

AI-Responsive Assignment Design for Human Learning

Begin with what students must learn and what evidence will make that learning visible.

4 MODES 6 PRINCIPLES 8 DIMENSIONS 5 GOALS

A The four modes

1 AI-Restricted ■■■■■■■■■■

AI is excluded because the assignment measures independent cognitive performance. *Is the cognitive act itself the learning?*

2 AI-Limited ■■■■■■■■■■

AI only for bounded support that reduces extraneous load; the intellectual core is the student's. *Which parts are peripheral to the learning?*

3 AI-Collaborative ■■■■■■■■■■

AI is openly part of the learning process; the student directs, evaluates, and integrates. *Does AI produce material the student must judge?*

4 AI-Required ■■■■■■■■■■

AI use is mandatory because skilled human-AI collaboration is the competency. *Is skilled AI use the professional competency here?*

All four modes have equal standing; the learning goal decides. Use a mix across a course. Bars: teal = student thinking, outlined = AI contribution, gold = AI output the student verifies.

B Six principles and their filters

1. **Cognitive Agency.** *Who is doing the thinking at each stage?*
2. **Learning Integrity.** *Does it still measure what it claims if a student uses AI?*
3. **Process Visibility.** *Can I see how the student got there?*
4. **Evaluative Judgment.** *Must the student judge AI output against disciplinary standards?*
5. **Productive Struggle.** *Has AI removed the difficulty that makes learning stick?*
6. **Equity and Access.** *Equal access? Trained? Any group disadvantaged? Any reliance on detection?*

Run every assignment through all six. If it fails one, redesign that part.

Transfer Gap Check. Assess every major outcome at least once under AI-Restricted conditions, on the same dimensions as the assisted task. Gap of one level or less: the learning transferred. Gap above one level: the learning is tool-dependent.

C Eight rubric dimensions

1. **Cognitive Agency.** Does the student own the intellectual work?
2. **Evaluative Judgment.** Do they assess AI output against disciplinary standards?
3. **Process Evidence.** Is the thinking visible and documented?
4. **Metacognitive Depth.** Do they show awareness of their own thinking?
5. **Prompt Quality.** How well do they direct the AI?
6. **Verification Quality.** Did they test, challenge, and improve the output?
7. **Disciplinary Judgment.** Do they apply course knowledge and standards?
8. **Transfer.** Can they perform independently in a new context?

Levels: **Beginning** → **Developing** → **Proficient** → **Exemplary**. Choose 3 or 4 per assignment.

Two anti-gaming anchors. Evaluative Judgment at Exemplary: correct at least one AI claim citing a course reading **by page or section**. Process Evidence at Exemplary: at least one **observed-setting artifact**.

D The GOALS process

- G Goal.** Define the human learning target. → a one-sentence target statement
- O Openness.** Choose the AI mode with four questions, in order. → a mode plus a rationale for students
- A Architecture.** Design for visible thinking: formative and summative phases. → a phased task sequence
- L Look for Evidence.** Align the rubric. → 3 or 4 dimensions with descriptors
- S Sustain.** Scaffold literacy, study results, re-run yearly. → a literacy plan and a review date

Four patterns. AI Sandwich: human brainstorm → AI expansion → human critique. **Verification Challenge:** AI output → student finds errors → corrects from course materials → explains. **Comparative Analysis:** several AI responses → student evaluates with a framework → synthesizes → defends. **Generative Challenge:** primary data, recent events, or lived experience → AI output falls short → student produces original work.

E Seven redesign questions

1. What is the most important learning outcome?
2. What could a student outsource to AI while bypassing that learning?
3. Which ARAD mode fits?
4. What evidence of human reasoning, performance, or judgment do you need?
5. What task feature should be added, removed, or changed?
6. Which rubric criterion should be revised?
7. What must students be told about acceptable AI use?

Short on time? Answer 1, 3, and 5.

F Implementation checklist

- ☐ Run the assignment through a current model and score it honestly
- ☐ Write the one-sentence learning target
- ☐ Choose the mode and write the rationale for students
- ☐ Add one artifact that makes thinking visible
- ☐ Remove something to make room
- ☐ Select 3 or 4 rubric dimensions
- ☐ Write the AI-use statement, including the opt-out pathway
- ☐ Plan the AI literacy primer
- ☐ Schedule the Transfer Gap Check
- ☐ Set the annual review date

NOTES



Slides, worksheet, and interactive tools: evolveaiinstitute.com/arad

Presenter: Tim Mousel, Founder, Evolve AI Institute · evolveaiinstitute.com

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Evolve AI Institute. evolveaiinstitute.com/edai/blog/arad-2-ai-responsive-assignment-design.php

Begin with what students must learn and what evidence will make that learning visible. The AI decision follows.