AI tutors are already changing higher ed

[Megan Morrone](#)

Illustration: Lindsey Bailey/Axios

Generative AI is already transforming higher ed, giving students [more access](#) to professors' expertise and boosting efficiency for both faculty and students in some fields.

Why it matters: For many college students, the world of "personal AI tutors for everyone" promised by techno-optimists is already here.

The big picture: Computer science professors have had the most success with AI tutors in the classroom so far, [mirroring the mass appeal](#) of genAI as a coding assistant. Meanwhile, many educators outside of the STEM fields are more likely to view genAI with suspicion or skepticism.

State of play: In the two years since the release of ChatGPT, the conversations around its use in college classrooms have mostly focused on cheating. But some professors and their students are using it to boost individual learning and make education more equitable.

- In May, OpenAI released ChatGPT Edu, a more affordable tool for college students, faculty, researchers and campus administrators that the company says includes "enterprise-level" security.
- "Although it's still the early stages of the adoption curve, AI for tutoring, in particular, is showing promise," Leah Belsky, VP and general manager of education at OpenAI, tells Axios.
- Belsky calls genAI "a critical skill," and says that the more students use the tools in college, the more they'll be prepared in their careers.

Case in point: David Malan is Gordon McKay professor of the practice of computer science at Harvard. But his LinkedIn profile job title just says "I teach CS50."

- Computer Science 50 — an entry-level computer programming class that Harvard says is designed for "majors and non-majors alike" — is the university's largest class.
- It's also streamed so anyone can audit it for free on platforms like edX, YouTube, Apple TV and Google TV, and the course materials are freely distributed under a Creative Commons license.
- Since the summer of 2023, those students accessing

the course through distance learning have had access to AI-powered "teaching assistants," too, via the CS50 Duck — a chatbot built on OpenAI's API that helps students check their code and get answers to questions about the course.

- Malan tells Axios that genAI can already approximate a pretty good teaching assistant. "It's wonderfully empowering for that demographic of folks who have never had nearly as much of a support structure" as the students at elite private colleges, he says.

Fun fact: Duck is named after "rubber duck debugging" or "rubberducking" — a programming practice of debugging code by forcing yourself to explain it line by line to an inanimate object, like a rubber duck.

By the numbers: Students who were given access to an AI tutor learned more than twice as much in less time compared to those who had in-class instruction, according to a study by two Harvard lecturers of 194 Physical Sciences 2 students.

- Malan cautions against seeing this as a risk to the jobs of professors or graduate student teaching assistants: "We already have too few teachers as it is."

Yes, but: While many humanities professors recognize that ChatGPT is here to stay, the AI tutor conversation in those departments is still clouded by genAI's potential to supercharge plagiarism.

- Although ChatGPT hasn't increased the instances of

cheating, according to [research from Stanford](#), it has made it harder for professors to [catch plagiarizers](#).

- Writing in [the Atlantic,](#) Ian Bogost, a computer science and engineering professor and director of the film and media studies program at Washington University in St. Louis, talked to professors who were demoralized by the advent of ChatGPT.
- "It's just about crushed me," a writing professor from a school in Florida told Bogost. "I fell in love with teaching, and I have loved my time in the classroom, but with ChatGPT, everything feels pointless."
- Even Malan admits that CS50 Duck can be too helpful. Sometimes, he says, "it spits out too many lines of code such that it's effectively spoiling a problem for a student," he says. "But that will surely get better over time as the models improve."

Between the lines: Some students are finding it easier to ask questions of chatbots not only because they are more accessible than professors but because students perceive them as less judgmental.

- Malan shared feedback from a student who said, "I love how AI bots will answer questions without ego and without judgment, generally entertaining even the stupidest of questions without treating them like they're stupid."

The bottom line: While we already see success in sciences and coding, it remains to be seen if there's a way for genAI to overcome its reputation as a pal to plagiarists and achieve

the same success in humanities classes.

Previously in this series:

- [An AI guide through health care's red-tape maze](#)
- ["An AI tutor for every kid": Promise and reality](#)