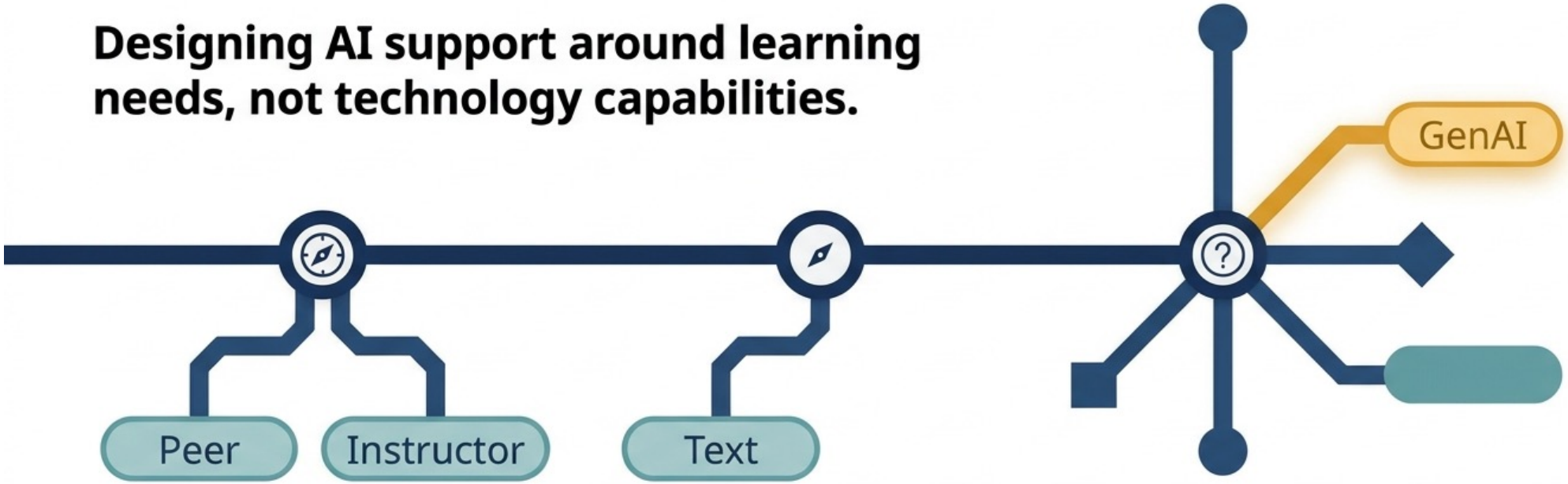
AI at the Right Moment

Designing AI support around learning needs, not technology capabilities.



Dr. Brian Beatty and Dr. Zahira Merchant
San Francisco State University | AECT 2026

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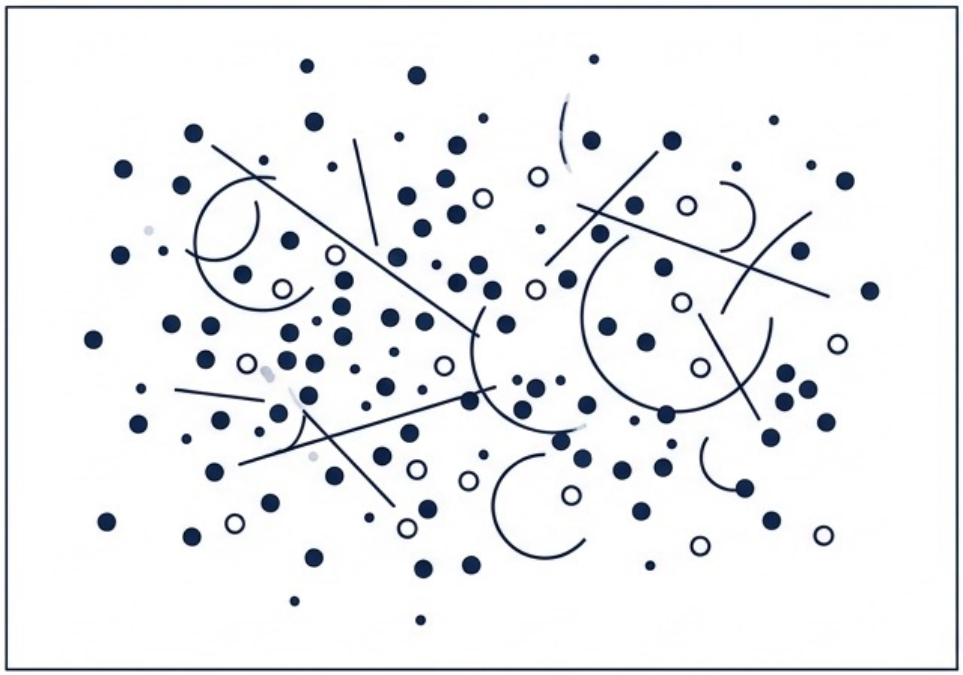
The Problem: AI Everywhere?

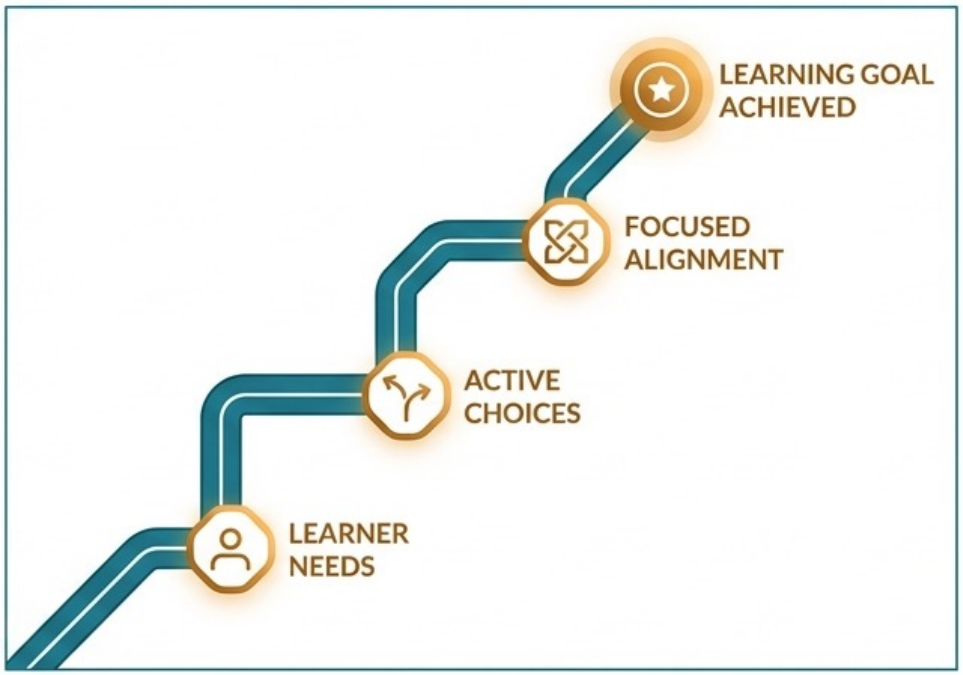
More AI use ≠ better learning.

TOOL-FIRST: What can AI do?



"Add AI wherever possible."

LEARNING-FIRST: What does this learner need?



"Choose support deliberately."

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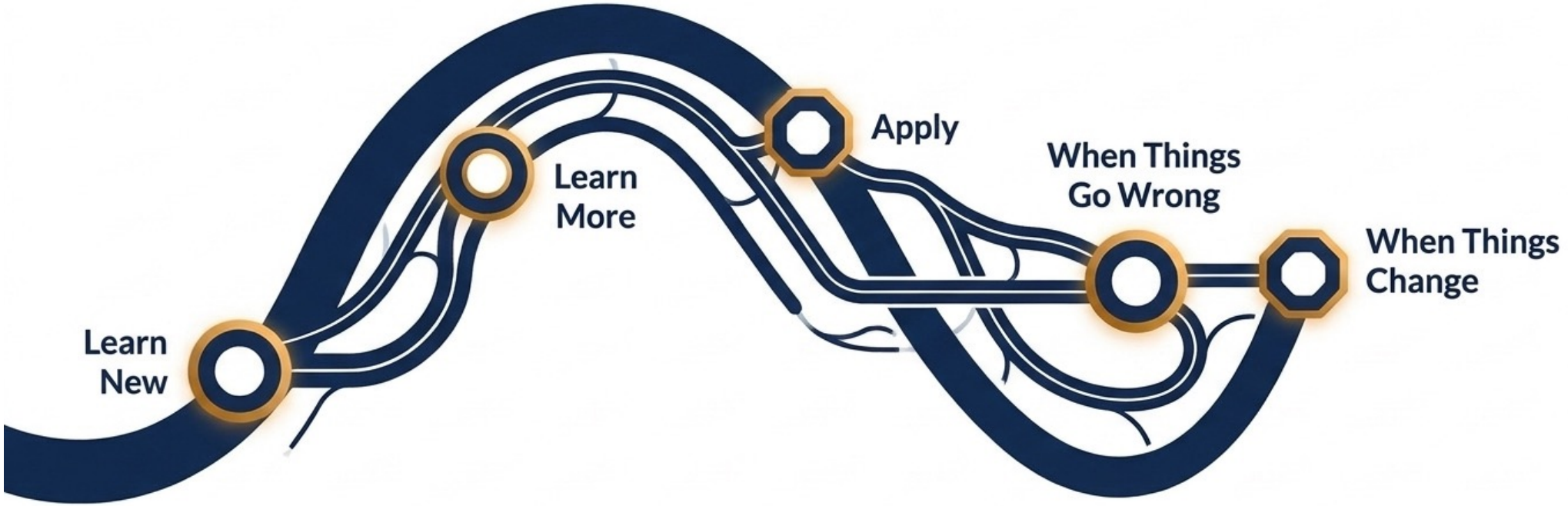
Five Moments of Need

Learn New · Learn More · Apply · When Things Go Wrong · When Things Change



Adapted from Gottfredson and Mosher (2011).

Gottfredson, C., & Mosher, B. (2011). Supporting Performance @ All Five Moments of Need. In *Innovative Performance Support: Strategies and Practices for Learning in the Workflow*. McGraw-Hill Education.

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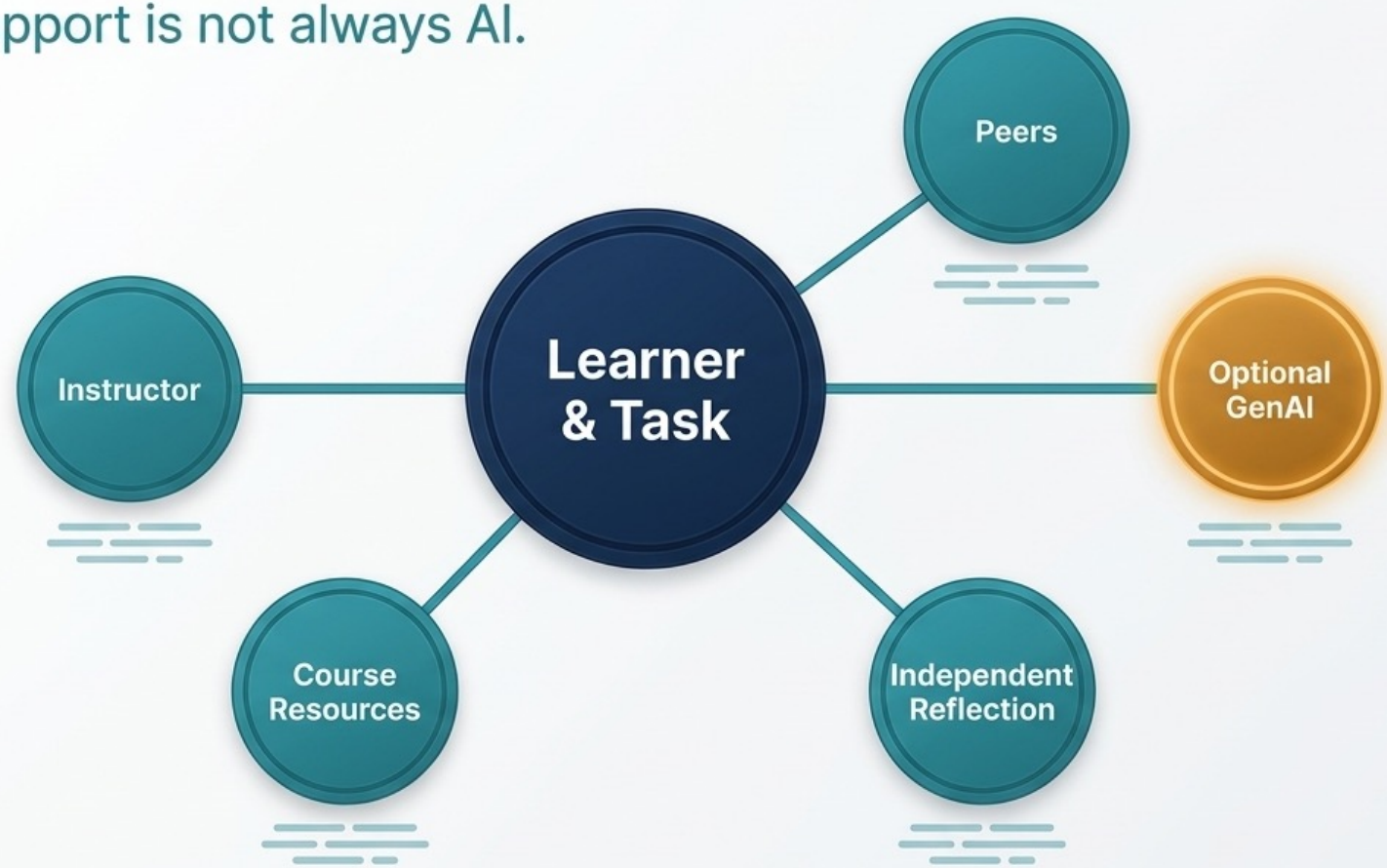
AIMON: Learning First, AI Second

The right support is not always AI.



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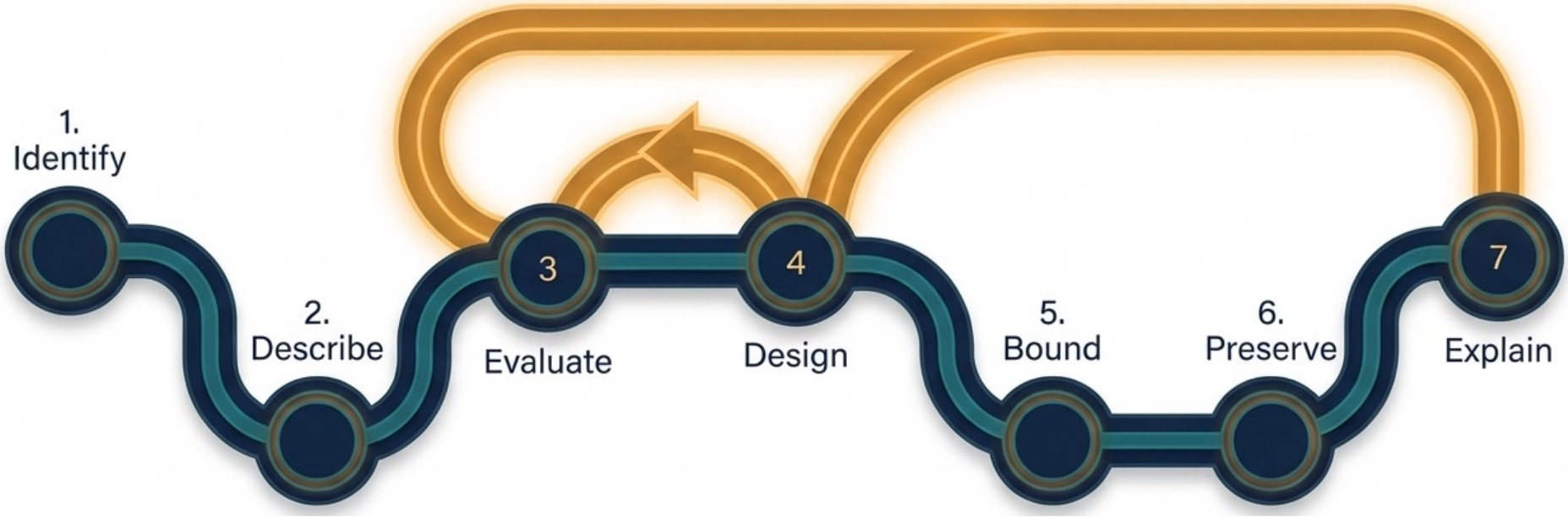
AIMON
Design
Principles
Learning
Before
Tools
People
Before
Technology
Support,
Not
Substitution
Learner
Agency &
Choice
Critical
Thinking &
Judgment
Access
Across
Pathways
Reasoned
Non-Use
AI

Design Principles for AIMON

1. **Learning Before Tools**: Start with the learning need, not what AI can do.
2. **People Before Technology**: Design for learners and their contexts, not just technological capabilities.
3. **Support, Not Substitution**: Use AI to strengthen learner thinking, not do the thinking for them.
4. **Learner Agency and Choice**: Keep learners in control of when, how, and whether they use AI.
5. **Critical Thinking and Judgment**: AI should invite questioning and reasoning, not just deliver answers.
6. **Access Across Pathways**: Make meaningful learning support available through AI and non-AI pathways.
7. **Reasoned Non-Use**: Choosing not to use AI can be just as intentional as choosing to use it.

Seven Steps for Intentional Design

Identify → Describe → Evaluate → Design → Bound → Preserve → Explain



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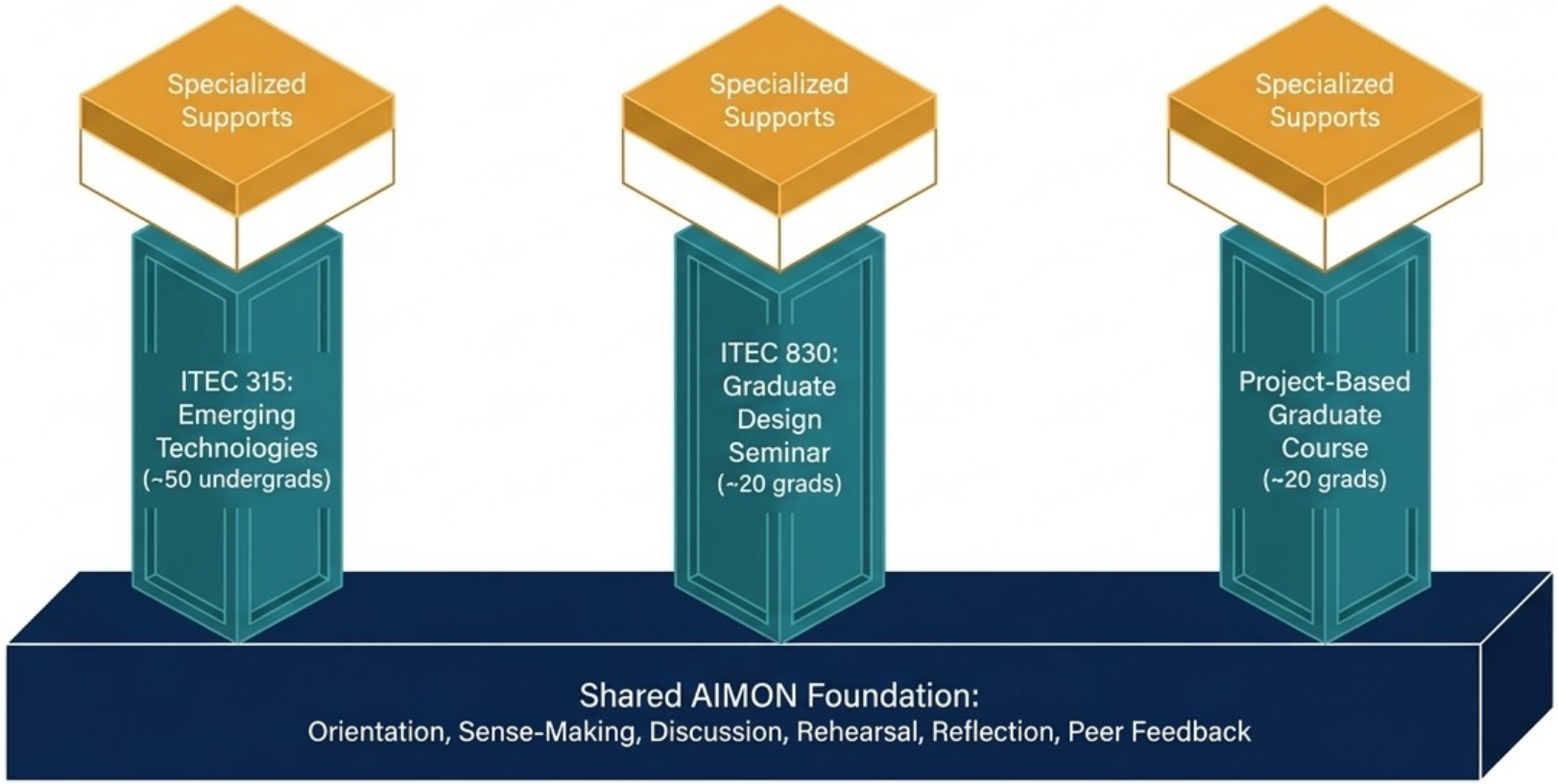
AIMON Intentional Design Steps

1. **Identify**: Find the moments when learners may need additional support.
2. **Describe**: Clarify what learners are trying to accomplish and why it may be challenging.
3. **Evaluate**: Decide whether AI is appropriate or another form of support would be better.
4. **Design**: Create AI support that responds to the learning need and encourages active thinking.
5. **Bound**: Set clear limits on what AI should and should not do for learners.
6. **Preserve**: Protect learner agency, critical thinking, and meaningful learning work.
7. **Explain**: Make the purpose, benefits, and boundaries of AI support clear to learners.

Three Courses, One Framework

Common principles. Different learning contexts.



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ITEC 315: Support Across the Learning Arc

Map moments of need to purposeful learning supports.



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AIMON Across ITEC 315

Recurring moments of learning need, targeted GenAI support

GETTING STARTED I Weeks 1-2
Understand expectations, plan learning, explore support options

Course Syllabus Explorer I My Learning Helper

	LEARN NEW MATERIAL New / More	APPLY IN ASSIGNMENT Apply / Problem	REVIEW & REVISE Problem / Change
CYCLE 1 Weeks 3-6 **A1 Contextual Analysis**	**My Learning Helper** Quiz Me! I ReSpeak Understand, question, practice	**Practicing Social Science Studio (PSSS)** Analyze, interpret, develop	**Peer Review Partner** My Learning Helper Critique, decide, improve
v repeat the learning-support cycle			
CYCLE 2 Weeks 7-10 **A2 Digital Story**	**My Learning Helper** Quiz Me! I ReSpeak Understand, question, practice	**Practicing Social Science Studio (PSSS)** Analyze, interpret, develop	**Peer Review Partner** My Learning Helper Critique, decide, improve
v repeat the learning-support cycle			
CYCLE 3 Weeks 11-15 **A3 Design / Policy Brief**	**My Learning Helper** Quiz Me! I ReSpeak Understand, question, practice	**Practicing Social Science Studio (PSSS)** Analyze, interpret, develop	**Peer Review Partner** My Learning Helper Critique, decide, improve

THROUGHOUT Human discussion I Learner choice I Verification I Non-AI alternatives

Support follows learning need; students retain responsibility for interpretation, decisions, and final work.

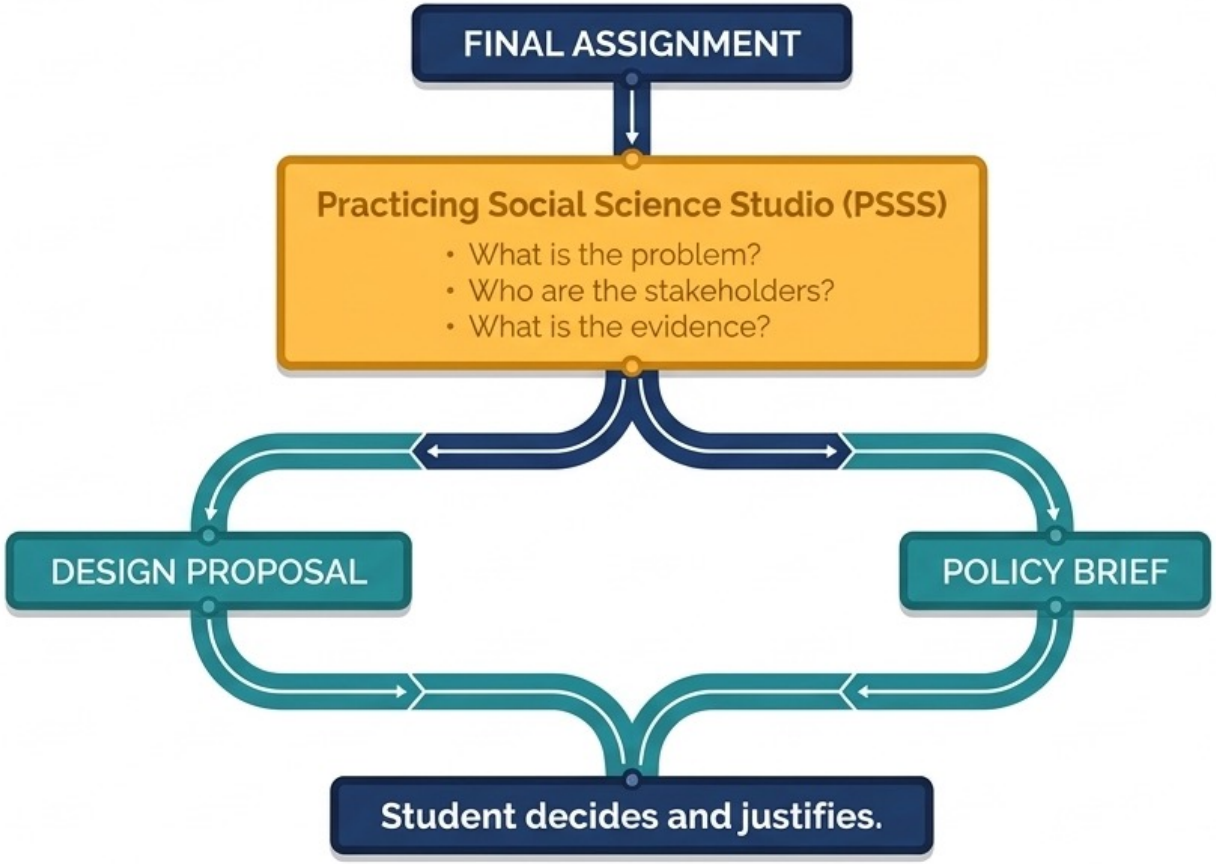
AIMON Mapping Example: Assignment 1 – Contextual Analysis

ITEC 315 • Example mapping of assignment stages to learner need, Five Moments of Need, student action, and highly encouraged AI support.

Assignment stage / student task	Likely learner need	AIMON / Five Moments lens	What the student is trying to do	Highly encouraged AI support	How the AI supports learning
1. Getting oriented to the assignment	"I'm not fully sure what this assignment is asking me to do."	New	Understand the purpose of the contextual analysis, what counts as "context," what the deliverable looks like, and how the assignment will be evaluated.	Course Syllabus Explorer; My Learning Helper	Helps students interpret the prompt, clarify expectations, and break the assignment into manageable parts without waiting for instructor response.
2. Choosing or narrowing a context to analyze	"I have several possible contexts, but I'm not sure which one is most workable."	Apply / Things go wrong	Compare possible settings, decide on a focus, and identify a context that offers enough substance for meaningful analysis.	My Learning Helper	Supports brainstorming, narrowing scope, and planning next steps through guided questioning and reflection.
3. Identifying relevant contextual factors	"I know the setting I want to study, but I'm not sure what kinds of factors I should pay attention to."	New → More	Identify the social, instructional, technological, organizational, or learner-related factors that shape the context.	Practicing Social Science Studio	Prompts students to look more closely at people, practices, constraints, relationships, and structures in the setting rather than staying at a surface descriptive level.
4. Applying course concepts to the chosen setting	"I understand the concepts from the course, but I'm not yet sure how to use them in this real situation."	Apply	Connect ideas from readings and course discussions to the specific educational context being analyzed.	Practicing Social Science Studio; Quiz Me! (especially scenario-based questioning)	Helps students practice disciplinary thinking by applying concepts to a real case, testing interpretations, and checking whether they understand key ideas well enough to use them analytically.
5. Working through ambiguity or uncertainty in the analysis	"This context is messy and I'm not sure what matters most or how to interpret what I'm seeing."	Things go wrong	Sort through competing possibilities, clarify the significance of different contextual features, and decide what to foreground in the analysis.	Practicing Social Science Studio; Breakout Companion	Supports exploratory reasoning, perspective-taking, and talking through a complex context before committing to an argument in writing.
6. Organizing the draft	"I have notes and ideas, but I need to turn them into a coherent analysis."	Apply / Change	Develop a structure, decide on main claims, and connect examples or evidence to those claims.	My Learning Helper	Helps students move from notes and observations to a workable structure and writing plan.
7. Checking whether the explanation is clear and readable	"I think I know what I mean, but I'm not sure whether my explanation makes sense to someone else."	Change	Review clarity, flow, and readability of the draft before peer review or submission.	ReSpeak	Converts dense or formal prose into more spoken-style language so students can hear whether their explanation is clear, coherent, and easy to follow.
8. Giving or using feedback on the draft	"I need help identifying what is working and what still needs revision."	Change	Review the draft against assignment criteria, reflect on feedback, and decide what to revise before final submission.	Peer Review Partner	Structures the review process around criteria and helps students turn feedback into revision decisions rather than just collecting comments.
9. Final confidence check before submission	"I want to make sure I've actually met the expectations of the assignment."	Apply / Change	Compare the final draft to the prompt and rubric, confirm completeness, and identify any last gaps.	Course Syllabus Explorer; My Learning Helper	Helps students verify alignment with assignment expectations and reflect on whether the final version does what the assignment asks.

Zoom In: Practicing Social Science Studio

AI prompts the reasoning. The student chooses the path.



Illustrative Interaction

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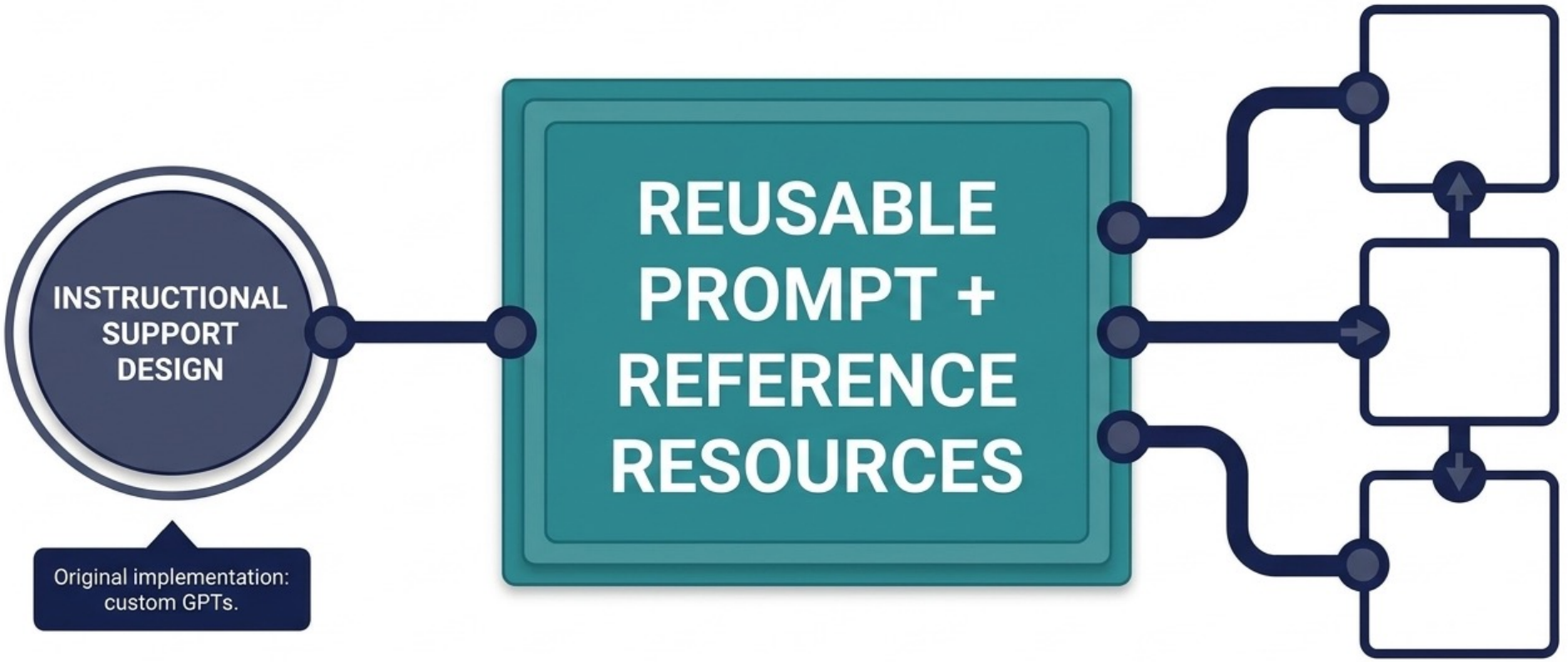
From Custom GPTs to Portable Supports

Preserve the instructional design, not the platform dependency.



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What Are Students Telling Us?

Across pre and post surveys, students describe AI as situational support, not a default.

WHERE AI HELPED MOST

72% making sense of complex ideas

52% planning or organizing work

51% getting started or orienting

WHEN AI WAS USED

55% often or very often to get unstuck

52% often or very often to reflect or revise

38% often or very often to make sense of concepts

WHY STUDENTS HELD BACK

95/110 chose non-use when AI was available

67% wanted to test their own understanding

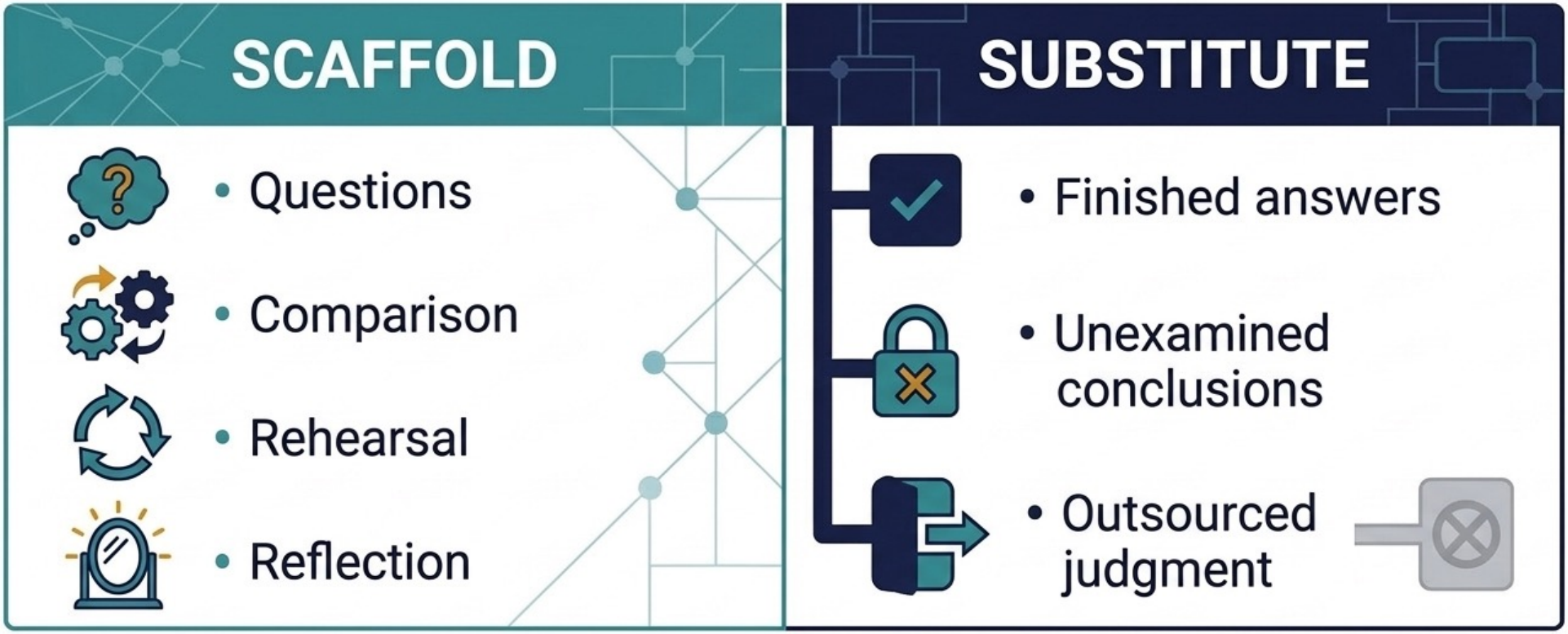
49% were concerned about over-reliance

Post-course n=110; pre-course n=71. Pre-course baseline: 56% reported occasional AI use for learning, and 46% were not familiar or only slightly familiar.

Multi-select percentages may exceed 100%.

Support Without Substitution

Reduce unnecessary barriers. Preserve productive struggle.



Wood, Bruner, & Ross (1976) | Kapur (2008).

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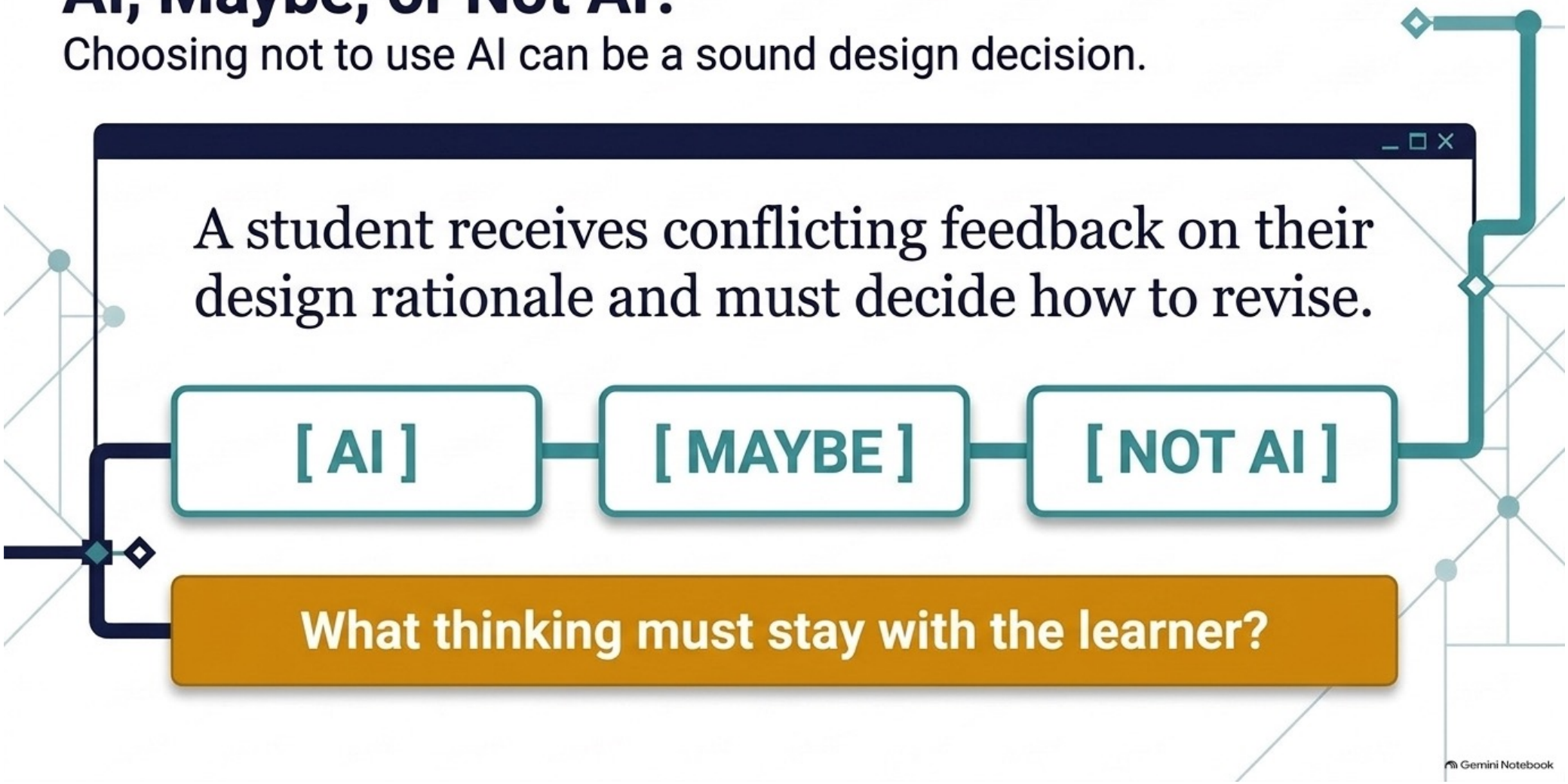
AI, Maybe, or Not AI?

Choosing not to use AI can be a sound design decision.



What AIMON Offers Designers

Recognize the need → select and bound support → preserve learner responsibility.



Adaptable across courses and platforms.

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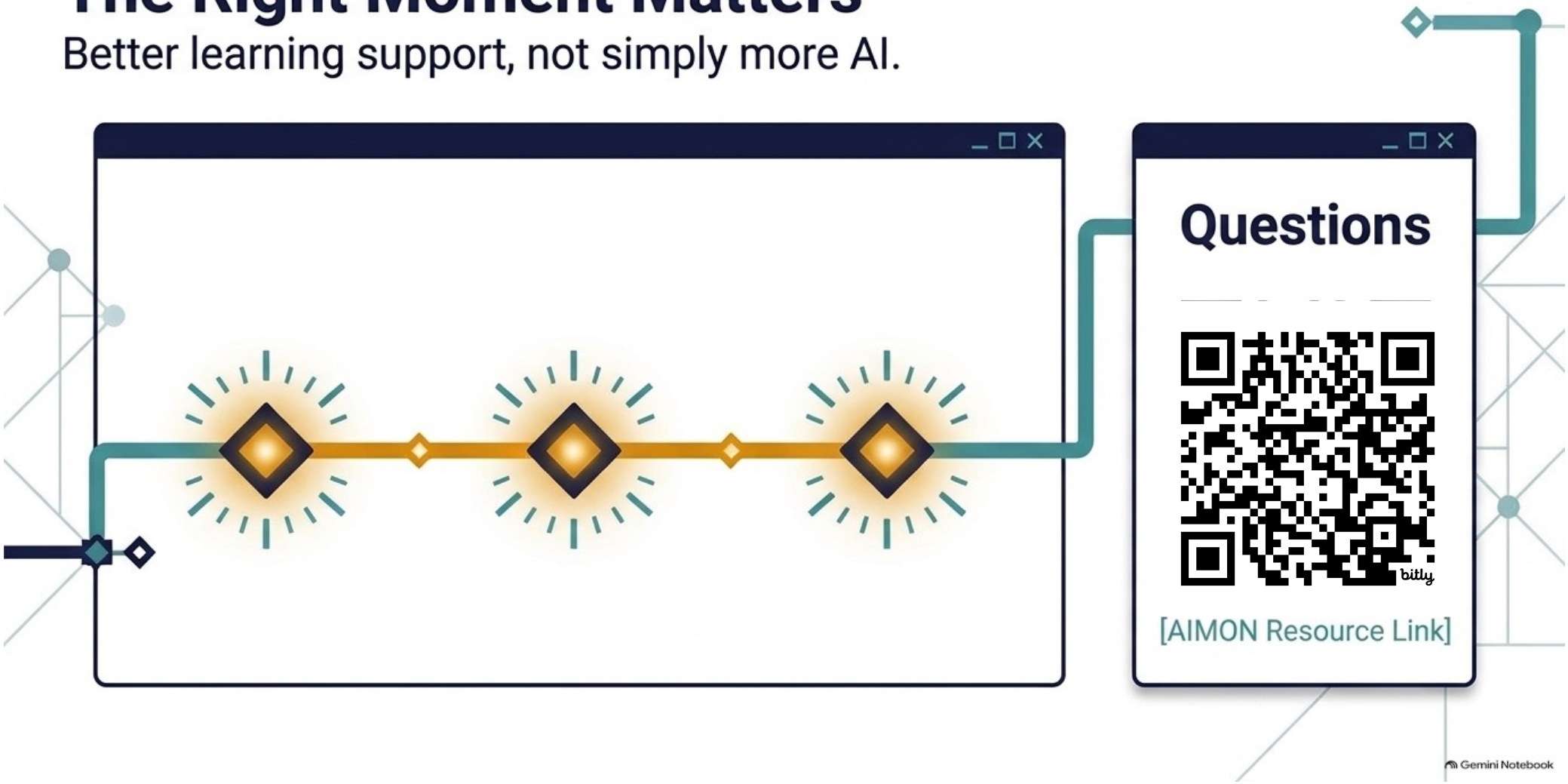
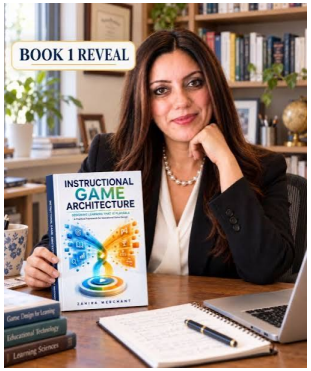
The Right Moment Matters

Better learning support, not simply more AI.





https://www.hyflexlearning.org/aimon/



Dr. Brian Beatty
bjbeatty@sfsu.edu
Professor and Chair
Department of Equity, Leadership Studies,
and Instructional Technologies
San Francisco State University
Hyflex Learning Community

Dr. Zahira Merchant
zahiram@sfsu.edu
Professor and IDT Program Coordinator
Department of Equity, Leadership Studies,
and Instructional Technologies
San Francisco State University

Contact and More Information