1. Mark your confusion.
2. Show evidence of a close reading.
3. Write a 1+ page reflection.

AI Use Appears to Have a "Boiling Frog" Effect on Human Cognition, New Study Warns

"We find that AI assistance improves immediate performance, but it comes at a heavy cognitive cost."

Source: Maggie Harrison Dupre, Futurism.com, April 14, 2026

In a new study, researchers claim to provide the first causal evidence that leaning on AI to assist with "reasoning-intensive" cognitive labor — mental tasks ranging from writing to studying to coding to simply brainstorming new ideas — can rapidly impair users' intellectual ability and willingness to persist despite difficulty.

"We find that AI assistance improves immediate performance, but it comes at a heavy cognitive cost," the study declares of its findings. "After just [about] 10 minutes of AI-assisted problem-solving, people who lost access to the AI performed worse and gave up more frequently than those who never used it."

The study, which was conducted by a multidisciplinary cohort of scientists from across the Unites States and United Kingdom, has yet to be peer-reviewed. But it builds on a a growing body of research suggesting that AI use can distort and damage users' thinking and independence, and as experts work to understand the impacts of widely-used chatbots on people as they unfold in real-time, they're warning that outsourcing cognitive tasks to AI tools could put humans in a "boiling frog" conundrum — in which an unwitting, bit-by-bit erosion of our cognitive "muscles" leads to formidable challenges in the long-term.

"If sustained AI use erodes the motivation and persistence that drive long-term learning, these effects will accumulate over years, and by the time they are visible, they will be difficult to reverse," the study urges. "This is analogous to the 'boiling frog' effect, where each incremental act feels costless, until the cumulative effect becomes overwhelming to address."

To conduct the study, the researchers recruited a cohort of about 350 Americans, who were asked to try to complete a brief series of fraction equations. A little more than half of participants were randomly granted access to a chatbot — a specialized bot built on OpenAI's GPT-5 and provided with the specific answers for each question on the brief exam — for help. Everyone else was funneled into an AI-free control group.

At first, the results revealed, the chatbot proved expedient in helping AI-aided participants breeze through the test. But halfway through the short exam, access to the AI was suddenly cut off — at which point participants' ability to work through the reasoning questions without AI assistance quickly declined, as did their will to keep working at a problem when the going got tough.

For a follow-up experiment, the researchers recruited another, larger group of nearly 670 participants. They were once again split into two roughly-equal halves and asked to complete a brief mathematical reasoning test, with one group given access to a chatbot assistant — only to once again be suddenly abandoned by their AI companion, leaving them to cognitively fend for themselves. The results were pretty much the same: performance dropped, as did perseverance.

These same outcomes persisted once again in a final experiment, in which about 200 more participants were asked to complete a brief series of reading comprehension questions, showing that such results aren't simply limited to math problems.

"People's persistence drops," said University of California, Los Angeles assistant professor Rachit Dubey, a computational cognitive scientist who coauthored the study alongside

peers from the Massachusetts Institute of Technology, Carnegie Mellon University, and the University of Oxford, in an interview with Futurism. “Once the AI is taken away from people, it’s not that people are just giving wrong answers. They’re also not willing to try without AI.”

One bright spot: how participants used AI appeared to make a difference for individual outcomes, according to the research. Those who self-reported that they essentially prompted the chatbot to cough up the answers unsurprisingly had a worse time once the AI rug was pulled. Participants who instead said that they asked the chatbot for hints or clarification — as opposed to outright cheating — appeared to be better off sans AI assistance.

Dubey is concerned that leaning too heavily on chatbots to replace cognitive labor could cause people to become more impatient and even create the conditions for over-reliance on AI to function like an addiction. Most of all, though, he says he worries about how AI reliance will transform individuals’ sense of confidence and worth as they struggle to think through problems independently.

“The most important thing I learned in college is the value of hard work… if I work hard, I’m capable of doing a lot of things,” Dubey reflected, noting that schools and communities should think very carefully about “blindly” integrating chatbots into educational programs. “These are very important core human elements that we learned throughout our childhood, in high school and college years.”

“If we’re offloading to AI at scale for everything and anything, what will it do to our own beliefs about our own selves?” Dubey continued, adding that “practice makes you better in many domains, and that’s what AI will take away from you… that’s what I’m most worried about. We will have a generation of learners and people who will not know what they’re capable of, and then that will really dilute human innovation and creativity.”

And as the researchers seek to expand their research into longer-term experiments, they’re challenging folks across industries to “think about optimizing not just what people can do with AI,” as they write in the study, “but what they can do without it.”

Possible Response Questions

- What are your thoughts about the “boiling frog” impact AI can have on your thinking? Explain.
- Did something in the article surprise you? Discuss.
- Pick a word/line/passage from the article and respond to it.
- Discuss a “move” made by the writer in this piece that you think is good/interesting. Explain.