

AI Tutor Outperforms In-Class Active Learning — Harvard's Two-Lesson Physics RCT

AI in Education · Good practice · United States of America

Quality score: 47/100

Evidence strength: Randomised controlled trial

Summary

A within-subjects RCT with 194 Harvard undergraduates found a custom GPT-4 tutor built on evidence-based teaching strategies produced more than double the learning gains of live active-learning physics classes on the same topics, in less time, published in Scientific Reports.

Key dimensions

Dimension	Score
Evidence of learning impact	3/3
Equity & inclusion	0/3
Transparency, ethics & data protection	1/3
Teacher capability & pedagogy	2/3
Scalability & sustainability	1/3

Evaluated by C-NAPSE

Data sources

[C-NAPSE web research](#) — accessed 2026-08-18

[Harvard University, Department of Physics](#) — accessed 2026-08-18

[Scientific Reports paper](#) — accessed 2026-08-18

[The Hechinger Report coverage](#) — accessed 2026-08-18

Cite this — Evidoria. *AI Tutor Outperforms In-Class Active Learning — Harvard's Two-Lesson Physics RCT*. Persistent ID: cdf4d435-225c-4821-b382-d50191c03606.