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H5P and the Art of Active Learning: Designing Engaging Activities

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Workshop Objectives

1. Compare the impact of passive listening versus active engagement on student retention by analyzing a live demonstration.
2. Select the appropriate H5P content type to align with specific instructional goals like recall or critical thinking.
3. Design a plan for a decision-based activity that transforms a static course resource into an active learning event.

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The Passive Learning Trap

The Reality

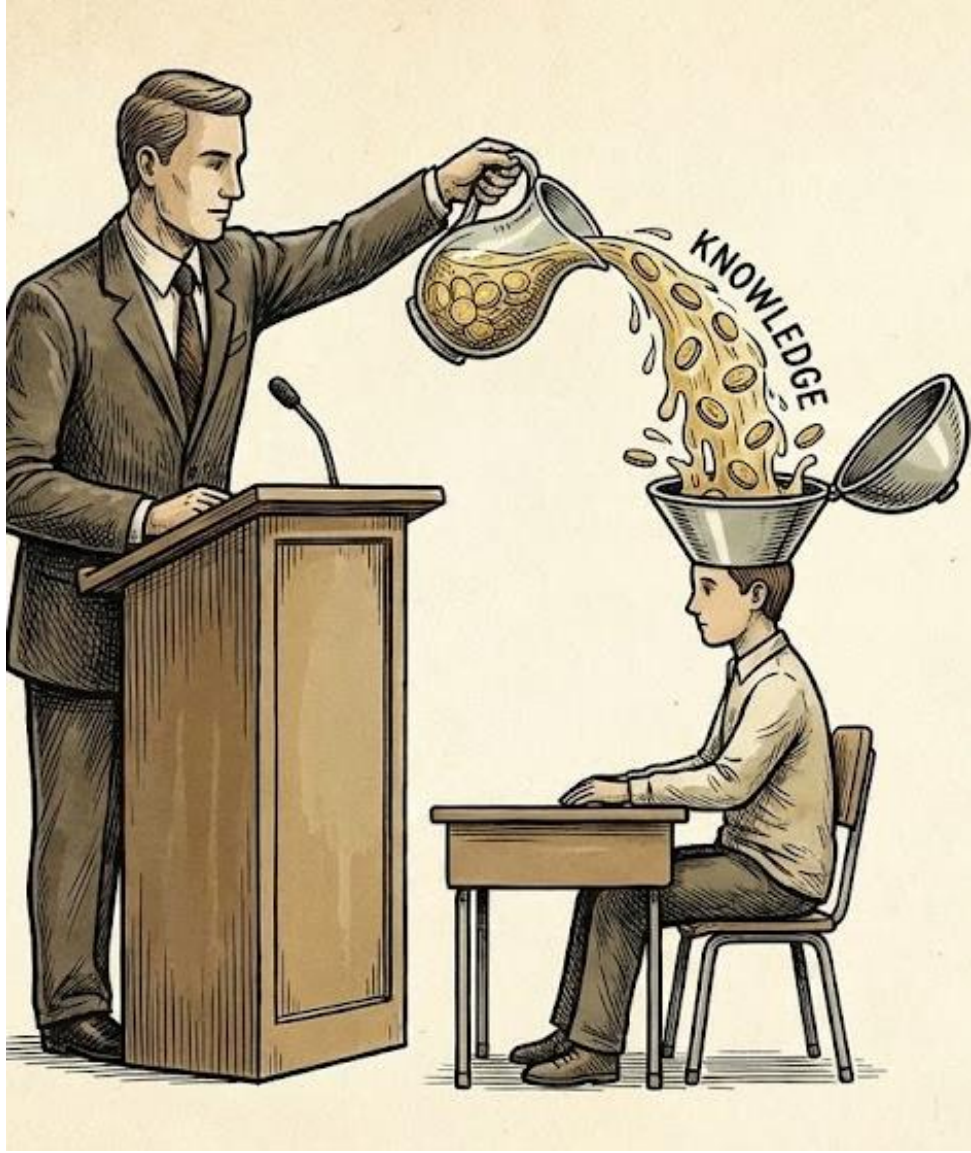
- Students often positioned merely as listeners.

The Problem

- "Deposit" model of knowledge (Transactional/Didactic).

The Data

- Average attention span for passive reception: **10–20 minutes**.
- Low Retention: Students struggle to recall knowledge they don't use.



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Why Active Learning?

Definition

- Involves students *doing* things and *thinking* about what they are doing.

The Impact (Data Dashboard)

- **32% → 21% Failure Rate Reduction**
  - Source: Freeman et al. (2014) meta-analysis of 225 STEM studies.
- **48% vs. 23% Performance Gains**
  - *Source: Hake (1998) survey of 6,000 Physics students*.

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Socio-Constructivism

The Shift

- From "Faculty Transfer" → "Student Construction".

Core Concept

- Knowledge is forged like a blacksmith, not collected in a basket.

The Engine of Learning

- "Socio-Cognitive Conflict" (Friction/Debate).

The Goal

- Negotiation of shared meaning.

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Let’s take a Poll

Poll Question

- "Lecturing is still the most efficient way to ensure students get the facts."
  - Option A: Agree
  - Option B: Disagree

Concept

- Demonstrating "Socio-Cognitive Conflict".

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The Coin Puzzle

A Lesson in Multimodal Processing

The Coin Puzzle

- "I have **7 coins**."
- "Their total value is **$1.00**."
- "I only have **quarters** and **dimes**."
- "How many of each do I have?"

Your Task

- Solve it silently. (45 Seconds).

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Enter H5P (The Accelerator)

The Function

- A pedagogical accelerator that positions the learner as a designer/thinker.

The Faculty Role

- **Old:** Sage on the Stage (Sole Expert).
- **New:** Guide on the Side (Environment Designer).

The Goal

- Scale complex, iterative learning.

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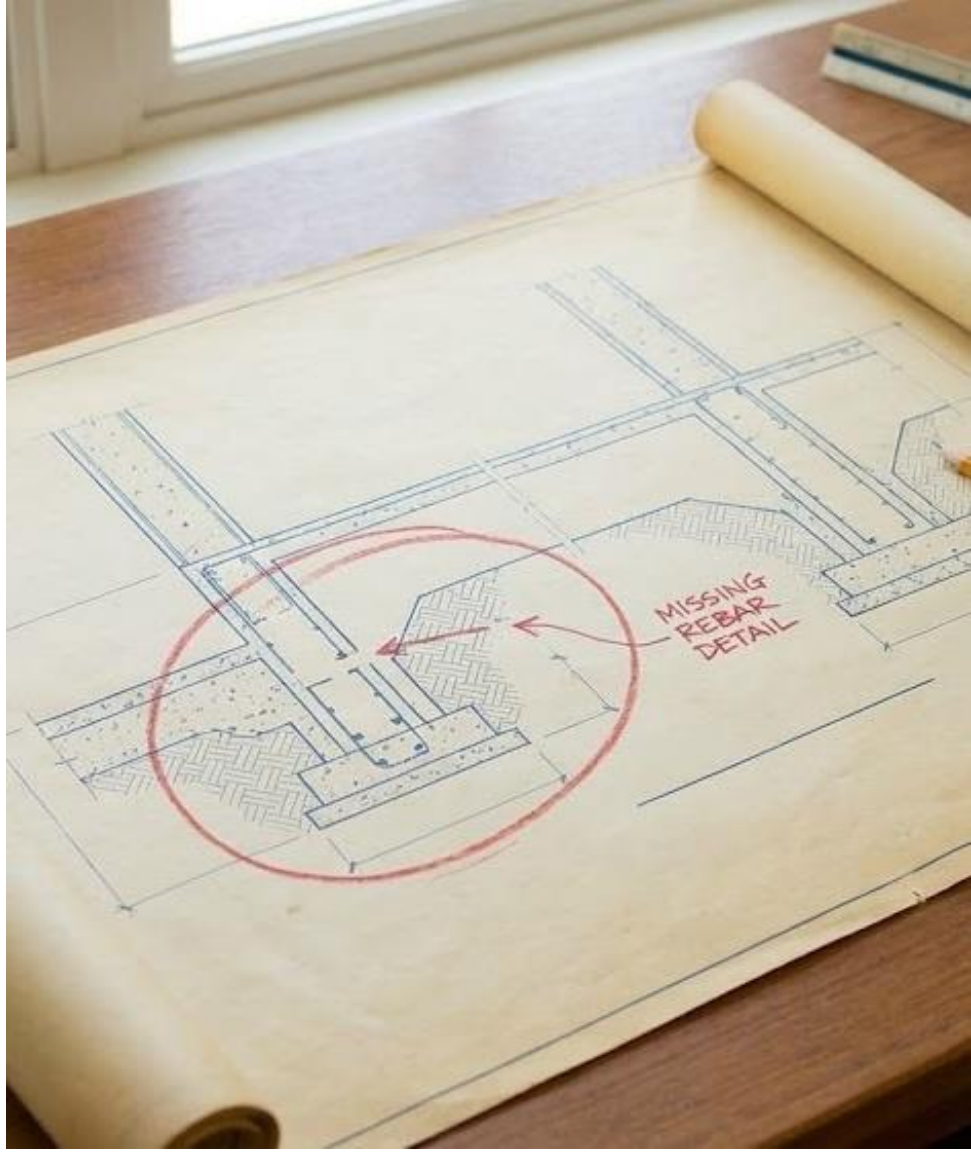
The Pre-Mortem

Design Challenge

- **Scenario**
  - Your students are failing the exam because they cannot remember the basic terminology.
- **Task**
  - In the chat, type **ONE** activity you would assign to fix this.

Goal

- Diagnosis before Design.



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The Design Workflow

Step 1: Define Goal

- Focus on one measurable outcome.

Step 2: Select Strategy

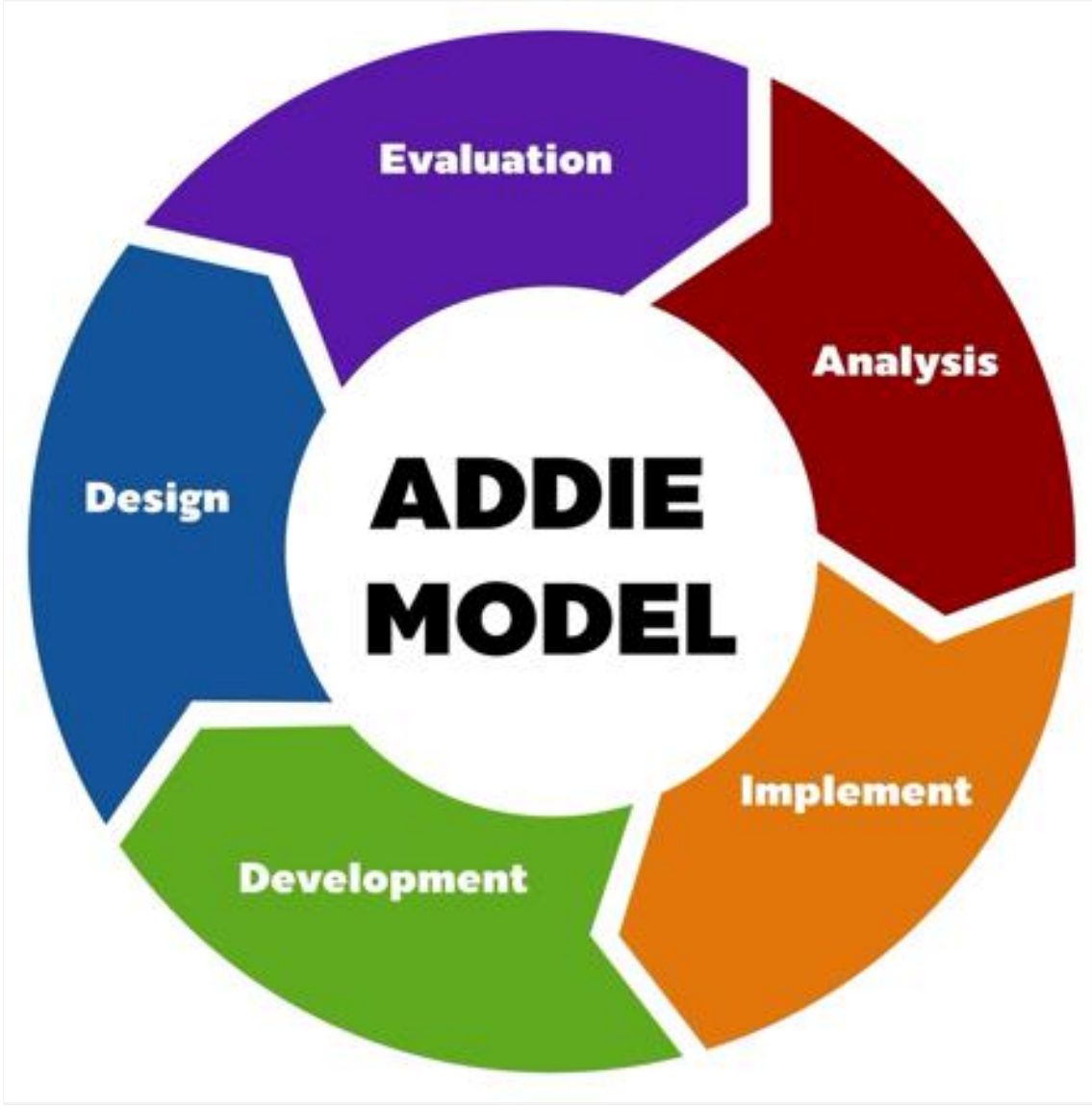
- (e.g., Problem-Solving vs. Recall) *before* choosing the tool.

Step 3: Build & Integrate

- Author and embed logically.

Step 4: Assess & Refine

- Use data to improve the design.



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Mapping Pedagogy to Tools

Bucket 1

- **Knowledge Checks (Low Stakes)**
  - See Handout
- **Goal**
  - Retrieval & Reinforcement.
- **Tools**
  - Flashcards, Question Sets.

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Mapping Pedagogy to Tools

Bucket 2

- **Application (Mid Stakes)**
  - Live Demo: Interactive Video
- **Goal**
  - Analyze Relationships
  - Manage Cognitive Load
- **Tools**
  - Interactive Video, Drag and Drop.

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Mapping Pedagogy to Tools

Bucket 3

- **Synthesis (High Stakes)**
  - Live Demo: Branching Scenario
- **Goal**
  - Simulate real-world dilemmas.
- **Tools**
  - Branching Scenarios.

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Mapping Pedagogy to Tools

Bucket 1

Knowledge Checks (Low Stakes)

- Retrieval & Reinforcement.
- Flashcards, Question Sets.

Bucket 2

Application (Mid Stakes)

- Analyze relationships/Spatial organization.
- Interactive Video, Drag and Drop.

Bucket 3

Synthesis (High Stakes)

- Simulate real-world dilemmas.
- Branching Scenarios.

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Interactive Video

Breaks “Zombie Mode”

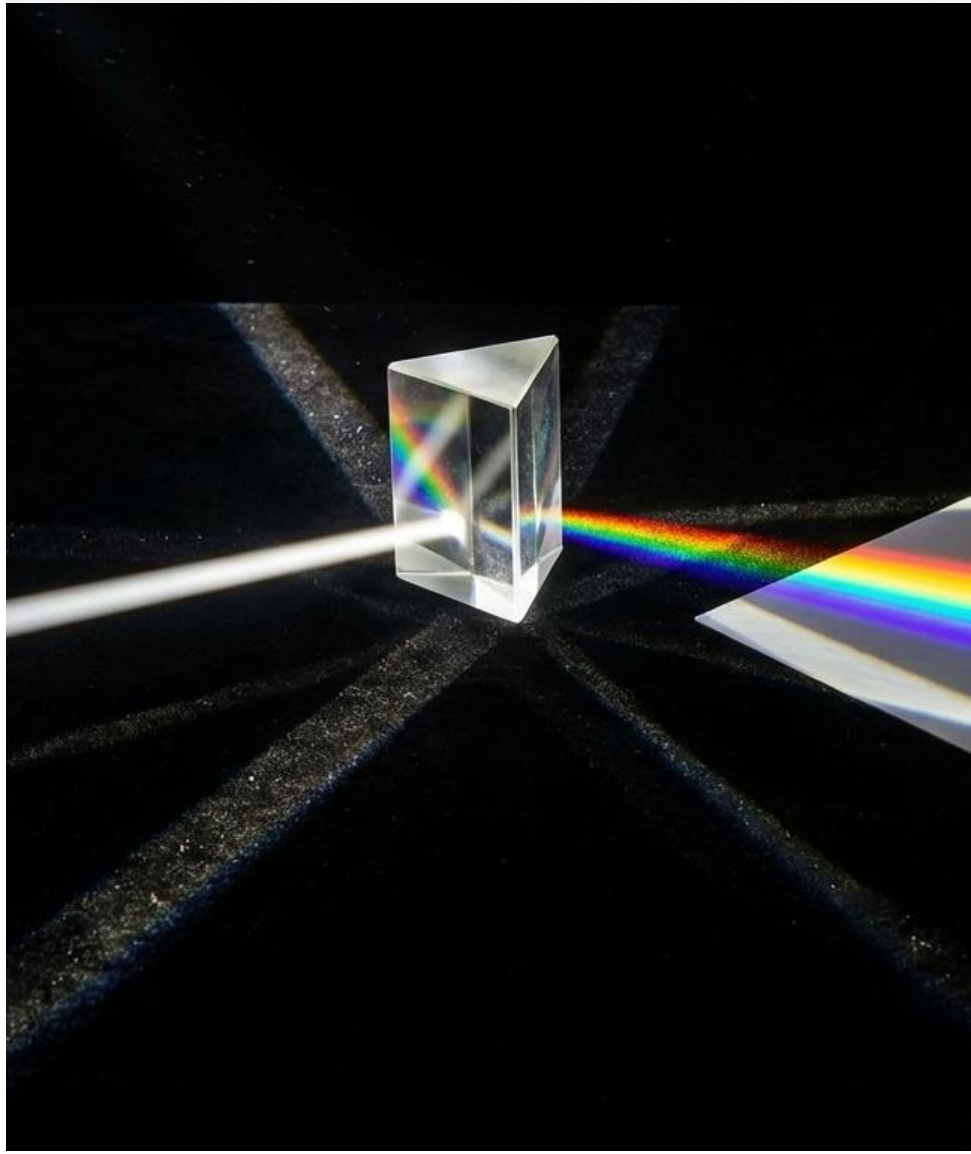
- Student *must* interact to move forward.

The "Pause”

- Forces retrieval and reasoning, not just consumption.

Cognitive Load

- "Chunks" content so the brain can process it.



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Branching Scenarios

The Flight Simulator

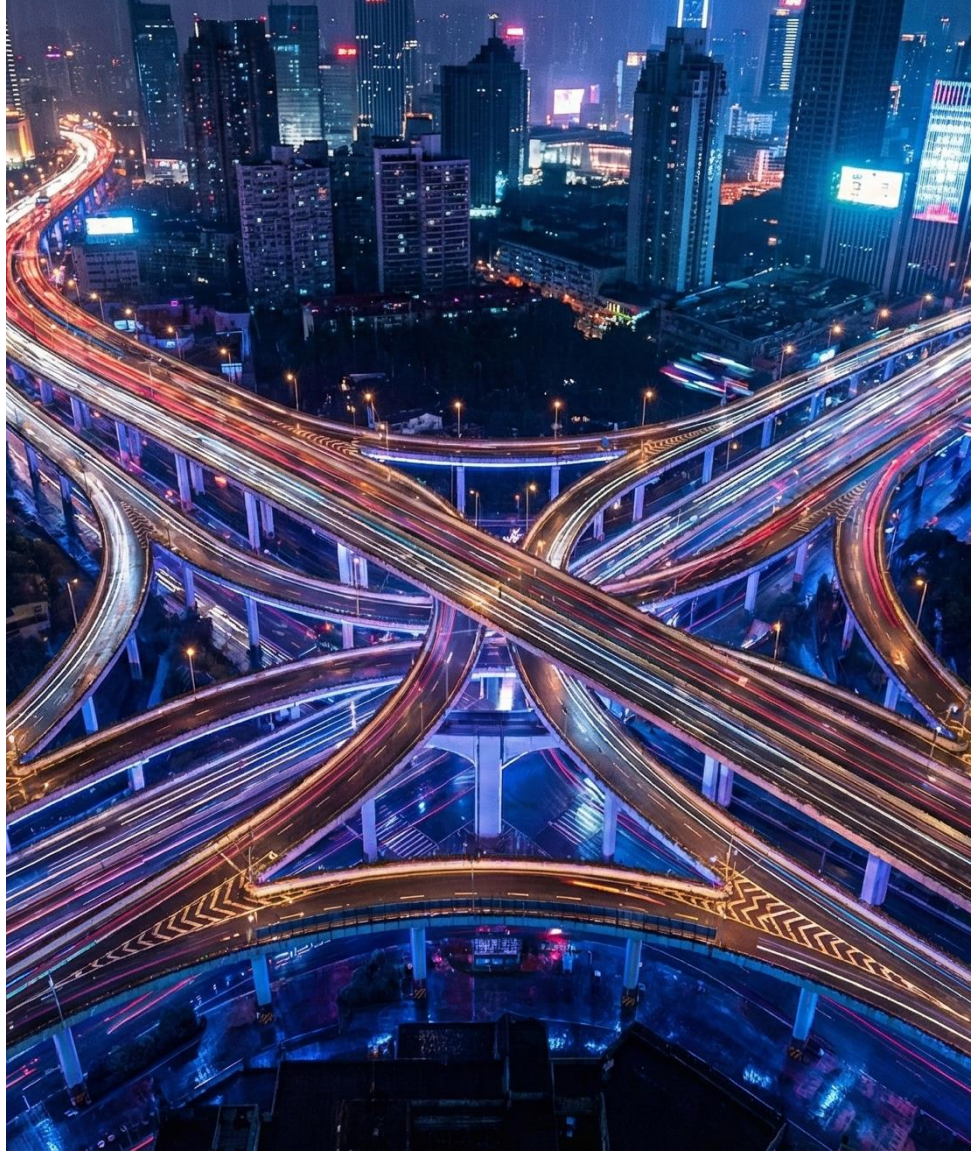
- A safe place to fail.

Real Consequences

- Errors lead to actual outcomes

Emotional Impact

- Stronger memory trace than quizzes.



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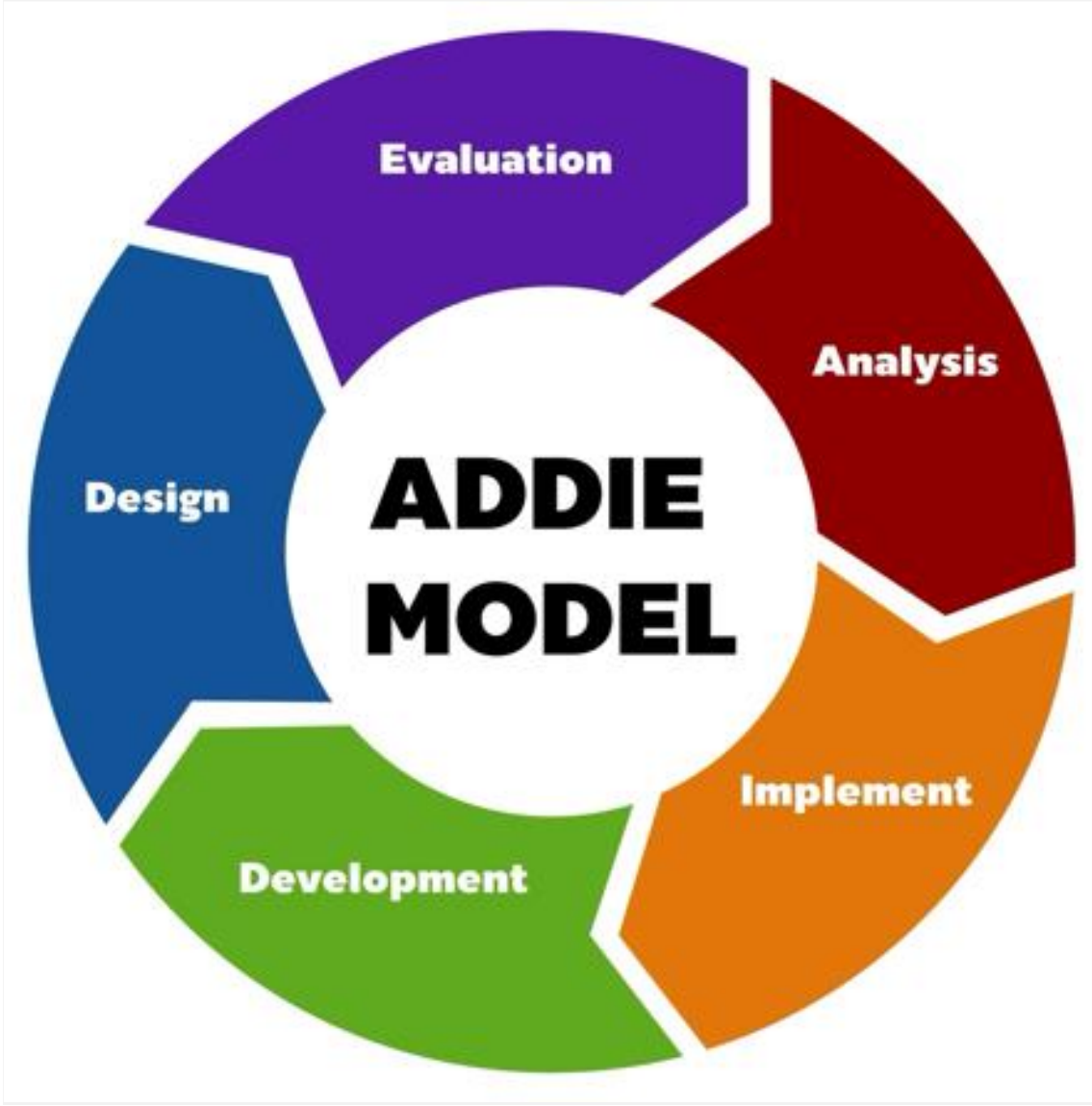
The Safety Check

Run this before you publish

- **Did I define one measurable goal?**
- **Did I pick strategy before tool?**
- **Is it embedded, not linked?**
- **Will I check the data?**



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Your Turn

The 2-Minute Audit

- Identify one static course resource.
- Define goal: Recall, Apply, Synthesize.
- Select the matching H5P tool.

Reflection

- Which tool makes it active?
- Can students build this themselves?

Discussion & Q&A

- Share your plan.
- Where are you stuck?

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Thank you.

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