wrong while solving a problem
UNDERSTAND	Contextualize answers within emotional, moral, or ethical considerations; select relevant information; explain significance	Accurately describe a concept in different words; recognize a related example; translate to another language
REMEMBER	Recall information in situations where technology is not readily accessible	Retrieve factual information; list possible answers; define a term; construct a basic chronology or timeline

*AI capabilities derived with reference to an analysis of the MAGE framework, based on ChatGPT 4 as of October 2023. See Zaphir, L., Lodge, J. M., Lisee, J., McGrath, D., & Khosravi, H. (2024). How critically can an AI think? A framework for evaluating the quality of thinking of generative artificial intelligence. arXiv preprint arXiv:2406.14769.



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Finalizing your activity

- How to make it an AI-proof assignment?
- How to make it an AI-integrated assignment?
- In what ways can AI be used to support the learning in this assignment?
- In what ways would AI be a hinderance or present an Academic Integrity issue for this assignment?



Meaningful Use of AI for Instructors: Assessments



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Waterfall chat / Sticky notes activity

Think of your specific teaching context. Consider what AI practices would be most effective (do's) and what should be avoided (don'ts) when using AI for assessment and feedback in your courses. Jot down your ideas on sticky notes or in the chat, but please hold your responses until I say "go." This will allow everyone to share their thoughts simultaneously.



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Ideas:

Assessment & Feedback

- Create formative assessments aligned with your learning objectives
- Analyze alignment between your syllabus, assignments, and assessments
- Scaffolding
- Help to polish or revise rubrics (e.g., logical structure, writing style)
- Templated language for feedback (e.g., excellent paper...), tone (growth-mindset, asset-based)
- You do first round, AI does second (proper citations, bias-resistant)
- Spellchecking, grammar
- Identifying common misconceptions and areas of difficulty
- Categorize and Sort

Student Experience Simulation (be aware of biases and stereotypes)

- Ask AI to review materials from a student perspective
- Have AI identify potential clarity issues for ESL students
- Request feedback on assignment instructions from the viewpoint of students with different learning preferences

Please fill out our very brief [online survey](#)



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March 25, 10:00 – 12:00 **Introduction to Writing AI Prompts** Rachelle Ramer

April 15 1:00 – 2:00 pm **Leveraging Generative AI for STEM courses: Coding and Math Hacks** Stan Kruse

April 23 12:00 – 1:30 pm **Super Charge Your Course Development with AI** Chris Geanious and Joseph Brown

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