

Perspectives on Generative Al

College Leaders Assess the Promise and the Threat of a Game-Changing Tool

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Contact <u>Cl@chronicle.com</u> with questions or comments.

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EXECUTIVE SUMMARY

enerative artificial intelligence presents a threat to how colleges operate and educate, will have both a positive and a negative impact on teaching, and offers colleges an opportunity to improve how they are run.

Those are some of the decidedly mixed feelings — a combination of alarm and optimism — of 404 college leaders who responded to a survey about generative AI and its effect on the future of higher education. Conducted this summer by *The Chronicle of Higher Education*, the survey asked college officials to assess how

generative AI, a disruptive technology that can create computer code and writing that approximates work done by humans, will affect teaching and learning, academic-integrity issues, the efficiency of college operations, and campus staffing.

Among survey respondents, nearly all work full time at a college or university. They were split between public four-year institutions (51 percent) and private four-year institutions (44 percent), with 5 percent working at two-year institutions. A majority identified themselves as directors (34 percent) or deans at some level (29 percent).

Much remains unclear about the ramifications of the technology, and the survey in many instances uncovered seemingly contradictory responses. Seventy-eight percent of respondents agreed that new and emerging AI tools offer colleges ways to improve how they educate, operate, and conduct research.



But when asked whether these tools pose a threat to the way colleges educate, operate, and conduct research, a majority agreed.



Officials see generative-AI technology as inevitable, though they say it is moving too fast. A little more than half of them agree with the idea of a "temporary pause" in the creation of powerful AI systems — one that would allow for the development of guidelines regarding their use — while nearly all say that generative AI will prove impossible to avoid. Colleges must prepare for and embrace it.

This report will examine what higher-education officials are thinking about this technology — the opportunities it promises, as well as the potential threats it poses — looking at such issues as its impact on teaching, costs, and research.

INTRODUCTION

ast fall, as colleges across the United States began the academic year with a sense that the worst years of Covid-19 were finally behind them, they did so with a note of triumphalism.

They had, after all, kept their homebound students learning during the pandemic by putting remote technology to good use. Higher education, often criticized as unable to embrace change, had turned

the tables, making a quantum and successful shift away from its traditional way of doing business.

A year later, higher education's faith in its ability to adopt new technologies on the fly has been shaken by the emergence of high-powered artificial-intelligence tools. Generative-AI programs, part of a set of tools called "large language models," can answer the prompts of users by making copy that resembles human writing, create Higher education's faith in its ability to adopt new technologies on the fly has been shaken by the emergence of high-powered artificial-intelligence tools.

computer code fast enough to lessen the need for human labor, and, perhaps in the long run, widen gaps in equity between institutions and among students.

Shortly after ChatGPT, the pioneer in generative AI, was rolled out in November 2022, alarm bells began ringing on campuses nationwide. With its ability to compose essays within seconds on virtually any topic — albeit with mistakes and outright fabrications — the technology became a boon to some students looking to complete assignments without doing much of the work.

Institutions reeled. Many are still pondering what the best response should be to the vast computing power and ubiquity of generative AI and the academic-integrity concerns that come with it.

Beyond those anxieties, new AI tools could one day reduce the need for — or perhaps even make obsolete — traditional classrooms, faculty members,

advisers, and other workers on campus, creating a crisis unlike any other higher education has faced.

College leaders often talk of "existential threats" to their institutions, such as declining enrollment, decreasing financial support from state governments, and the growing mistrust of higher education by some politicians and the public. Generative AI has made its way onto that list.

"I'm wagering that 50 percent of higher education in the U.S. will be forced to close down" because of the new technology, writes Robin Raskin, founder of the Virtual Events Group, in a Pew Research Center survey <u>story</u> on generative AI. "We will devise other systems of degrees and badges to prove competency."

While the downstream effects can't yet be determined, colleges aren't the only entities with worries about generative AI.

The American public, when <u>polled</u>, largely agrees that the technology constitutes a threat to human endeavors. Labor unions, futurists, and others worry that entire categories of jobs, from airline pilots to radiologists to TV writers, will go the way of the manual typewriter.

Even executives at the companies that created and marketed the technology have warned about its dangers, going so far as to write strongly worded public letters (<u>here</u> and <u>here</u>) arguing that this latest generation of AI bots poses a risk of human extinction. Some have called for slowing the pace of the technology's development so nations can better control it. Sam Altman, chief executive of OpenAI, the developer of ChatGPT, has <u>testified</u> before the U.S. Senate to urge the regulation of his company's product and others like it — an unprecedented move in the high-tech world.

But all that distress represents only half the story. What some see as a threat others call a game-changing tool for learning — a much more powerful and transformational version of previous disruptors, such as the calculator, computer, or online-learning program.

About two-thirds of campus administrators and tech officers say they are optimistic about the uses of generative AI, according to a <u>poll</u> by Educause, a nonprofit organization that advocates for the use of technology in higher education. More than 80 percent add that the new tools will profoundly change institutions in the next three to five years.

Advocates envision online-learning experiences as being made more interactive and engaging by generative AI. A move toward personalized AI tutors, available at all hours and capable of answering an ever-wider spectrum of questions, will aid student success, they say.

The technology's existence will force instructors to develop more meaningful ways to grade and assess student learning. And the need to develop new academic programs and augment existing ones to educate students on the uses of generative AI — knowledge that will probably become necessary to their careers — will create an educational opportunity for institutions. What some see as a threat others call a game-changing tool for learning — a much more powerful and transformational version of previous disruptors, such as the calculator, computer, or online learning program.

Generative AI, its proponents say, will

streamline college business processes and offices by making course registration, data entry, financial-aid applications, and transcript processing easier. Many tasks done by human beings will be eliminated. Though jobs may be lost to generative AI, administrators and staffers will have more time to deal with more important work. Meanwhile, more AI-centric jobs will be created.

The response to generative AI — so far, a largely binary one — reflects a lack of familiarity with the technology, as well as the raft of uncertainties about the consequences, unintended and otherwise, the technology might bring, experts say. The second academic year in the generative-AI era could lead colleges toward some answers, as the fog of what some see as a new dawn begins to lift.



Generative Al and Teaching

hen asked which aspect of campus life will be most affected by generative AI, 57 percent of college officials cite teaching. They selected other aspects of the college experience, including research (14 percent), admissions (8 percent), and IT and cybersecurity operations (6 percent), much less often.



But when asked whether generative AI would have a positive or a negative impact on teaching, the results show college leaders are less clear. In answer to questions that allowed respondents to make multiple selections, majorities say the new technology will be both a positive for teaching (69 percent) and a negative (60 percent).



Which part of college operations will AI tools have a negative impact in the next five years? Choose all that apply.



Source: Chronicle survey of 404 college officials Note: Percentages do not total 100 percent due to rounding.

The ambiguity of those responses might reflect the uncertainties that surround the new technology, which emerged on campus only recently.

"What those results reveal is that people are just starting to think about this," says Bryan Alexander, a futurist and senior scholar at Georgetown University. "They haven't begun to develop answers. Colleges are herd institutions. No one's forging a path ahead, so we're seeing a lot of milling around when it comes to dealing with this new technology."

Over all, whether college officials view generative AI as an aid or a detriment to teaching, they see the technology as an inevitable part of the future. A strong majority of respondents (79 percent) report that their institution is likely to embrace the technology in its teaching practices. At the same time, more than half (57 percent) believe new AI tools pose a threat to how institutions conduct research, operate, and teach. (See chart, page <u>5</u>.)





"What we're seeing is a mix of responses to generative AI, ones we can attribute to a difference in the level of familiarity with technology," says Kevin Gannon, director of the Center for the Advancement of Faculty Excellence and a professor of history at Queens University, in Charlotte, N.C. "Colleges are looking at a complex issue, but we're not quite at a point where people are coming up with answers or agreement. We're seeing a lot of responses from one end of the debate or another."

New technologies rightly draw skepticism from some people on campus, typically college officials and faculty members. "In higher ed, there has traditionally been a faction — I won't call them neo-Luddites — who view new tools with suspicion," says Gannon. Some technologies, such as earlier types of artificial intelligence and massive open online courses, or MOOCs, have failed to justify the hype that came with them. It shouldn't surprise anyone that generative AI receives the same level of scrutiny, he adds.

"It's a little different this time, in that we've had Covid, authoritarian attacks on our institutions, and now ChatGPT," he adds. "Amid all that, colleges need a clearer idea of how generative AI works. And we aren't there yet."

As they sort out their views, college officials are facing a new set of techrelated issues, such as how best to "How can institutions make faculty Al-educated so they can use those tools well? Given the other challenges institutions are facing, that's an awfully big lift."

train instructors in generative AI. Signs are they are only inching toward developing such programs, largely because of a lack of resources and time.

"How can institutions make faculty AI-educated so they can use those tools well? Given the other challenges institutions are facing, that's an awfully big lift," says Derek Bruff, a visiting associate director at the University of Mississippi's Center for Excellence in Teaching and Learning. "That kind of training might be made available quickly during a pandemic, but it's not 2020."

Getting faculty members to support tools that have so far created some headaches for them, particularly with regard to student cheating, represents another challenge for institutions. The fear of obsolescence also haunts many faculty members and officials.

"It's scary when you have a technology that takes skills and knowledge that you've painstakingly gathered through time and grit — and it does all of that better," says Jonathan Hersh, an assistant professor of economics and management science at Chapman University, in California. Nevertheless, he uses generative-AI tools to help him teach graduate students how to write code in a "Machine Learning for Managers" course. He has them plug their coding errors into an AI program, which helps them correct the mistakes.

"It's a crucial element in learning how to deal with coding problems, and it does it much, much faster and easier than I can," he says. The speed and power of generative AI will soon be regarded as a boon to teaching faculty members, he adds: "In the end, it will automate a lot of things that I don't like to do."

College officials have a generally optimistic view of how the new technology can aid student learning. When asked to select among five areas in which generative AI will benefit students, at least half of the "It's a crucial element in learning how to deal with coding problems, and it does it much, much faster and easier than I can. The speed and power of generative-Al will soon be regarded as a boon to teaching faculty members. In the end, it will automate a lot of things that I don't like to do."

respondents chose personalized education experiences and assessment (63 percent), interactive learning experiences (62 percent), career readiness (55 percent), streamlined research and writing (54 percent), and creative exploration and enhanced visual communication (50 percent).



Respondents are in wide agreement (95 percent) that their institution should teach students the basics of artificial-intelligence ethics and

literacy. But less than half (48 percent) say that their college has plans to prepare students for work that involves artificial-intelligence tools.



Source: Chronicle survey of 404 college officials

A bare majority (52 percent) believes that artificial-intelligence tools give institutions a chance to close achievement gaps among students. While generative AI may hold promise for students facing learning challenges, time crunches, or a need for "My college or university plans to prepare students for work that involves AI tools."



remedial education, some fear that the technology might also widen the digital gap — both among students and between institutions with few resources and others that can afford to roll out and use aspects of the technology.



"As we teach, we need to remain aware about the data bias in AI," says Melody Buckner, associate vice provost for digital learning and online initiatives at the University of Arizona. "We "As we teach, we need to remain aware about the data bias in Al. We need to remember humans created those algorithms and tendencies, and that artificial intelligence is not the same thing as the authentic intelligence we expect from our students."

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Concerns About **Cheating and** Assessments

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verwhelmingly, college officials worry about how generative AI is affecting academic integrity. Eightyfour percent believe their institution is concerned that students are using the new tools to complete assignments, and then passing the work off as their own.



Source: Chronicle survey of 404 college officials Note: Percentages do not total 100 percent due to rounding.

Nearly all respondents (98 percent) say that students' use of the new tools will require instructors to rethink how they assess student work.

But most institutions haven't taken steps to develop policies that would govern generative AI. Less than half of institutions (49 percent) have held meetings with faculty members and "Generative-AI tools will require instructors to rethink how they assess students."



students to discuss how to use it, developed a group made up of faculty members or administrators to study its use (41 percent), or created an academic-integrity policy for the technology (32 percent). More than a quarter of those surveyed (28 percent) say their institution has taken no steps.



College officials may not be fully prepared to deal with generative AI. A slight majority (54 percent) say they support the idea of a "pause" in the training of powerful AI systems. Twenty-five percent say they are not sure whether companies should slow the technology's development. Experts note that lawsuits by colleges and other entities over copyright infringement, as well as government regulations, may force technology companies to slow their roll.



Note: Percentages do not total 100 percent due to rounding.

"Higher ed might not be ready for this, but they need to act now," says Alexander, from Georgetown. "In terms of academic integrity, it looks like a lot of institutions are kicking responsibility down to individual faculty members, which means this will all be done helter-skelter. They need to create a campuswide policy now. Otherwise, we're looking at a real mess this fall."

Many institutions, including the University of Arizona and the University of Mississippi, have crafted integrity guidelines for faculty members to follow. Others, such as Northeastern University, recently created policies for students that offer precise guidance on generative-AI use. Northeastern requires students who use the technology to declare in their assignments that they have done so, include what prompts they gave it, and report the conversation with the program that followed.

But far-ranging oversight may be essential if institutions are serious about maintaining integrity standards and incorporating generative AI into learning, experts say.

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"From what I'm hearing, colleges around the nation aren't dealing with this on an institutional level," adds Tricia Bertram Gallant, director of academic integrity and the testing center at the University of California at San Diego. "We have faculty left wondering what to do, students wondering what to do so they don't get into trouble. Every institution should have a task force of faculty and students, so both sides can hear each other out. But that's not what we're seeing."

(Experts expressed little concern about the low number — 21 percent — of institutions that have purchased or plan to buy AI-detection software. "Those things don't work, anyway," says Bertram Gallant.) (See chart, bottom of page <u>20</u>.)



When asked about their greatest concern on the use of generative-AI tools by their college and students, respondents ranked the threat to academic integrity third (at 27 percent), behind misinformation or false information (35 percent) and weaker skills or content knowledge (28 percent).

"It's really surprising to me that leaders rank academic integrity so low," Bertram Gallant says. "There are people in higher ed who believe that if a student cheats, they are only hurting themselves. But there are more effects that come from student cheating, including some that can affect our certifications." Academic programs and degrees may become devalued, she says.

Other observers are more sanguine — or resigned. The technology is evolving too rapidly to be pinned down with edicts against cheating and for ethics, they say.

"If institutions write ironclad academic-integrity policies, they should write them in pencil," says Buckner, from Arizona. "We need to communicate to all our constituents that we're in a changing landscape, and what seems important now may not be in three or four months."

Instead of updating honor codes and student-behavior guidelines, institutions should focus on connecting with students about what scholarship is and how artificial intelligence might aid it, she adds. At the same time, colleges should highlight how the technology's misuse could keep students from developing deep critical-thinking skills and a broad base of knowledge.



When asked which AI-facilitated teaching opportunities were most important, survey respondents ranked ethical considerations (83 percent) and authenticity and copyright issues (77 percent) at the top — a sign that the integrity issues surrounding generative AI are seen as ripe for teaching moments.

"Some faculty are afraid that AI will dumb down students," Buckner adds. "But it's like people who use a GPS and end up driving into a lake. There are things about artificial intelligence that students shouldn't trust. It's our job to show them what those things are."



Streamlining Campus Functions

eyond aiding teaching and learning, generative AI has been touted by tech companies and some in higher education as a potential force for efficiency and

cost-cutting. It holds the promise, some believe, of streamlining office functions, the way facilities are run, how libraries collect and store information, and more.

Most college officials (59 percent) agreed that AI can reduce overall campus costs and create efficiencies. Only 14 percent disagreed. When asked which college operations would benefit from generative AI, college leaders cited most often after teaching — research (64 percent), career services (61 percent), libraries (61 percent), admissions (55 percent), academic advising (55 percent), and IT and cybersecurity operations (52 percent). (See bottom chart, page <u>12</u>.)

Campus offices that have often been seen by tech companies and others as ripe for technological upgrades, via AI chatbots and help in code writing, were rarely selected by respondents. In a separate question that asked college officials the one area where they see new AI tools as having the greatest impact in the next five years, academic advising, career services, facilities, financial-aid offices, and student affairs How much do you agree with the following statement?

"Al tools provide an opportunity to reduce campus costs and create new efficiencies."



Source: Chronicle survey of 404 college officials

were among the functions that each drew 2 percent or less of responses. (See top chart, page <u>12</u>.)

"That really surprised me because I believe AI tools will have the most impact in some of those areas, especially advising and student affairs," says Amelia Parnell, vice president for research and policy at Naspa, a professional group for student-affairs officials. "Efficiencies for faculty will come with generative AI. But many of those other functions will benefit as well."

Among the much-publicized threats posed by generative AI is the loss of jobs. Prompted bots can write both code and copy, much as people do but faster, possibly replacing workers. Generative AI has become an issue in many labor negotiations, including the months-long standoff between television writers and Hollywood studios.





Source: Chronicle survey of 404 college officials



Note: Only those who indicated they think in next five years that AI tools will lead to a reduction in the higher-ed work force were presented this question.

Yet surveyed college officials don't seem all that worried. A negligible number (4 percent) rank work-force downsizing as their biggest concern. (See page <u>23</u>.) Less than one in three (31 percent) foresee a reduction in higher-ed staffing in the next five years, though even more (36 percent) say they are unsure. The areas where they see jobs as most at risk include admissions and enrollment (62 percent), academic advisers and related staff (57 percent), and libraries (54 percent). Few experts foresee extensive job losses. "I doubt we see fewer humans in those offices, which are generally understaffed right now, especially in advising and counseling," says Timothy Renick, executive director of the Institute for Student Success, a national organization based at Georgia State University.

What we're more likely to see, particularly in campus offices, is stasis. "Generative AI will help us answer more questions from students on financial aid, student services, and in other areas. You'll see people who have been freed up to do different things within their jobs because the bots will answer the questions posed to those offices most often," Renick says.

He and others say that generative AI will make student-success operations run more smoothly. As the technology pulls together more data more rapidly on student performance and learning styles, staffers will be able to better craft ways to reach them and improve their academic performance.

Colleges are more than three times as likely (at 43 percent) to hire new employees to support AI teaching, research, or operations than are those that probably won't (14 percent),



according to the survey, though 43 percent of respondents say they are not sure whether their institution will bump up AI-related hiring. IT and cybersecurity operations are the most likely to see additional hiring, say 65 percent of respondents. A significant number of college officials foresee an increase in jobs for adjunct professors (47 percent) and tenured or tenure-track faculty members (42 percent).



Note: Only those who indicated they think in next five years that AI tools will lead to a reduction in the higher-ed work force were presented this question.

"That's just delusional," says Alexander, from Georgetown. "They may be thinking they'll be hiring more people to teach generative AI. But I doubt we see real gains in those areas."

Regardless of whether colleges hire more people, one thing is certain: The nature of campus work will change for many employees.

CONCLUSION

fter experiencing a jolt once generative AI came to campuses, colleges are beginning to think through the uses, threats, and implications of

this powerful technology.

Most college leaders believe that generative AI represents a threat to academic integrity and to how institutions teach, conduct research, and operate.

Otherwise, finding consensus among groups of administrators isn't easy, especially in their views of generative AI and teaching. Majorities see emerging technologies as having both a positive and a negative effect on teaching, while most campus leaders see AI tools as a means of operating more economically and efficiently.

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Higher education is still processing its response to generative AI. As colleges begin the second year of coexisting with it, they will function as working laboratories, testing how new AI tools may help them fulfill their missions — or whether those tools might endanger values such as academic integrity, one-on-one mentorship, and the pursuit of truth. Or, like many previously hyped innovations, generative AI might prove capable of providing both answers and challenges.

METHODOLOGY

The nationwide survey of U.S. college administrators employed at two- and four-year institutions was held online from June 19 to July 14.

Of the 404 respondents, 34 percent identified themselves as directors, 29 percent as deans (including assistant, associate, or vice deans), 13 percent as department heads, 11 percent as vice presidents, 8 percent as provosts (including assistant, associate, or vice provosts), and 3 percent as chancellors or presidents.

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