Chatbots in the classroom

While universities grapple with the pace of change, technology companies have moved quickly to offer higher education institutions — and their students — their own bespoke AI products.

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For students in Lynn Rogoff's business communications class, their final assessment is not just a matter of developing entrepreneurial pitches. In addition, the undergraduate class must defend them in a live, on-camera grilling by their professors and peers.

This is a "perfect exercise for the real world", says the New York Institute of Technology professor. But it is also a test of whether the students have fully ingested the information — or relied too heavily on artificial intelligence. "The more novel and unique the proposition is, the harder it is for [them] to use AI," she adds.

Rogoff's approach is just one of the ways professors are responding to the emergence and rapid uptake of generative AI and the disruption it can cause. Some educators have embraced the technology, while others have sought to ban it entirely. But as professors and administrators struggle to find the right balance, they must factor in its ubiquitous use by their students.

More than a quarter of prompts by US-based college-age users put into ChatGPT, the world's most popular large language model (LLM), are for educational purposes, according to internal research from OpenAI, the product's maker.

Chatbots can be a helpful research tool. But some students are using the technology to do their work for them, educators say. Plagiarism is one of the top concerns raised in a survey of members of the Digital Education Council, a global network of universities. Other issues

were ethical concerns, the devaluation of degrees and the complexity of integrating AI into existing data and tech systems.

Some students are also becoming more crafty, using complementary software such as word spinners — which change the order, or nature, of words — to help them evade plagiarism or AI detectors.

In some colleges and universities, professors have taken to asking students to submit the instructions they feed to the AI alongside written assignments.

But while institutions grapple with the challenges of detecting AI and drafting policies on its use, technology companies have moved quickly to offer their own solution: bespoke AI products for education.

Some of them have been refining the models that underpin AI chatbots for teaching purposes as they seek to win market share through early adoption by the next generation of employees.

San Francisco-based Anthropic is selling an educational version of Claude, its AI assistant, which it says is designed to better assist learning through tweaks that guide students rather than providing answers or offering templates for essays. OpenAI is also testing its own version of a similar education tool that guides students, according to people close to the company.

Tech leaders say AI can be an aid for learning, rather than a way to avoid it. “Before calculators, how math tests were scored looked really different [and we] expect that we’re going to see something really similar with the advent of AI,” says Daniela Amodei, co-founder and president of Anthropic.

“It’s really much more about explaining, like, ‘How did you come to this conclusion? What’s the supporting evidence? What are the citations?’ And I think that that’s a place where AI can be a powerful companion versus sort of a replacement for actually doing critical thinking work.”

Many universities are intrigued, signing strategic deals or co-operating on research projects with tech companies. Oxford university has signed a deal with OpenAI, while the University of Michigan is working with Google. In Europe, French start-up Mistral AI, which has an open-source ethos, has partnerships with several French, Italian and British business schools.

But with evidence emerging that generative AI may have a negative impact on learning, and with little regulation or research into best practices, some academics are warning against rushing through AI policies.

“Careless deployment of these tools in schools is actually more harmful than not doing anything at all,” says Hamsa Bastani, associate professor of operations, information and decisions at the Wharton School, part of the University of Pennsylvania.

“You’re better off just taking your traditional methods rather than throwing a bunch of money [at AI].”

In April, Massachusetts-based Northeastern University, became one of the first institutions to strike a deal with Anthropic.

For Javed Aslam, the university’s AI chief, it was Anthropic’s focus on responsible AI use and its willingness to adapt models to the college’s needs that won the institution’s business.

“We could have gotten [off the rack] enterprise-level access to one of the many possible vendors,” says Aslam. “We didn’t want that. We really wanted a partner that we could actually work with to create educational offerings.”

Other institutions have taken different factors into consideration. Emlyon Business School, one of the highestranking in Europe, is one of the colleges that is partnering with Mistral, which is headquartered in Paris.

“We chose Mistral AI because we share the ambition of technological sovereignty and digital autonomy in France and Europe, which are essential for the continent’s economic and strategic development, but also to defend the ethics associated with these technologies,” says Nicolas Pejout, director of strategy and development at Emlyon.

Right now, uptake appears more advanced in the US than in European countries. In the UK, for example, a Financial Times analysis of official access to AI tools among more than 100 universities found that the majority of them had none at all.

And rather than using specialised educational versions, those that have access to AI tools were more likely to lean towards free products or existing software agreements, such as with Microsoft, which gives access to its AI assistant Copilot 365 alongside products such as Excel, PowerPoint and Teams.

The amounts budgeted for AI tools ranged from less than £100 to £45,000 a year. The total amount spent by 20 universities since 2023 is just over £250,000, according to a freedom of information request by the FT.

In the US, some institutions have taken a more full-throated approach to AI. Harvard Business School, for example, provides all MBA students with ChatGPT EDU accounts. Separately, it has launched an MBA course specifically designed to help business leaders navigate AI-powered tools and comes with access to a custom-built AI chatbot that acts as a tutor.

Rollins College, a private liberal arts college in Florida, has redesigned courses and assignments in computer science to help students “demonstrate agency and take ownership of their work”, says Daniel Myers, an associate professor in the subject.

For example, in a programming class, students write an interactive fictional story that uses ChatGPT to generate responses to user inputs. They are allowed to use AI for coding, but they have to create the setting, events, prompts that drive the story, and think about the design of the program and the features they want to add.

“The result is that students end up pushing themselves further and doing more work than they would for a traditional programming problem that has one correct answer,” says Myers.

However, several recent studies have suggested that generative AI has a negative effect on learning. In autumn 2023, Wharton’s Bastani led a study that tested three cohorts of students in Turkey: one with textbooks and traditional study, another using standard ChatGPT and the final group used a version of ChatGPT designed to give hints or help rather than answers.

The research, published in July 2024, found that when doing practice tests, both AI tools led to increased performance. However, when students using AI tools were tested without access to the technology, the standard ChatGPT cohort performed 17 per cent worse than those who used traditional methods. The performance of those using the specialised AI tool was about the same as the control group.

To others, there is concern about the risk of “cognitive offloading” — delegating thinking to the technology — as students increasingly turn to AI as a substitute for higher-order skills, those that require complex judgments such as analysis or creation.

A study, published in January, investigated the relationship between AI tool usage and critical thinking skills of British participants, across a range of age groups. “Younger participants exhibited higher dependence on AI tools and lower critical thinking scores compared to older participants,” said Michael Gerlich, a professor at SBS Swiss Business School who led the study.

Anthropic’s own research, analysing about 600,000 queries to Claude in educational institutions, showed nearly half of student prompts sought “direct” answers with minimal interaction, as well as some explicit requests to rewrite marketing and business texts to avoid plagiarism detection.

“There are legitimate worries that AI systems may provide a crutch for students, stifling the development of foundational skills needed to support higher-order thinking,” the authors concluded.

Charlotte Probstel, a student in biomedical engineering at Imperial College London, says AI has been helpful in coding and “as a tutor” for exams when the professor was unavailable.

But its overall benefits “really depends on the students”, she says. “Many students use it as a teleportation device to travel from the start to the end. It should be used as a map

instead, one that the students learn to read."

An Oxford undergraduate, who asked to remain anonymous as they have not disclosed using AI in their essays, says the technology had a negative impact on resilience and the capacity of students to work through problems. "The availability of an easy way out causes me to be less committed to solving things on my own," they admit, adding that they try to "avoid relying on it" completely.

Technology companies argue that AI can open up learning opportunities for students with diverse abilities, including those who struggle with reading.

"There are lots of students for whom reading does not come as easily or as naturally, and for them, they get left behind," says Ben Gomes, a senior vicepresident in education and learning at Google. "AI provides an avenue for those students to do a lot better through audio and other things that are very natural."

He adds that AI "shouldn't hold [students] back" but rather help them "make that leap to the next level".

"In the past, calculators and computers automated knowledge [but] AI might be the automation of skills — when I don't know how to summarise an essay, or do a math problem," says Jason Hausenloy, a mathematics student at Berkeley, who is taking a sabbatical to work on AI safety.

"Social media marked the end of the era of boredom; AI is the end of the era of confusion."

There is a broader problem with the education sector's use of AI: a lack of clarity on best practices, or of guidelines and levels of regulation to foster a more level playing field.

Some educators have sought a return to traditional assessments, in which students hand write essays without access to any technology.

"It is critical that students make connections and understand larger integrative concepts, not just regurgitate 'facts'," says Patrick Kirch, professor of anthropology at the University of Hawai'i at Mānoa, who has been teaching for half a century.

"Since it appears that if I let students write their essays on their laptops, some of them will cheat by using AI, the solution is to make them put the laptops away and hand write the essays, as I did with earlier generations of my students."

Other universities that have returned to in-person, handwritten exams, include the University of Cambridge's human, social and political sciences department, Georgia State University and University of California Berkeley.

Some educators have other reasons to be nervous about the growing presence of AI in universities. Many worry that increasing allocation to AI products could lead to the possible displacement of teachers and professors as part of cost-saving measures.

Faculty, students and staff at California State University held protests throughout the spring to oppose budget cuts and the institution's dream of becoming "the largest AI-powered university system".

Following the backlash, the university says it is "taking a comprehensive and measured approach to its AI strategy and to working closely with faculty to navigate this new terrain".

Yet current cohorts of students are also concerned about the effects of AI on their own future job prospects.

On one front, rapidly evolving AI is changing the workplace, with some roles disappearing altogether. Anthropic chief executive Dario Amodei has previously warned that AI has the potential to eliminate half of all entry-level white-collar jobs.

But multiple students the FT spoke to, who asked to remain anonymous, also worry about being perceived negatively as the AI generation. One of them expressed anxiety about being "guinea pigs" for the AI pilots taking place before the impact of the technology on learning is fully known.

Unemployment for recent college graduates in the US has been on a steady rise since the release of generative AI tools, and is currently at 5.8 per cent.

Oxford Economics, a research company, found that since mid-2023, 85 per cent of the rise in unemployment is concentrated in new market entrants who cannot find work. It found "signs that entry-level positions are being displaced by artificial intelligence at higher rates."

The number of new entry-level jobs in the UK has fallen by nearly a third since the launch of ChatGPT, according to job site Adzuna, whose analysis of postings found that entry-level vacancies represent around a quarter of the overall jobs market.

This is forcing students to question whether a university or college degree is still worth it. "Students are graduating with this mountain of debt with the expectation of long careers," says Berkeley's Hausenloy. "But if white-collar jobs are declining, the fundamental calculus of going to college changes."