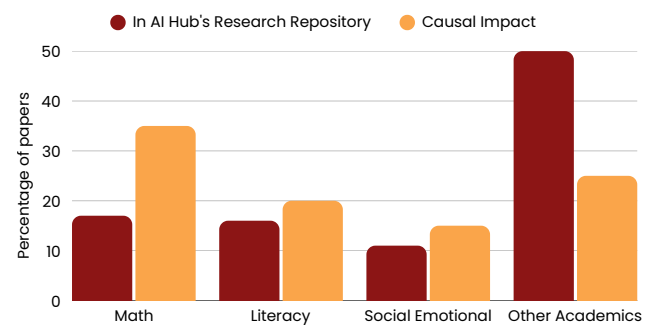


AI and Student Learning: What the Research Shows

Insights from the *Evidence Base on AI in K-12: A 2026 review of research*

REPORT SUMMARY

AI tools are increasingly used by K-12 students. The *Evidence Base on AI in K-12* reviewed more than 800 academic papers and identified a small set of high quality impact research examining how AI tools affect student learning.



What the Evidence Shows

Takeaway

Task performance is often higher when AI tools are available, including in math and writing.

When AI support is removed, independent performance is mixed, raising questions about long-term learning retention.

AI tools that provide step-by-step guidance outperformed tools that simply generate answers.

Evidence

- ➔ Students with access to an AI chatbot outperformed students with no access to AI, and students with unrestricted access outperformed students with restricted access. (Fischer et al., 2025)
- ➔ Access to an AI autograder significantly increased student scores on math proofs relative to students engaging in self-evaluation. (Zhao et al., 2025)
- ➔ Access to AI tutor and AI chatbot significantly improved math homework performance, but had no significant impact on unassisted exam scores. (Chen et al., 2025)
- ➔ Writing essays using an AI chatbot reduced recall, with 83% of participants failing to provide a quote from their own essay, compared to 11% of those using a search engine or no tools. (Kosmyrna et al., 2025)
- ➔ An AI chatbot that provided step-by-step reasoning significantly improved performance compared to receiving the solution outright. (Blasco & Charisi, 2025)
- ➔ Unfettered AI access led to a 17% performance drop on unassisted exams, but an AI tool that provided hints and step-by-step guidance mitigated this "crutch" effect. (Bastani et al., 2025)

★ Implications for Students and Learning

AI can support practice and feedback.

Use AI tools that provide explanations, hints, and opportunities for students to revise work during learning activities.

Independent reasoning remains central to learning.

Ensure students regularly complete work that requires them to generate, explain, and apply ideas on their own.

Instructional conditions shape outcomes.

Set clear expectations for when and how AI can be used, and align its use with learning goals and assessment practices.

