AI tools like ChatGPT popular among students who struggle with concentration and attention

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Since their release, AI tools like ChatGPT have had a huge impact on content creation. In schools and universities, a debate about whether

these tools should be allowed or prohibited is ongoing.

Now, researchers in Sweden have investigated the relationship between adolescents' executive functioning (EF) and their use and perceived usefulness of generative AI chatbots for schoolwork. Their results appear in *Frontiers in Artificial Intelligence*.

"Students with more EF challenges found these tools particularly useful, especially for completing assignments," said Johan Klarin, a school psychologist and research assistant at the Department of Psychology at Lund University. "This highlights these tools' role as a potential support for students struggling with cognitive processes crucial for academic success."

The researchers, however, also mentioned that overreliance on these tools could hinder or delay the development of EFs and students' learning. "This should be carefully considered when implementing AI support in schools, and the effects should be studied longitudinally," added project leader Dr. Daiva Daukantaitė, an associate professor at Lund University.

Perceived usefulness

The researchers conducted two studies. The first had a sample of 385 adolescents, aged 12 to 16 and attending four primary schools in the south of Sweden. The second study included 359 students aged 15 to 19 who were enrolled in the same high school.

The studies revealed that usage rates of AI chatbots were around 15% among younger teens and around 53% among older students. One possible explanation is that older students are more often given complex assignments and therefore may use AI tools more frequently. The researchers also pointed out that the two studies were conducted at

different times—"study two" nearly a year after "study one"—which could show that during this time, AI use became more popular in general.

More crucially, however, the studies showed that students who struggle more with EF perceived generative AI as significantly more useful for schoolwork than their peers. A possible reason is that these students derive greater productivity improvements than their classmates, the researchers said.

Support or cheating?

"The line between cheating and using AI tools as an aid should be drawn based on the intent and extent of use," said Klarin. Using ChatGPT to complete whole assignments or solve problems and submitting the results as one's own is cheating. Provided students engage critically with the generated content and contribute their own understanding and effort, however, can be considered a legitimate aid.

Responsible ways for students—especially those who struggle with EF—to use ChatGPT can include using it for research, idea generation, and understanding complex concepts.

"Educators should provide guidelines and frameworks for appropriate use. Teaching digital literacy and ethical considerations is also crucial," Klarin said.

Real-world feasibility of such teaching could be enhanced by using technology, facilitating peer support programs, and providing [professional development](#) for teachers to identify and support students with EF challenges, the researchers said.

Balancing AI and academic integrity

The results offer an initial attempt to understand the relationship between the use of AI tools in school settings and EF, the researchers said.

"Our work lays the initial groundwork to inform educators, policymakers, and technology developers about the role of generative AI in education and how to balance its benefits with the need to maintain academic integrity and promote genuine learning. It also underscores the need for supportive measures for students, especially those with EF challenges. However, to gain a more comprehensive understanding, further studies are needed," Daukantaité concluded.

Nevertheless, they pointed to the study's limitations, which include the fact that students self-reported on their AI use, and that a generalization of results may not be possible because they focused on specific age groups, educational contexts, and carried out their research in a setting where every student receives a free laptop—factors that might vary between situations and countries.

Provided by Frontiers

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