

Summary of February 10, 2026 Webinar, “Thinking Through AI: The Cognitive Intraface and Knowledge Construction in Education”

Panelist: Dr. Owen Matson

Moderators: Dr. Brent Duckor and Dr. Carrie Holmberg, SJSU’s IAEP Center

Citation: Duckor, B., Holmberg, C., & ChatGPT. (2026, February 10). *Thinking through AI: The cognitive intraface and knowledge construction in education* [Webinar summary]. Innovation in Applied Education Policy (IAEP) Center, San José State University.

Thinking Through AI: The Cognitive Intraface and Knowledge Construction in Education

Guest Owen Matson, moderated by Brent Duckor and Carrie Holmberg

The Center for Innovation in Applied Education Policy (IAEP) at San José State University recently convened a conversation with guest Dr. Owen Matson — educational theorist, critical media scholar, and author of the forthcoming *Postscripts from the Cognitive Interface: AI, Education, and Cognitive Assemblages*.

The topics covered were not prompt engineering, not plagiarism detection, not AI policy in schools. It was something more foundational:

Where, exactly, is thinking happening when humans engage with AI?

Matson’s answer is a term he has been developing publicly and philosophically: the cognitive intraface.

From Interface to Intraface

Most people think of AI tools as “interfaces.” An interface suggests two separate entities — a human user and a machine — interacting across a boundary. You type; it responds. Input. Output. Transaction complete.

Matson argues that this framing is insufficient.

Drawing on theorists such as N. Katherine Hayles at UCLA and Karen Barad at UC Santa Cruz, he proposes the idea of the intraface — a co-emergent cognitive site that does not pre-exist the interaction. In this view, human and model do not merely exchange information. They participate in the emergence of a new cognitive assemblage.

“It wasn’t a student and a model,” Matson explained. “It was actually a new cognitive system.”

The prefix matters. *Inter-* implies exchange between stable entities. *Intra-* implies co-emergence. Something comes into being through the act itself.

For educators accustomed to thinking about cognition as housed inside the individual learner, this shift is seismic.

A Long Arc Toward Distributed Cognition

Matson's concept did not emerge in 2022 with ChatGPT. Its roots trace back decades.

As a student of literary theorist N. Katherine Hayles, *author of How We Became Posthuman*, Matson grappled early with questions of embodiment, information, and technological mediation. Hayles famously critiqued fantasies of disembodied consciousness and insisted on the materiality of cognition.

Later, in *Unthought*, Hayles defined cognition as:

“A process that interprets information in contexts connected to meaning.”

That deceptively simple definition unlocked something for Matson.

Cognition, in this view, is not restricted to conscious human thought. It includes non-conscious processes, embodied responses, even pattern recognition in biological systems. The emphasis shifts from “thinking as inner speech” to “interpretation as meaning-making.”

When applied to AI-human dialogue, this definition reframes the exchange entirely.

Why Call It Cognition at All?

To many educators, AI interactions look like information retrieval. A student asks a question; the system responds. The risk, critics argue, is passive consumption.

But Matson insists something more complex is unfolding.

When a user inputs a query, the model selects one possible meaning among many statistical possibilities. That selection is interpretive. It could have been otherwise. The output then becomes new information for the human, who interprets it and responds. Each turn reshapes the context for the next.

This recursive loop enacts Hayles's definition of cognition repeatedly:

- Information is interpreted.
- Meaning is selected.
- Context evolves.

- Agency is exercised — by both human and system.

“The dialogism itself is cognitive,” Matson argued. “The intraface itself is a cognitive assemblage.”

In other words, the locus of thinking is not confined to the individual mind nor reducible to the machine’s processing. It unfolds in the relational space between.

The Affective Dimension: Not Just Cold Cognition

At this point, Duckor and Holmberg pressed on a crucial issue for K–12 educators: affect.

Duckor asked Dr. Matson to say a bit more on this seemingly absent feature of the cognitive intraface construct: “So one of the critiques I learned in my work after my PhD program” was that cognitivists think too much about cognition, and “they tend to disembody” the child-learner.

Duckor suggested that his dissertation advisors at UC Berkeley and Stanford were cognitivists and constructivists for the most part. They tended “not to think about affect, emotion, or experience.” Nor did they focus on culture, identity, race, etc. in how learning is constructed as an *educative* experience in the Deweyan sense.

One could place Matson in that space, Duckor suggested: “Affect is an interactive element [in your system]” even with cognition as you define it. “So take it together or take it apart however you want to go, Owen” and tell us more about the role of non-cognitives in the cognitive project.

Traditional cognitivism has been criticized for disembodiment of the learner — reducing education to information processing while ignoring emotion, identity, culture, and the whole child.

Matson argued that his framework does not revive that legacy. Quite the opposite.

Matson said: “So I’m really glad you brought that up, because I can see all the weight that came with that about disembodiment. So let me go back to Hayles’s basic definition. She’s updated the definition since then, but I think the basic definition still applies—that cognition is a process that interprets information in contexts connected to meaning.”

Following Hayles, he emphasizes that cognition includes non-conscious, embodied processes. Affect is not separate from cognition; it is one way information becomes meaningful.

A student interacting with AI experiences:

- Confidence or doubt
- Anxiety or reassurance
- Seduction by fluency

- Frustration with unreliability

These affective responses shape interpretation. Meanwhile, AI systems respond to tone and linguistic cues, generating outputs that can reinforce emotional states.

“AI is responding to affective cues in tone and language,” Matson noted, “and it is having an affective impact on humans.”

For educators invested in social-emotional learning, this insight is profound. The interface is not merely a cognitive site; it is an affective one, too. Both experiences are emergent in the technologies we call generative AI.

What Changes for K–12 Classrooms?

So what happens when we name this phenomenon?

What changes when teachers recognize the interface as a site where cognition unfolds?

First, it destabilizes the content-delivery model. AI is not simply a faster lecturer. If meaning is co-constructed, then pedagogy must shift toward inquiry, interrogation, and dialogic engagement.

Second, it reframes the fear of passivity. AI is unreliable. It hallucinates. It omits context. It oversimplifies.

“If it’s unreliable, you have to be active,” Matson said.

Students cannot afford to disengage. They must evaluate, cross-check, refine, and interpret. In this sense, AI may amplify the need for critical thinking rather than diminish it.

Third, it exposes what Matson called our “pedagogical debt.” Constructivism has long claimed that knowledge is built, not delivered. AI makes that claim unavoidable.

The Novice Problem

In the course of the conversation, a question from Dr. Duckor arose: Is a novice’s use of AI fundamentally different from an expert’s?

Matson acknowledged the danger. When users move outside their domain of expertise, they may lack the intuition to detect incompleteness or subtle bias.

His practical suggestion for teachers was elegant:

Have students test AI in a domain they know deeply — sports, music, gaming, hobbies. Let them witness its limitations firsthand. Then transfer that skepticism to academic domains.

This strategy reframes AI literacy as experiential rather than rule-based.

Writing, Feedback, and the Discipline of Revision

As the conversation drew to a close, Duckor reflected on his undergraduate writing experiences at UC Santa Cruz in the early 1980s— pages returned with dense marginalia from professors who invested hours in feedback. The struggle to revise and in some cases resubmit one’s work. Faculty feedback in analog form, Duckor noted, literally formed his education as an undergraduate before the internet, Word or GPTs. These professors who engaged in his “first drafts” forced him to realize how much writing is and remains a struggle for him.

He asked sharply: What happens to that discipline and struggle in an age of AI?

Matson acknowledged the tension. AI can assist with pattern recognition — grammar, structure, repetition. It can condense drafts and surface mechanical issues.

But something essential remains in translating thought into language.

“There is something very powerful about having to translate an idea into language,”
Matson said.

Writing is not merely transcription. It is a cognitive struggle that clarifies thought.

Perhaps AI’s role is not to replace feedback but to redistribute labor — allowing teachers to focus more on conceptual development while delegating mechanical pattern detection.

Dr. Matson offered his own experience with AU uses:

You know, this paper I wrote on the cognitive intraface back in 2024...I wrote 50 drafts at least of this paper. I just couldn't use AI for it, like there were certain things I could use, but I had 50 drafts. I could write tons of stuff, but couldn't really get the idea out the way I wanted to. The point is, okay, I'm just going to have to write this thing. and so that's and that's actually my practice now is I write stuff and then I use AI to condense it and things like that. But, you know, it is still very limited.

“And anyone who's used [a GPT interface], I think, has to realize that it actually does take a tremendous amount of thinking. And so I do think that there's... I think that some of the shift towards [critical reflective engagement with these machines] still needs to happen.”

The intraface, in this light, becomes part of the revision ecology rather than its destroyer.

A Theory That Demands Practice

Throughout the session, Duckor and Holmberg insisted that theory must inform practice. Without conceptual clarity, AI integration risks devolving into technical compliance or panic-driven restriction.

Matson's work does not offer quick classroom tips. Instead, it provides a reframing:

- Cognition is distributed and recursive.
- Meaning is selected in context.
- Affect is inseparable from interpretation.
- Agency is shared but asymmetrical.
- Education must account for the co-emergent cognitive entity.

This is not a minor tweak to existing frameworks. It is an ontological adjustment.

Beyond Hype and Fear

In the public discourse, AI in education swings between utopian efficiency and dystopian collapse. Matson's cognitive inface offers a third path — one that neither romanticizes nor demonizes.

It asks educators to look carefully at where thinking happens.

If the inface is real — if cognition unfolds relationally between human and model — then classrooms are no longer simply human spaces with tools inside them. They are hybrid cognitive ecologies.

Duckor responded: "I think it is kind of fascinating. I think that's a really powerful concept [hybrid cognitive ecologies]. And to be honest, I think Carrie and I have been dancing around that in our new work as well. I think it's very hard when you talk about AI-mediated, AI-saturated or we call AI adjacent. Yeah, learning spaces, but you wouldn't think that the saturation itself leads to the emergence of a new entity other than what we would have conceived of traditionally as the ontologically embodied student or the ontologically embodied teacher. And by the way, plenty of postmodernists would push back on those very simplistic notions of what it means to be a person. So I get that."

The challenge is not to banish the ecology but to cultivate it wisely.

"AI is exposing our pedagogical debt," Matson observed. "And I think it means that it's already exposing that our practices were already outdated."

In the end, the session did not resolve the future of AI in K–12. It did something arguably more important. It provided a language for thinking about thinking — a vocabulary for the new terrain.

Chat GPT opines in closing: “And in education, naming a phenomenon is often the first step toward teaching it well.”