

Learning Analytics x Generative AI: Will it change the nature of learning?

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Is Generative AI (GAI) here to stay?

A survey of 1633 students and 348 teachers at UU shows....

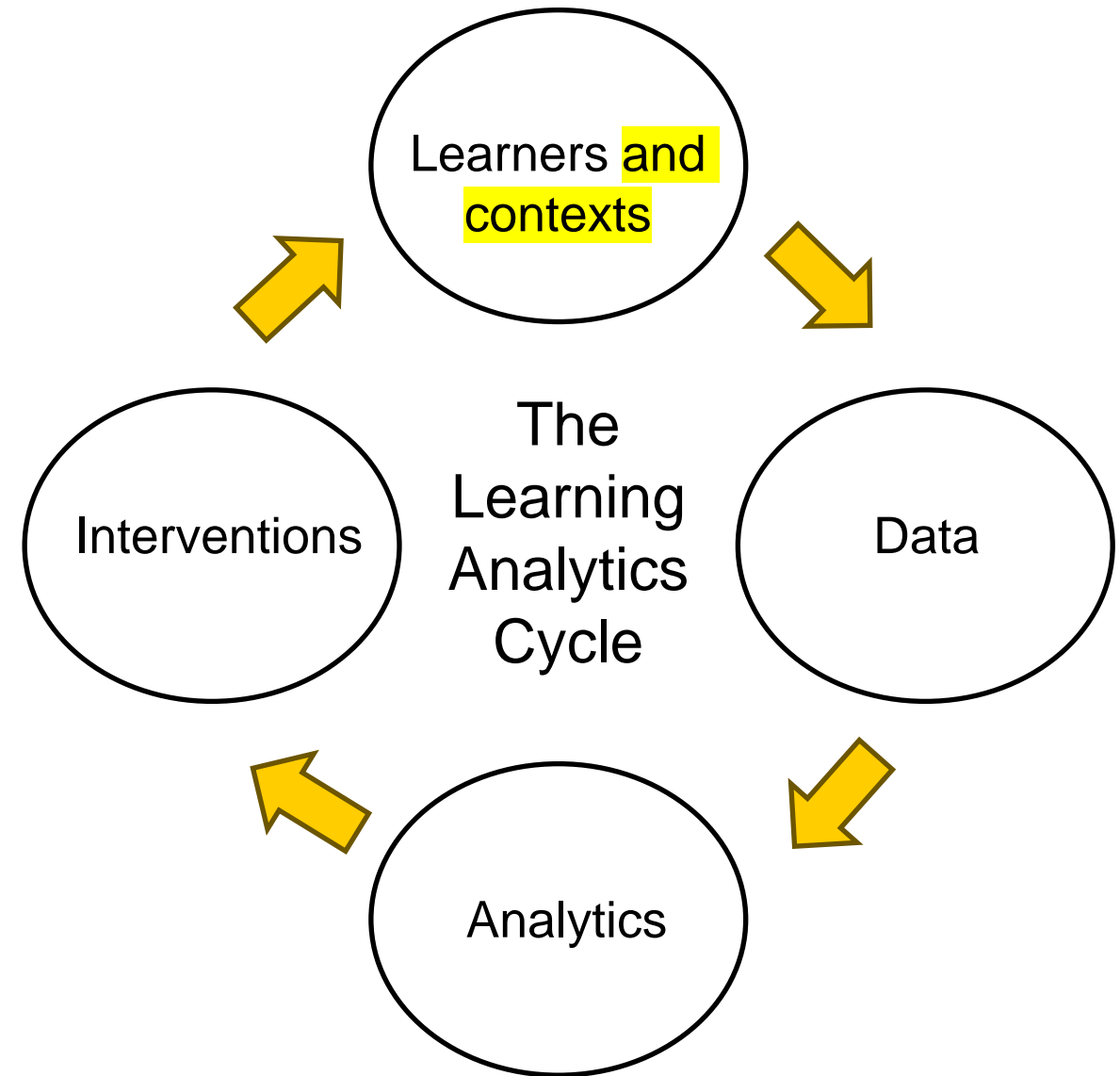


• have used GAI tools	86%	84%
• likely to pay for usage	9%	12%
• have a paid subscription (Faculty of Law, Economics, and Governance)	22%	6%

Source: Blog article by Karin van Es and Dennis Ngyuen in DUB. Setting an agenda for Generative AI in education (04/12/2024). <https://dub.uu.nl/en/blog/setting-agenda-generative-ai-education>

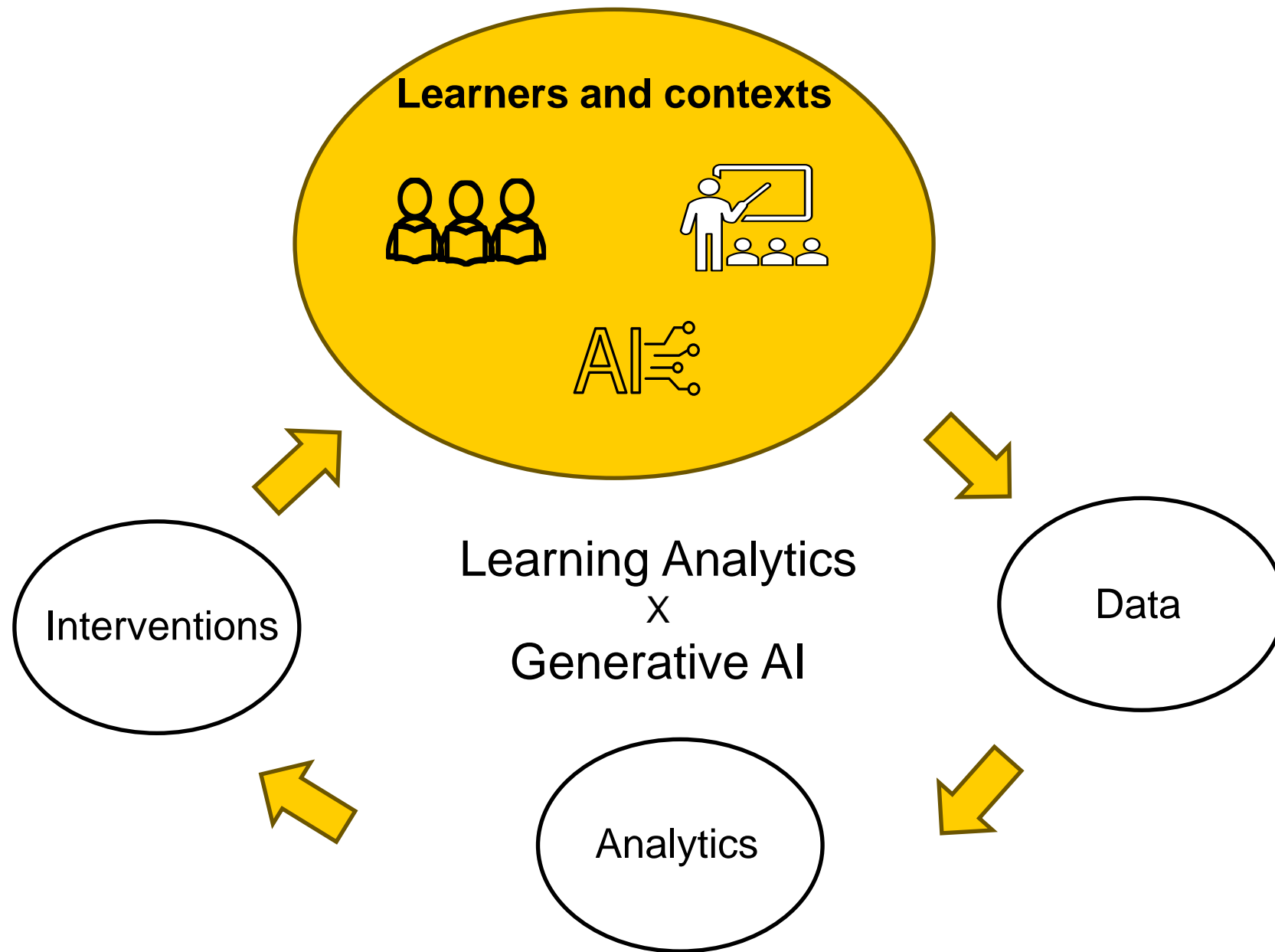
Learning Analytics is

the measurement, collection, analysis and reporting of data about **learners and their contexts**, for purposes of understanding and optimizing learning and the environments in which it occurs.



Clow, D. (2012). The learning analytics cycle: closing the loop effectively. *Proceedings of the 2nd international conference on learning analytics and knowledge*, 34-138.

Ferguson, R., & Clow, D. (2017). Where is the evidence? A call to action for learning analytics. *Proceedings of the seventh international learning analytics & knowledge conference*, 56-65.



Learners and contexts



You

What are the top three effective ways in which ChatGPT can support students?



ChatGPT

Students can use ChatGPT for a variety of purposes:

- 1. Homework Assistance:** They can ask ChatGPT for help with homework assignments, whether it's solving math problems, understanding complex concepts, or **providing explanations** for difficult questions.
- 2. Study Aid:** ChatGPT is often used as a study aid, assisting students in reviewing material by **summarizing key points**, generating study guides, and quizzing them on important topics to reinforce learning.
- 3. Writing Support:** Many students turn to ChatGPT for writing support, utilizing it to brainstorm ideas, outline essays, and **receive feedback** on their writing to improve clarity, coherence, and overall quality.

Is there empirical support?

Peer vs. gen-AI generated FEEDBACK

RQ:

How do students perceive feedback on academic writing from peers VS. ChatGPT3.5?

PEER is considerably more beneficial than ChatGPT in :

- closing the gap between current and desired knowledge (63% vs 29%)
- helping students to assess & reflect on their learning (66% vs 33%)
- encouraging dialogues around learning (59% vs 12%)

PEER is similar to ChatGPT in:

- encouraging positive motivational beliefs and self-esteem.

Self-generated summaries vs. gen-AI generated summaries

RQ:

What is the effect of GAI-generated summaries on text comprehension, meta-comprehension, and cognitive load?

Self-generated
summary
+ reread

Self-generated
summary
+ reflective prompts

GAI-generated
summary
+ reread

GAI-generated
summary
+ reflective prompts

Study with AI JOIN

Exciting news! Ever wonder how generative AI may have an impact on learning? We are investigating how generative AI affects text comprehension and are seeking as many individuals as possible to participate in our experiment.

- ✓ Everyone can participate
- ✓ Participate where and whenever you want
- ✓ Receive the research results

Join Now 

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Take a pic and send it to yourself, friends, family, and colleagues via WhatsApp.
<https://edu.nl/34p36>



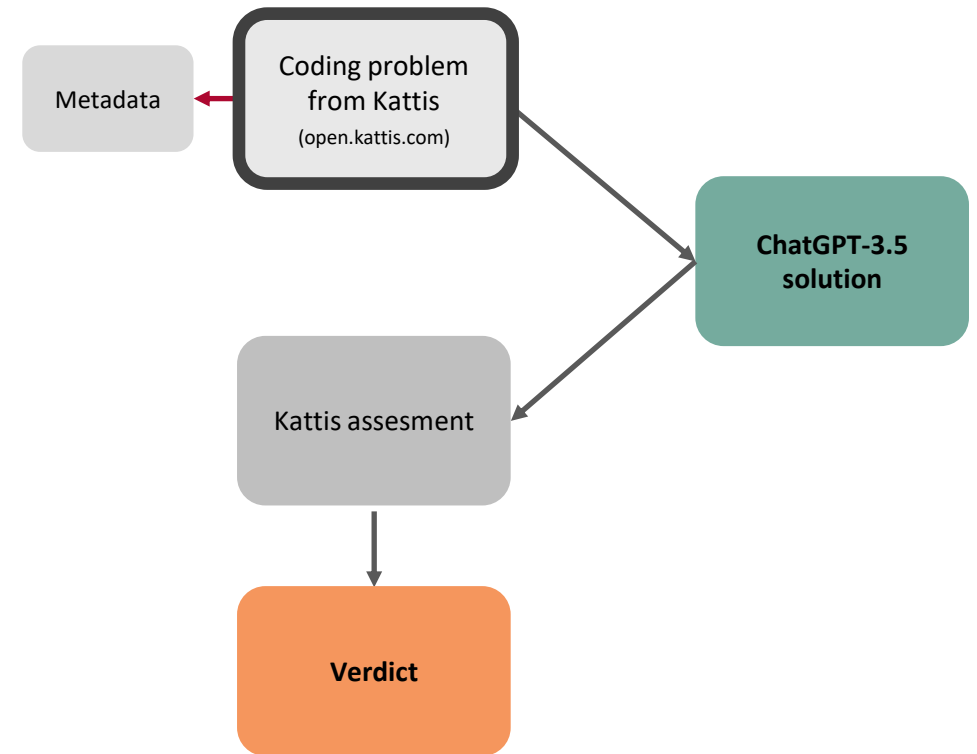
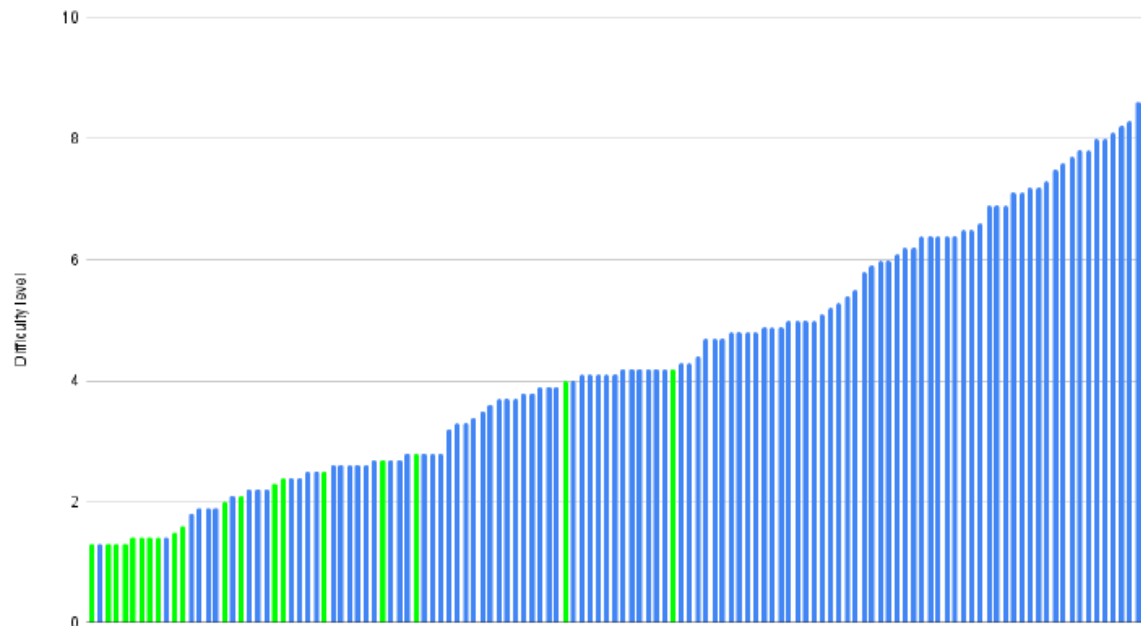
Kattis vs. ChatGPT: Performance on coding tasks

RQ:

To what extent is **ChatGPT** able to solve **automatically graded** coding tasks in the setting of introductory programming education (Kattis)?

- 19/127 tasks

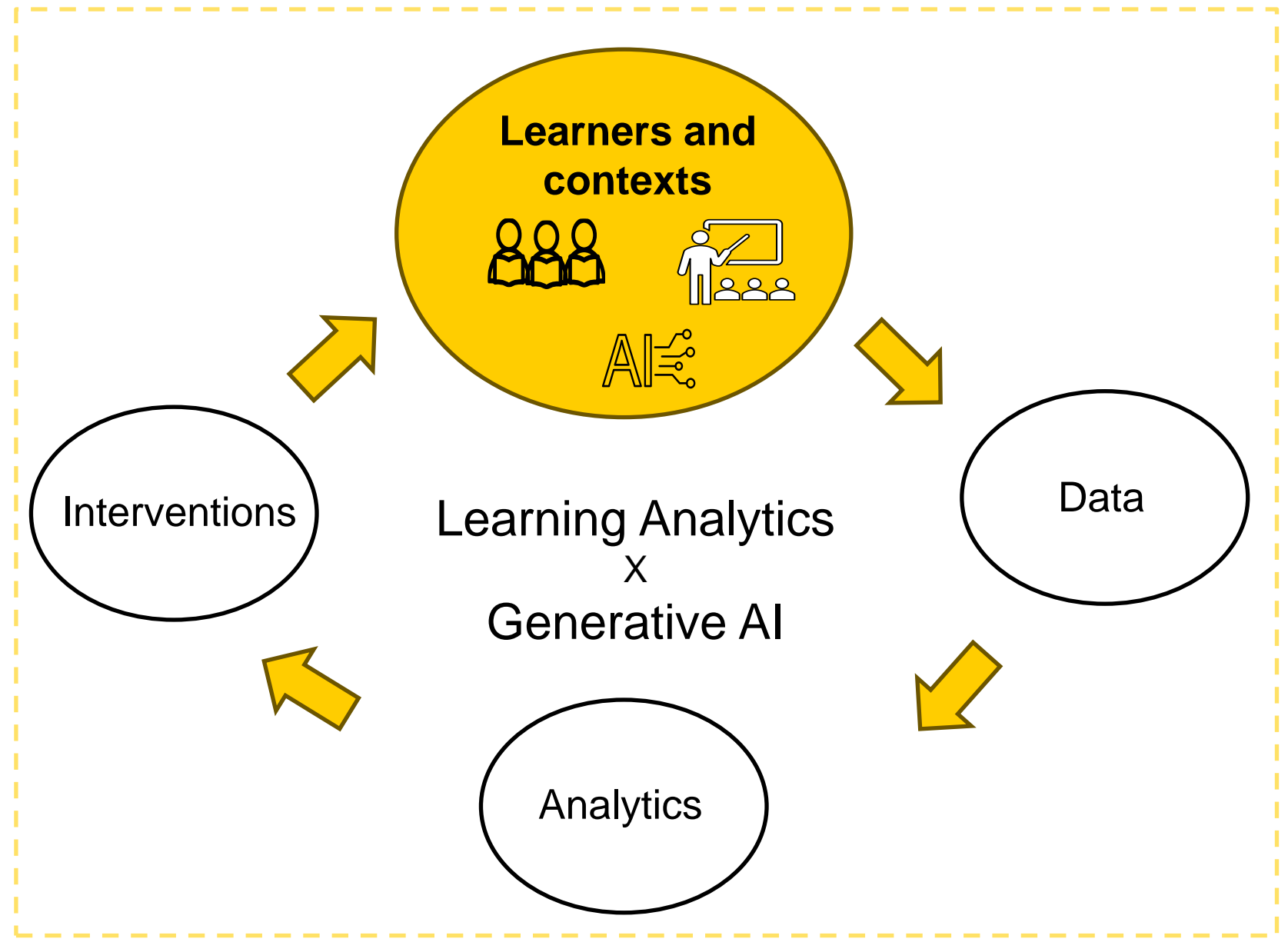
Test cases



Will it change the nature of learning?



How can it support learning?



Questions?

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