Adapting Assignments in an AI Context

In a Fall 2023 survey by Tyton Partners, 82% of student respondents said they had used generative AI for coursework in that term

Shaw, C. et al. (2023). *Time for Class: Bridging student and faculty perspectives on digital learning.* Tyton Partners.

Considering an Assignment Redesign?

? Does the assignment address a course competency or essential learning objective?

NO →

Consider:
- dropping
- offering as ungraded practice
- turning into class activity

YES ↓

? Can AI complete this assessment and pass?

NO → Carry on, nothing to change

YES ↓

BUT... ↓

? Would letting students use AI undermine their learning and hinder your ability to monitor or evaluate it?

YES ↓

Invigilate

Have students demonstrate their learning via in-class activities, exams, etc. where AI use can be monitored

Mitigate

Flip your class, use alternative assessment types, leverage instructional technology tools

NO ↓

Integrate

Build AI into the assessment

Adapted from a flowchart by Frédérique Laubepin, University of Michigan.

“Stress Test" an Assignment

Option A: Use one of your own course assignments.
Option B: Select one of the provided sample assignments.

Choose an AI tool: (e.g., ChatGPT, Gemini, Claude, etc) and ask it to complete the assignment or a component part

Analyze: how AI handles different aspects of the task:

- Does it provide correct or factually sound answers?
- Does it demonstrate understanding or just surface-level knowledge?
- Does it offer creative solutions or replicate common responses?

To Inoculate .... Or Integrate?

AI Inoculation :

Focus on Process, Not Just Product: Shift assessment away from purely outcome-based evaluation. Reward students for demonstrating their thinking process, the choices they made, and justifications for their approach.

Embrace Ambiguity and Open-Endedness: Design tasks with multiple valid solutions or interpretations. This forces students to grapple with uncertainty and defend their reasoning, something AI models struggle with.

Leverage Local Context and Personalization: Ground assignments in real-world issues relevant to the students' community or field of study. Allow students to incorporate their own experiences and interests, making it harder to outsource work to an AI.

Integrate Peer Feedback and Revision: Build in phases for students to critique each other's work and iterate on their own. This fosters metacognition and develops the ability to judge the quality of information (both human and AI-generated).

Example Prompt Structure

ChatGPT

Course Name: [Introduction to Public Health]

Original Assignment: [Research Paper: Zoonotic Disease Outbreak: Intervention Response]

Learning Outcome: [Students will be able to analyze public health data and propose evidence-based interventions]

Additional Essential Criteria: [Use of peer-reviewed sources]

Redesign the assignment to include [**oral or video presentations and structured peer interaction**]. Anchor it in real-world contexts by referencing [**class activity X, discussion Y, or guest speaker Z**]. Have students apply concepts to [**community challenges and engage with stakeholders**]. Break the assignment into smaller iterative pieces, requiring metacognitive commentary on the process and development of each component. Ensure the redesigned assignment meets [**analyze public health data and propose evidence-based interventions** learning outcome].

AI Integration:

Foster AI Fluency and Responsible Use: Assignments that embed AI teach students practical AI tool usage and ethical decision-making surrounding its implementation.

Augment Creativity and Problem-Solving: AI becomes a collaborator, providing and interpreting data, enhancing research and investigative capacity, or generating initial drafts. Students learn to leverage it for exploration and refinement.

Prepare students to be AI collaborators, not just users: Assignments that emphasize critical thinking alongside AI usage help students learn how to ask the right questions of AI systems, craft targeted prompts, understand their limitations, and refine AI-generated work to ensure it meets their goals and relevant standards in their field of study.

Blended Strategies



Incorporating AI Tools



Transparent Design



Iteration and Individualization



Metacognition, Reflection, & Rationalization

Inoculation, or “AI- Proofing” Strategies

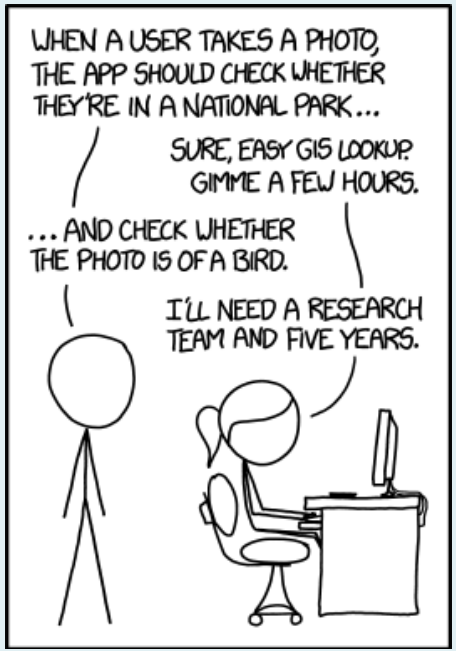
- **Embrace Multimodal Expression**:
  - Oral or Video Assignment Presentations
  - Structured, Peer to Peer Interaction
- **Anchor Assignments in Real World Contexts:**
  - Reference information from a unique class activity or discussion, guest speaker, etc.
  - Have students apply concepts to challenges within their community
  - Encourage engagement with stakeholders in student’s fields of study
- **Iteration/ Process As Product:**
  - Break assignments into smaller pieces that build on each other
  - Require metacognitive commentary on process and the development of an assignment’s component pieces

Integrating AI Into Assignment Design

- Build scaffolded student use of AI into the framework of assignments
- Have students analyze or manipulate AI output (metaLAB (at) Harvard)
- Leverage AI's Research potential (Perplexity, Semantic Scholar, ResearchRabbit, Litmaps)
- Rhetorical Engagements: "iteratively tinkering with and refining the set of instructions that guides the output of an LLM"
- Query Log: have students record detailed, iterative interaction with AI (think: a lab notebook) and provide specific reflection and analysis
- Data Democratization: AI provides unprecedented access to sophisticated analytics tools, even without a Data Science Background (Kaggle, Looker Studio, KNIME)
    - A groundbreaking opportunity for students to investigate, manipulate & apply complex data

Fundamental Design Principles & AI

- **Transparent Design:** Clearly outline the purpose, tasks, and criteria to deepen student engagement and understanding.
- **Backwards Design:** Start with the desired outcomes, then create aligned activities and assessments to ensure effectiveness.
- **Good design promotes critical thinking**, iteration (i.e. tinkering), metacognitive reflection, practical real world engagement, and rewarding personal insights. **In short, these principles naturally limit the potential (and student compulsion) for rote AI completion.**



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