

Can AI keep students motivated, or does it do the opposite?

Yurou Wang, Associate Professor of Educational Psychology, University of Alabama

Published: October 22, 2025 8:15am EDT



AI-based tools can be effective in motivating students but require proper design and thoughtful implementation.

Associated Press

Imagine a student using a writing assistant powered by a generative AI chatbot. As the bot serves up practical suggestions and encouragement, insights come more easily, drafts polish up quickly and feedback loops feel immediate. It can be energizing. But when that AI support is removed, some students report feeling less confident or less willing to engage.

These outcomes raise the question: Can AI tools genuinely boost student motivation? And what conditions can make or break that boost?

As AI tools become more common in classroom settings, the answers to these questions matter a lot. While tools for general use such as ChatPGT or Claude remain popular, more and more students are encountering AI tools that are purpose-built to support learning, such as Khan Academy's Khanmigo, which personalizes lessons. Others, such as ALEKS, provide adaptive feedback. Both tools adjust to a learner's level and highlight progress over time, which helps students feel capable and see improvement. But there are still many unknowns about the long-term effects of these tools on learners' progress, an issue I continue to study as an educational psychologist.

What the evidence shows so far

Recent studies indicate that AI can boost motivation, at least for certain groups, when deployed under the right conditions. A 2025 experiment with university students showed that when AI tools delivered a high-quality performance and allowed meaningful interaction, students' motivation and their confidence in being able to complete a task – known as self-efficacy – increased.

For foreign language learners, a 2025 study found that university students using AI-driven personalized systems took more pleasure in learning and had less anxiety and more self-efficacy compared with those using traditional methods. A recent cross-cultural analysis with participants from Egypt, Saudi Arabia, Spain and Poland who were studying diverse majors suggested that positive motivational effects are strongest when tools prioritize autonomy, self-direction and critical thinking. These individual findings align with a broader, systematic review of generative AI tools that found positive effects on student motivation and engagement across cognitive, emotional and behavioral dimensions.

A forthcoming meta-analysis from my team at the University of Alabama, which synthesized 71 studies, echoed these patterns. We found that generative AI tools on average produce moderate positive effects on motivation and engagement. The impact is larger when tools are used consistently over time rather than in one-off trials. Positive effects were also seen when teachers provide scaffolding, when students maintain agency in how they use the tool, and when the output quality is reliable.

But there are caveats. More than 50 of the studies we reviewed did not draw on a clear theoretical framework of motivation, and some used methods that we found were weak or inappropriate. This raises concerns about the quality of the evidence and underscores how much more careful research is needed before one can say with confidence that AI nurtures students' intrinsic motivation rather than just making tasks easier in the moment.

When AI backfires

There is also research that paints a more sobering picture. A large study of more than 3,500 participants found that while human–AI collaboration improved task performance, it reduced intrinsic motivation once the AI was removed. Students reported more boredom and less satisfaction, suggesting that overreliance on AI can erode confidence in their own abilities.

Another study suggested that while learning achievement often rises with the use of AI tools, increases in motivation are smaller, inconsistent or short-lived. Quality matters as much as quantity. When AI delivers inaccurate results, or when students feel they have little control over how it is used, motivation quickly erodes. Confidence drops, engagement fades and students can begin to see the tool as a crutch rather than a support. And because there are not many long-term studies in this field, we still do not know whether AI can truly sustain motivation over time, or whether its benefits fade once the novelty wears off.

Not all AI tools work the same way

The impact of AI on student motivation is not one-size-fits-all. Our team’s meta-analysis shows that, on average, AI tools do have a positive effect, but the size of that effect depends on how and where they are used. When students work with AI regularly over time, when teachers guide them in using it thoughtfully, and when students feel in control of the process, the motivational benefits are much stronger.

We also saw differences across settings. College students seemed to gain more than younger learners, STEM and writing courses tended to benefit more than other subjects, and tools designed to give feedback or tutoring support outperformed those that simply generated content.



Specialized AI-based tools designed for learning tend to work better for students with proper teacher support compared to general-purpose chatbots such as ChatGPT and Claude. But those specialized products typically cost money, raising questions over equity and quality of education.

Charlie Riedel/AP

There is also evidence that general-use tools like ChatGPT or Claude do not reliably promote intrinsic motivation or deeper engagement with content, compared to learning-specific platforms such as ALEKS and Khanmigo, which are more effective at supporting persistence and self-efficacy. However, these tools often come with subscription or licensing costs. This raises questions of equity, since the students who could benefit most from motivational support may also be the least likely to afford it.

These and other recent findings should be seen as only a starting point. Because AI is so new and is changing so quickly, what we know today may not hold true tomorrow. In a paper titled *The Death and Rebirth of Research in Education in the Age of AI*, the authors argue that the speed of technological change makes traditional studies outdated before they are even published. At the same time, AI opens the door to new ways of studying learning that are more participatory, flexible and imaginative. Taken together, the data and the critiques point to the same lesson: Context, quality and agency matter just as much as the technology itself.

Why it matters for all of us

The lessons from this growing body of research are straightforward. The presence of AI does not guarantee higher motivation, but it can make a difference if tools are designed and used with care and understanding of students' needs. When it is used thoughtfully, in ways that strengthen students' sense of competence, autonomy and connection to others, it can be a powerful ally in learning.

But without those safeguards, the short-term boost in performance could come at a steep cost. Over time, there is the risk of weakening the very qualities that matter most – motivation, persistence, critical thinking and the uniquely human capacities that no machine can replace.

For teachers, this means that while AI may prove a useful partner in learning, it should never serve as a stand-in for genuine instruction. For parents, it means paying attention to how children use AI at home, noticing whether they are exploring, practicing and building skills or simply leaning on it to finish tasks. For policymakers and technology developers, it means creating systems that support student agency, provide reliable feedback and avoid encouraging overreliance. And for students themselves, it is a reminder that AI can be a tool for growth, but only when paired with their own effort and curiosity.

Regardless of technology, students need to feel capable, autonomous and connected. Without these basic psychological needs in place, their sense of motivation will falter – with or without AI.

Yurou Wang does not work for, consult, own shares in or receive funding from any company or organization that would benefit from this article, and has disclosed no relevant affiliations beyond their academic appointment.

This article is republished from The Conversation under a Creative Commons license.