



ILRN 2026 · ATHENS, GREECE

When AI Agents Become *Immersive*

A human-centered design and evaluation
framework for educational AI agents.

PRESENTER

Lisa Dawley, PhD

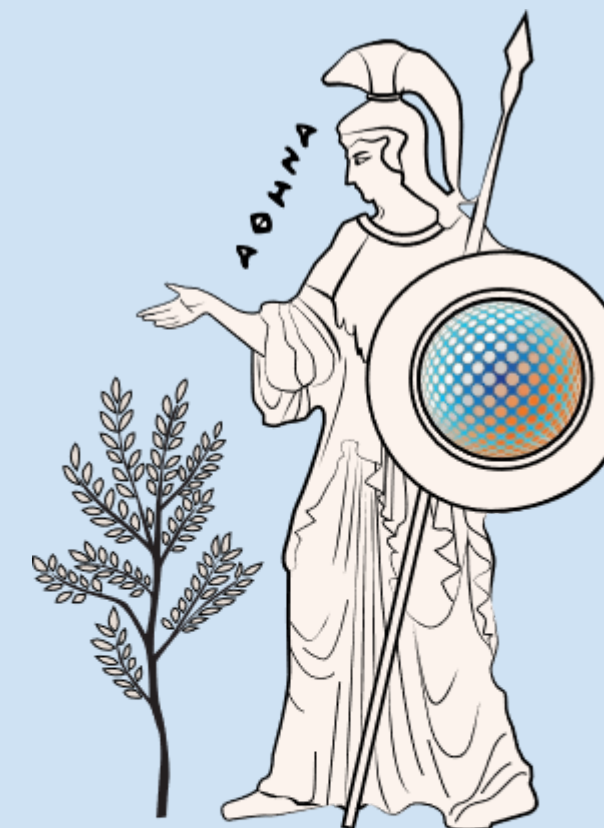
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SESSION

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Overview

1. When do AI agents genuinely support immersive learning?
2. Reframing Immersion for the Age of Conversational AI
3. The Human-AI Learning Design Framework
4. Designing Human-Centered AI: 5 Step Method
5. Evaluating Human-Centered AI: 10 Dimensions & Instrumentation
6. Implications for Educators and Designers

A QUESTION TWO DECADES IN THE MAKING

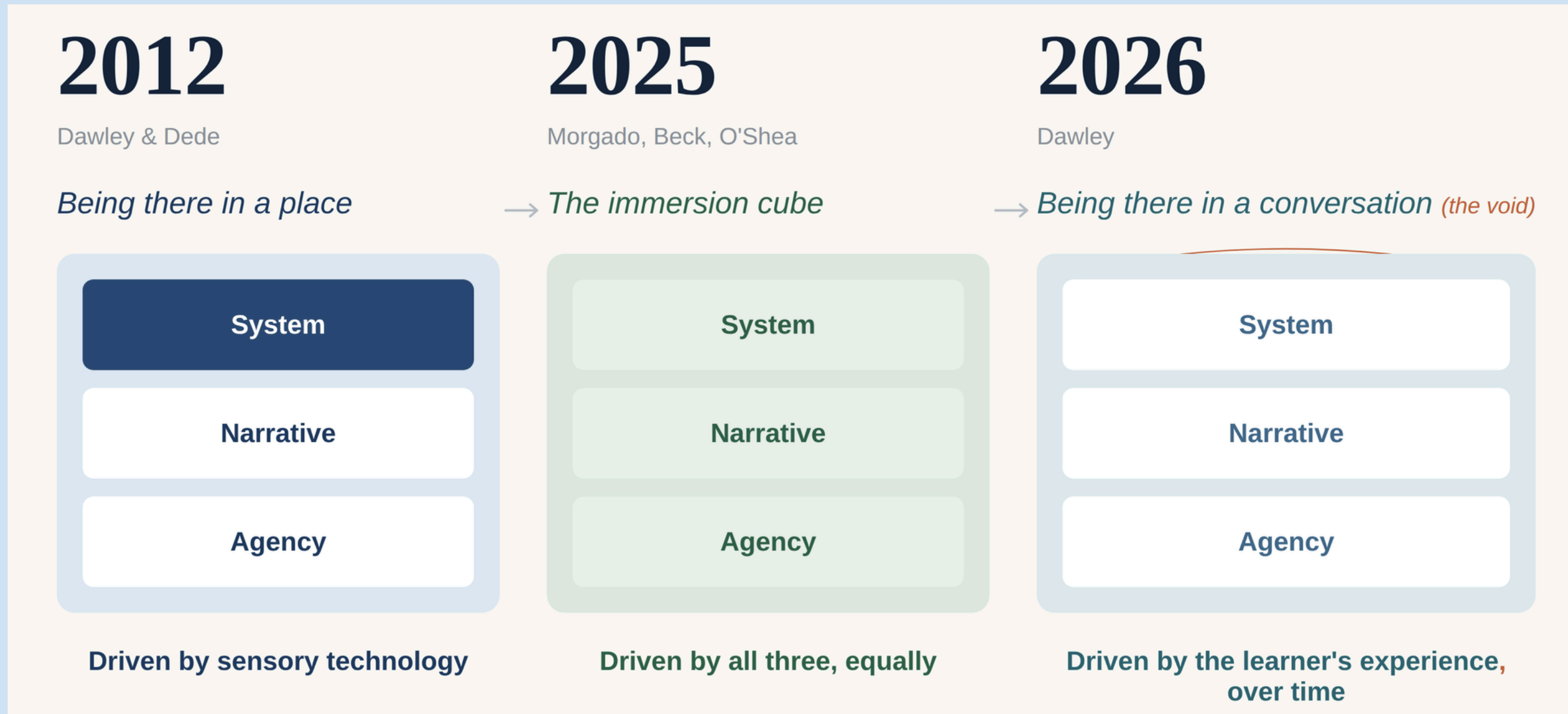
When do AI agents **genuinely support** immersive learning — and when do they merely create the *appearance* of interaction?



It echoes the question Chris Dede and I raised when we grounded immersive learning in **situated learning theory**: technological realism can be mistaken for learning. In 2012 the seductive surface was graphical realism; today it is conversational fluency. Both can **look** like learning without being it.

DAWLEY & DEDE (2012) · *SITUATED LEARNING IN VIRTUAL WORLDS & IMMERSIVE SIMULATIONS* ·
HANDBOOK OF RESEARCH FOR EDUCATIONAL COMMUNICATIONS & TECHNOLOGY, 4TH ED.

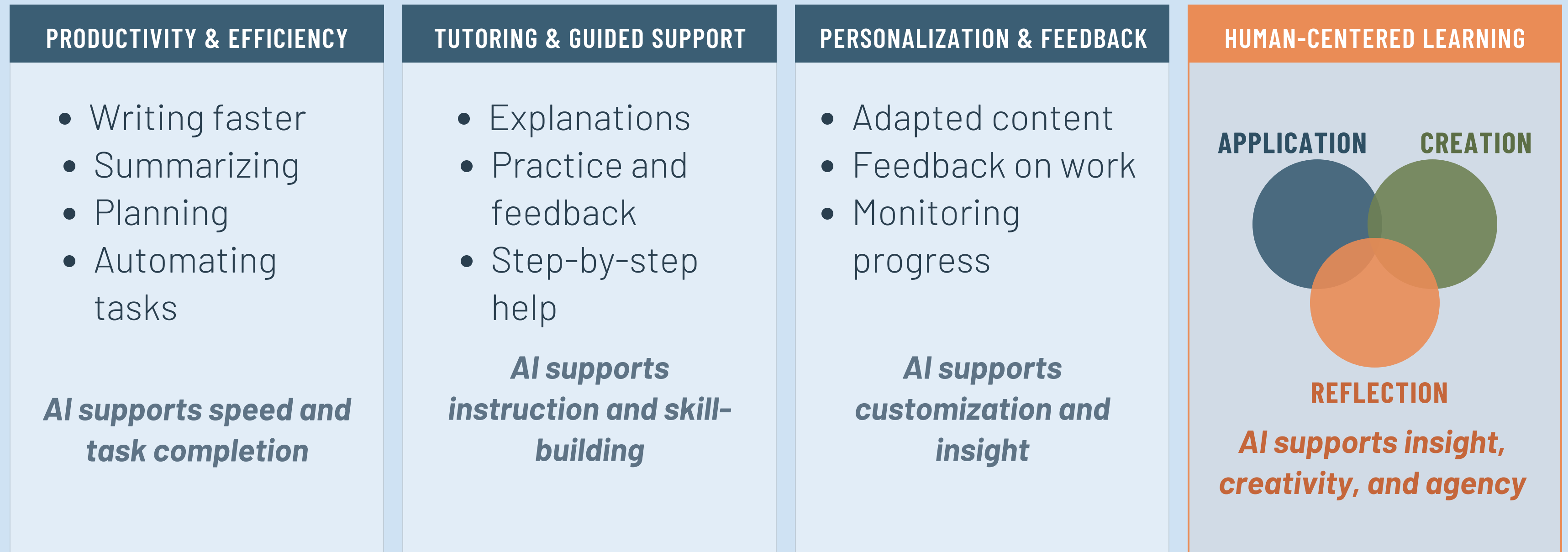
We still call it *being there*.



THE THROUGH-LINE

1. **Situated learning** stays constant, learning happens through participation in context.
2. **Context** is what evolved, a place you enter becomes a dialogue you co-construct over time.

Four Ways People Work and Learn with AI



THE SHIFT The first three optimize the task or the system. The fourth centers the **human** — agency, judgment, and meaning.

The Human-AI Learning Design *Framework*.

Three orientations describe how sense-making unfolds as learners attend to *themselves, ideas, and action* — each a core human learning process, each with a different role for AI.

ATTENTION TO SELF

Self-Reflection

AI AS MIRROR

Awareness of intention, emotion, uncertainty, and patterns — the agent reflects the learner's language back, it doesn't **resolve** it.

METACOGNITION & SELF-REGULATED LEARNING

Donker et al., 2014; Wass et al., 2023

ATTENTION TO IDEAS

Creation

AI AS COLLABORATOR

Meaning-making through expression and synthesis — the learner stays the **author**, AI expands what's possible.

CONSTRUCTIVIST & GENERATIVE LEARNING

Fiorella & Mayer, 2016; Hmelo-Silver et al., 2007

ATTENTION TO ACTION

Application

AI AS THINKING PARTNER

Connecting learning to real contexts and decisions — judgment, transfer, and **responsibility** stay human.

EXPERIENTIAL & PROBLEM-BASED LEARNING; TRANSFER

Belland et al., 2017

- Unified by learning as developmental **sense-making** through dialogic interaction — prompting itself as a learning mechanism (Bruner, 1986).

RootHuman™ Five Steps Human-Centered AI Design



01

CLARIFY THE LEARNER

Who they are,
where they sit,
what they bring —
the context that
shapes everything
that follows.



02

DEFINE A CORE HUMAN OUTCOME

Name what the
learner should be
able to think, do, or
judge differently
after interacting.



03

MAP THE AI AGENT'S ROLES

Mirror,
collaborator,
thinking partner —
where AI supports
rather than
replaces human
judgment.



04

DESIGN INTERACTION MOMENTS

Sequence self-
reflection,
creation, and
application within
dialogue so
judgment has
somewhere to land.



05

DESIGN FOR SUSTAINED GROWTH

Revisit ideas
across sessions so
depth, articulation,
and reasoning
develop over time.

Two Guiding Questions → *Does this help a person think, create, and decide for themselves?*
Does this make a person more capable after using it?

A real example — *KidSpark AI*.



*KidSpark AI is a curriculum-design tool where the **educator is the learner** — turning storybooks and learning goals into hands-on block activities.*

01 CLARIFY THE LEARNER & CONTEXT

Educators designing standards-aligned lessons with physical blocks — classroom, after-school, and informal settings.

02 DEFINE THE HUMAN OUTCOME

Teachers gain confidence and capability to design context-specific curriculum around construction and spatial reasoning.

03 MAP THE AI ROLES

Productivity automates curriculum tasks; mirror, collaborator & thinking partner keep the teacher the final decision-maker.

04 DESIGN THE INTERACTION ARC

Mirror reflects the teacher's goals → collaborator helps them shape activities → thinking partner supports classroom use.

05 DESIGN FOR GROWTH

As teachers grow capable, the agent steps back and prompts them to author their own solutions — building real autonomy, not dependence.



Ten Dimensions of Human-Centered *immersive learning*.

All ten evaluate the learner's AI experience, scored 1 to 3 across three families.

PART A • ENGAGEMENT DYNAMICS (does the learner come, return, and go deeper?)

1 Attraction

First Pull

Does a first-time learner get an immediately clear reason to try it?

2 Adoption

Routine

Does it connect to a recurring need and become a go-to?

3 Persistence

Deepening

Does it get richer the longer the learner stays, rather than plateauing?

PART B • EXPERIENTIAL DIMENSIONS (what is the experience like?)

4 Relational Presence

Continuity

Does the AI feel like one continuous partner, not disconnected replies?

5 Learner Agency

Direction and Pace

Can the learner steer direction, depth, and pace?

6 Cognitive-Emotional Engagement

Attention and Challenge

Does it hold curiosity at a challenge level that feels right?

7 Contextual Coherence

Alignment to Purpose

Does it stay aligned with the learning purpose and goals?

PART C • LEARNING ORIENTATION (does it support meaningful learning?)

8 Reflective Depth

Reflection

Does it help the learner notice their own thinking, rather than hand over answers?

9 Creative Authorship

Creation

Does the learner generate and own the work, with AI expanding options?

10 Applied Judgment

Application

Does the learner carry learning into real decisions, with responsibility staying human?

Evaluating the *learner experience*.

The RootHuman™ Human-Centered AI Evaluation Tool is a **design reflection framework**, using a three point scale across 10 dimensions — usable in design reviews, prototyping, and post-implementation reflection.

Evaluating how learners **experience meaning, agency, and engagement** through interaction.

03 THE THREE-POINT SCALE

SCORE 1

Receptive

The learner mostly takes in what the app **delivers** — listening, receiving, following a path someone else set.

HOW KNOWLEDGE IS TREATED

Transmissive

Knowledge flows one way, app to learner. The app is the source; the exchange is agent-led — the "banking" model.

EVALUATING ON A CONTINUUM

SCORE 2

Participatory

The learner joins in and acts alongside the **app** — contributing, choosing, and shaping the exchange.

HOW KNOWLEDGE IS TREATED

Constructive

Knowledge is built, not just delivered — within limits the app still sets, with dips or drift.

SCORE 3

Immersive

The learner is absorbed in the experience and **owns it** — steering direction, depth, and pace while the app supports their lead.

HOW KNOWLEDGE IS TREATED

Co-creative

Knowledge is co-created and inhabited. The app is a coherent partner that protects the learner's voice and grows with them.

RootHuman™ Sample Instruments

i. Human-Centered AI Discovery Prompts

A set of guided prompts to help teams surface assumptions, values, and intentions before building AI-powered learning experiences.

ii. Human-Centered AI Evaluation Tool

A structured rubric for assessing AI learning interactions across all seven dimensions of immersive learning.

iii. Example Client AI Evaluation

A completed sample evaluation demonstrating how the tool applies to a real AI-assisted learning scenario.

PART A · ENGAGEMENT DYNAMICS

Does the learner come, return, and go deeper?

Attraction, adoption, and persistence.

1 Attraction

Score 2 / 3

FIRST PULL

Does the experience give a first-time learner an immediately clear reason to try it - a felt need or curiosity in the first moments?

Stage 1 asked What pulls a first-time user in, and what do they feel in the first 30 seconds?

SCORE 1
Receptive

SCORE 2 **SELECTED**
Participatory

SCORE 3
Immersive

EVIDENCE & NOTES

The Discovery response names a useful pull - reduced planning time and more intentional, standards-aligned lessons - but it repeats the adoption answer and does not describe the first 30 seconds or the first-run feeling. The value is clear, but the first-pull evidence is incomplete.

REFINEMENT OPPORTUNITY

Add an immediate first-run hook: a sample storybook-to-build activity preview, a clear 'start with your storybook' path, and a quick first aha before teachers upload much context.

2 Adoption

Score 3 / 3

ROUTINE

Does the experience connect to a recurring need so it becomes a go-to the learner folds into how they already work or think?

Stage 1 asked What recurring need makes your app a go-to, so users fold it into how they already work?

SCORE 1
Receptive

SCORE 2
Participatory

SCORE 3 **SELECTED**
Immersive

EVIDENCE & NOTES

Teachers return whenever they need to design, adapt, or enhance lessons for a new group. The tool reduces planning time and fits a recurring curriculum design workflow.

REFINEMENT OPPORTUNITY

Verify with return-use data over several weeks and place the tool visibly inside the teacher's existing lesson-planning cycle.

3 Persistence

DEEPENING

Does the experience get with it, continuing to dev

Stage 1 asked How does the someone stays with it?

SCORE 1
Receptive

SCORE 2
Participatory

SCORE 3
Immersive

EVIDENCE & NOTES

The system is intended to instructional style, and cur recommendations, and buil experiences over time.

REFINEMENT OPPORTU

Make the growth visible to how recommendations evol compounds.

Implications for educators & *designers*.

- i.* **Treat immersion as an experiential signal, not a feature.**
Read immersion as evidence that a learning design is supporting sense-making — not as a property of the platform or interface.
- ii.* **Design the human–AI division of labor on purpose.**
Be explicit about what the learner does and what the agent does, so automation doesn't quietly displace judgment, reflection, or creativity.
- iii.* **Evaluate lived experience, not just system performance.**
Pair performance metrics with experiential dimensions so the learner's actual sense-making becomes visible to the design team.

DISCUSSION & QUESTIONS

Thank *you.*



SPEAKER

Lisa Dawley, PhD

AFFILIATION

Jacobs Institute for Innovation in Education

University of San Diego & RootHuman.ai

CONTACT

lisa@roothuman.ai

PAPER

When AI Agents Become Immersive: A Human-Centered Design and Evaluation Framework

SCAN TO DOWNLOAD

Slides · paper · evaluation tool