

Agentic AI in Learning: Does It Support Autonomy in the Classroom and Workplace?

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Helena Ledermann:
**Understanding Learner Agency in the context
of AI**
(10 mins)

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Using Design Sprint to rapidly design a tool to
support learner agency
(10 mins)

Conclusion and Discussion

Why This Question Matters: AI's Dual Impact



Source: Gemini

Why This Question Matters

“How can we prepare students for jobs that have not yet been created, to tackle societal challenges that we can’t yet imagine, and to use technologies that have not yet been invented?”



OECD, Future of Education and Skills 2030

What is Learner Agency?

“Defined broadly, learner agency refers to the **capacity** of learners to **act independently** and **make choices** about their learning processes.”

Biesta and Tedder (2007)



What is Learner Agency?

1. Learner agency = a learner's ability to set goals, make choices, monitor progress and reflect on outcomes

2. Agency shifts learners from passive recipients to active decision-makers.

Some examples in the classroom:

- Choice in Assignments
- Co design of assessment rubrics
- Goal setting
- Student-led discussion
- Learning Strategies and tools
- Community Involvement – bring meaning and purpose to the learning

Why Agency Matters Now

- Uncertain future skills landscape
- AI performing knowledge tasks
- Need for metacognition and self-regulation



Image source: AI and human cognition: can machines truly understand us?. Global Council for Behavioral Science. [https://gc-bs.org/p/16-ai-human-cognition-can-5426/\(2025, July 14\)](https://gc-bs.org/p/16-ai-human-cognition-can-5426/(2025, July 14)).

The AI Tension in Education

There are two competing outcomes:

1. **AI may help** by scaffolding thinking, providing prompts, personalising learning
 2. **AI may harm** by creating dependency, reducing productive struggle, replacing decision-making
- There is a push and pull factor

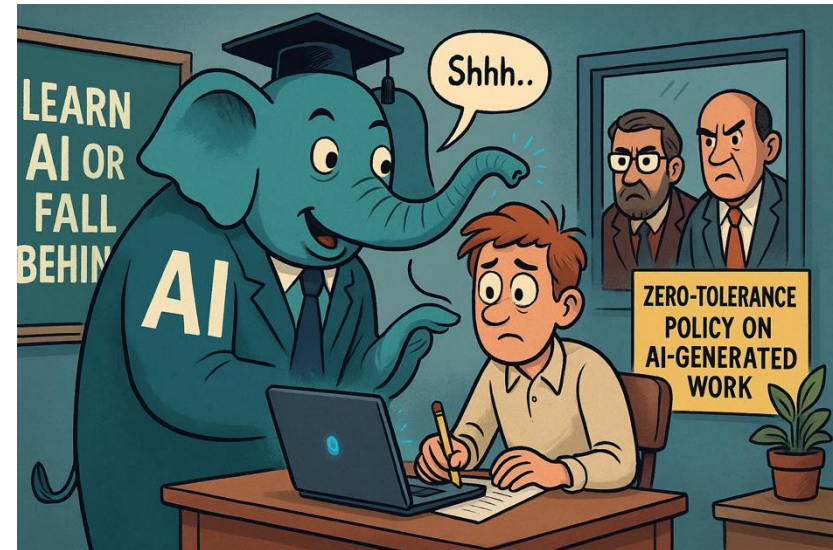


Image source A: <https://spectrum.ieee.org/how-ai-can-personalize-education>

Image source B: <https://danperry.substack.com/p/the-ai-paradox-master-it-but-dont>

The AI Tension in Education

*This leads us to the question:
Can AI strengthen agency instead
of weakening it?*

(Mouta et al. (2025))

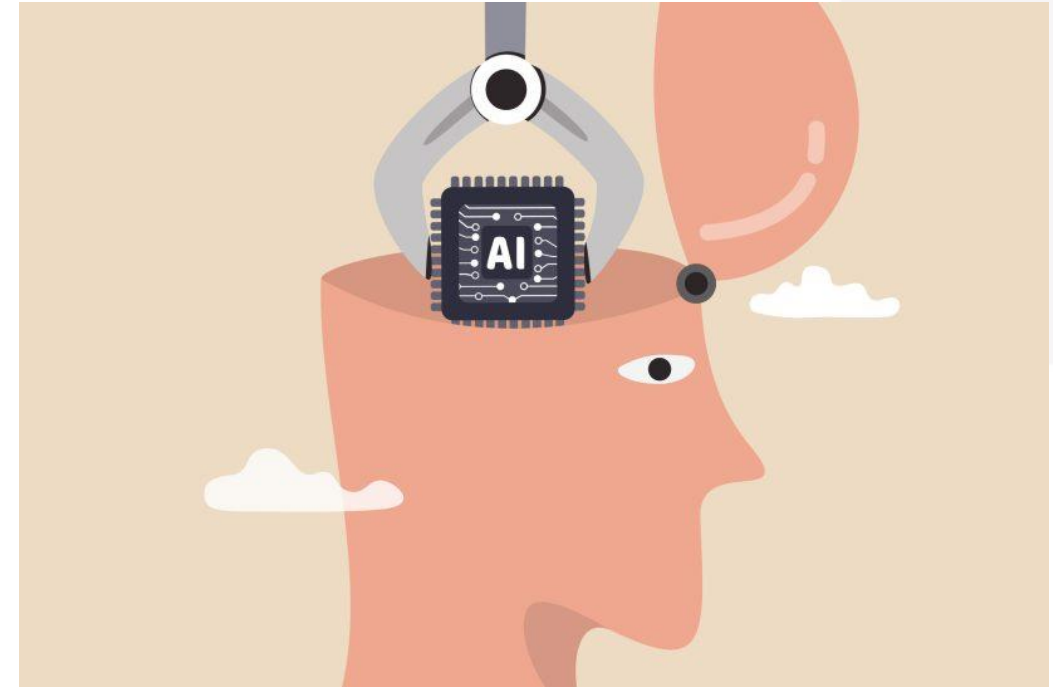


Image Source: pixabay.com/digitalAIagency

Learner Agency in the Classroom – Scenario 1: Student Directed Goal Setting and Progress Monitoring



- Weekly Goal-Setting during an independent project that carries over time
- Example Classroom Based Assessments
- Enabling students to develop autonomy productively to reflect their ambition and potential

• **Co-create:** Students aren't just given targets; they help build them.

• **An agentic AI tool:** Analyse performance data, identify knowledge gaps, suggest personalised goal refinements, tracking project milestones...

• **Model the ability to reject:** The power to say "no" to an AI suggestion is a high-level mark of agency.

Challenge: Do students know their own goals? And if not, how can we expect them to be motivated to achieve...what?

What Teachers told us..

As part of a JTBD process to explore our assumptions further, we conducted interviews with 10 educators.

Sample Questions:

What makes it hardest for your students to work independently in class?

Do you see technology helping students become more independent?

What would an AI tool need to do for you to trust it to support teachers without replacing your role?

“Can the AI tool help students to think by prompting under a particular theme but not going to the final answer – can it adapt its prompt depending on performance?”

“The AI tool would have to have very specific boundaries on what it could do and what it couldn't do. Teaching A Level Coursework means AI is more commonly our enemy than our ally.”

“A lot of students have a fear of making a mistake and would rather not try at all than try and fail. Technology may be more helpful if it allowed low stakes ways to try questions/problems without a fear of failure.”

“Students need habitual experience of autonomous learning to become skilled at it. It's not as easy as it looks.”

“Independent thinking is quite the challenge after years of teaching to the exam paper. Students ask, “What do you want me to say, sir?”

What Teachers told us..



Students need clarity on what good looks like



Teachers want support, not replacement



AI should guide thinking rather than give answers



AI as a cognitive scaffold, not a solution provider

What Teachers told us..

For AI to support agency it must:

Prompt reflection



Require student decisions



Fade support over time



Keep teachers in control



Design Implications..

So, instead of: “Here is the answer.”

It should be, “What do you think the next step might be?”



Image Source:
<https://easy-peasy.ai/ai-image-generator/images/socrates-selfie-ancient-greek-philosopher-modern-art>

From Insights to Solutions – The Design Sprint Process



Image Source:
<https://www.pinotpalette.com/naperville/blog/creative-life/pinotpalette/naperville-what-are-some-practical-exercises-that-boost-creativity>