Generative AI and PostsecondaryInstructional Practices

Findings from a National Survey of Instructors

Dylan Ruediger
Melissa Blankstein
Sage Love

June 20, 2024

ITHAKA S+R

Ithaka S+R provides research and strategic guidance to help the academic and cultural communities serve the public good and navigate economic, demographic, and technological change.

Ithaka S+R is part of ITHAKA, a not-for-profit with a mission to improve access to knowledge and education for people around the world. We believe education is key to the wellbeing of individuals and society, and we work to make it more effective and affordable.

ITHAKA S+R

Introduction

The commercial release of ChatGPT 3.5 in November 2022 put a powerful new tool into the hands of a mass market, and higher education quickly became a key cultural flashpoint for public discussion of this novel technology. Instructors and administrators at colleges and universities around the world found themselves in a new technological environment that challenged long-standing norms around academic integrity and raised serious questions about when and how learning happens in a college course.

Understanding how instructors are (or are not) using generative AI in their classrooms is vital because most college and university guidelines leave decision making about how, when, and if generative AI use is permitted to the discretion of individual instructors. Provosts and presidents will spend the coming years grappling with equipping students with AI skills and literacies and assessing the most appropriate and ethical ways to harness this technology to promote teaching and learning. CIOs and IT directors are beginning to make financial commitments to specific generative AI platforms. Centers for teaching and learning, libraries, and other university offices are developing service models and articulating best practices. The success of all these initiatives will hinge on the instructional practices of individual instructors.

Understanding how instructors are (or are not) using generative AI in their classrooms is vital because most college and university guidelines leave decision making about how, when, and if generative AI use is permitted to the discretion of individual instructors.

To gain insight into evolving instructional practices, we included a short four-question section dedicated specifically to generative AI as part of a national survey of instructors.[1] The survey was sent to postsecondary instructors from a wide range of disciplines and at institutions in every Carnegie Classification, yielding 2,654 responses—the largest survey of US instructors about the adoption of generative AI for teaching purposes of which we are aware. Our survey was in the field from February 7, 2024, to March 10, 2024. As such, it provides a snapshot of instructional practices two semesters after the dramatic advent of generative AI as a cultural and educational force.

Our survey provides compelling evidence that instructors are exploring instructional uses of generative AI in large numbers. It also highlights ongoing uncertainty about how best to use the technology and indicates that many instructors do not allow students to use generative AI tools. Our primary findings are:

- The majority of instructors have at least passing familiarity with generative AI tools. But many, especially older instructors, are not confident in their abilities to use them for pedagogical purposes or in their value in educational contexts.

- A large majority (72 percent) of instructors have experimented with using generative AI as an instructional tool. Yet while instructors are using generative AI in many different ways, no individual use case has become particularly well established.

- Most instructors want some kind of institutional support to help them integrate generative AI into their courses. But only a minority of them are looking for any specific support service, likely creating a dilemma for those investing in providing such services.

- Many faculty, especially in the humanities, still prohibit student use of generative AI.

---

[1] The full 2024 US Instructor Survey report will be published in summer 2024. For more information about its scope, see: Melissa Blankstein and Sage Love, "The US Instructor Survey 2024 is Open," *Ithaka S+R*, 7 February 2024, https://sr.ithaka.org/blog/the-us-instructor-survey-2024-is-open/.

Methodology

The analysis at hand is part of the larger national 2024 US Instructor Survey, an instructor-focused edition of the national US Faculty Survey Ithaka S+R has been fielding for over 20 years on a triennial basis. The population for this survey consists of faculty members at four-year postsecondary institutions in the US. The survey was fielded through Qualtrics in February and March 2024 to a sample of 135,284 faculty members.

We received 5,259 completed responses for a total response rate of 3.9 percent. Respondents taking the survey were randomly assigned to one of two additional blocks of questions representing topical deep dives—one on generative AI and one on academic freedom and censorship. While findings from the overall survey, as well as the censorship and academic freedom topical deep dive are forthcoming, here we report on the findings related to the generative AI topical deep dive. For the purposes of this survey, we defined "generative AI" as "AI models that can create ("generate") original content (e.g., text, images, code), for example, ChatGPT, Midjourney, Google Bard, etc."

A subsample of 2,654 individuals were randomly assigned to, and completed, four questions on the use of generative AI in instructional contexts. It is worth noting that the response pool skews white (75 percent) and 45 years and older (75 percent). Fifty-one percent of respondents are women, and 61 percent are tenured or tenure-track. The plurality of respondents worked in the social sciences (44 percent), followed by humanities (29 percent), and sciences (24 percent). Fifty-four percent of respondents were employed at doctoral universities.[2]

---

[2] Humanities includes art history, classical studies, foreign languages, history (including the history of science), law, literature, music, philosophy, religion, and theater and drama. Social sciences includes anthropology (includes archeology), business and finance, economics, education (includes higher education), geography, political science, psychology, public policy (including health policy), sociology, and women's studies. Sciences includes agricultural studies, biology (includes botany, ecology, zoology), chemistry, engineering, geology, mathematics (includes statistics), physics, physical sciences/astronomy, and public health. Medical faculty also received the survey. A fifth category—area studies—is not broken out separately as we did not have sufficient responses from instructors in area studies disciplines.
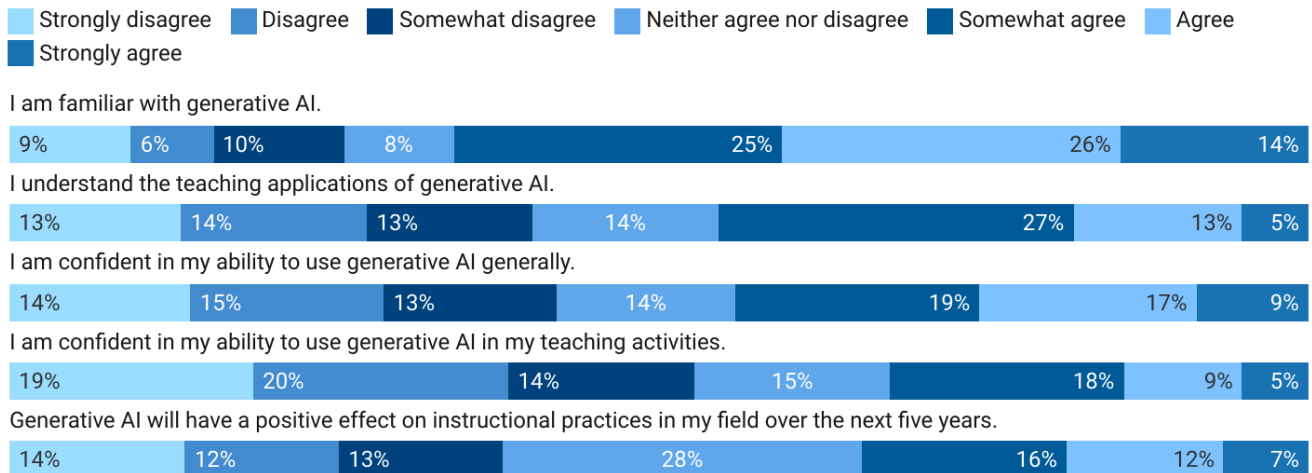
Findings

The majority of instructors have at least passing familiarity with generative AI tools. But many, especially older instructors, are not confident in their abilities to use them for pedagogical purposes and their value in educational contexts.

Figure 1: Please read the following statements and indicate the degree to which you agree or disagree with each. *Percent of respondents who strongly disagree/disagree, somewhat agree/disagree or neither agree nor disagree, or strongly agree/agree with each statement.*

Strongly disagree ▪ Disagree ▪ Somewhat disagree ▪ Neither agree nor disagree ▪ Somewhat agree ▪ Agree
Strongly agree

I am familiar with generative AI.

| 9% | 6% | 10% | 8% | 25% | 26% | 14% |

I understand the teaching applications of generative AI.

| 13% | 14% | 13% | 14% | 27% | 13% | 5% |

I am confident in my ability to use generative AI generally.

| 14% | 15% | 13% | 14% | 19% | 17% | 9% |

I am confident in my ability to use generative AI in my teaching activities.

| 19% | 20% | 14% | 15% | 18% | 9% | 5% |

Generative AI will have a positive effect on instructional practices in my field over the next five years.

| 14% | 12% | 13% | 28% | 16% | 12% | 7% |

Created with Datawrapper

A majority (66 percent) of instructors indicated being at least somewhat familiar with generative AI tools, while only 16 percent reported having little to no familiarity. These are remarkable numbers given that OpenAI released ChatGPT just 13 months prior to the launch of our survey, underlining the speed at which generative AI is spreading. Instructors have clearly been paying attention.

However, general familiarity with these tools has not yet translated into deep understanding about how to use them in pedagogical contexts. As one respondent noted, "My negative answers on AI reflect a lack of knowledge of what is possible and effective, rather than a negative view on implementation of AI in some aspects of teaching." Only 18 percent of respondents agreed or strongly agreed that they understand teaching applications of generative AI, and only 14 percent agreed or strongly agreed they feel confident in their ability to use generative AI in their instruction. In contrast, 28 percent of instructors disagreed or strongly disagreed that they understand the potential applications of AI in teaching, and 38 percent felt little to no confidence in their ability to incorporate generative AI into their instructional practices. Despite the rapid proliferation of tips, guidelines, workshops, and other resources focused on instructional uses of generative AI, instructors are still struggling to integrate the technology into their courses. As one respondent noted, "I think that faculty members need to be trained in how to teach students to use AI materials ethically and correctly." We suspect many of this respondent's colleagues would agree.

Familiarity with generative AI is not necessarily associated with enthusiasm for it. Indeed, our survey found high levels of uncertainty among instructors about whether generative AI's net effects will be positive or negative.

Familiarity with generative AI is not necessarily associated with enthusiasm for it. Indeed, our survey found high levels of uncertainty among instructors about whether generative AI's net effects will be positive or negative. Only 19 percent of instructors agreed or strongly agreed that generative AI adoption would benefit teaching in their fields, while 25 percent disagreed or strongly disagreed that its impact would be positive. The clear majority—56 percent—were on the fence.

Skepticism of generative AI's value was highest among humanities faculty, where 45 percent disagreed or strongly disagreed that AI's impact on instructional practices in their field would be positive. This sentiment was further elucidated in the open comments:

> "LLMs and Generative AI are going to undermine the trust between faculty and students. This is serious for all courses that involve writing, so a major blow to the humanities. Students need to read and think for themselves, not rely on algorithmically generated guesses."

> "Philosophy is a discipline that teaches thinking as a practice, and the use of AI to do thinking for you destroys this practice."
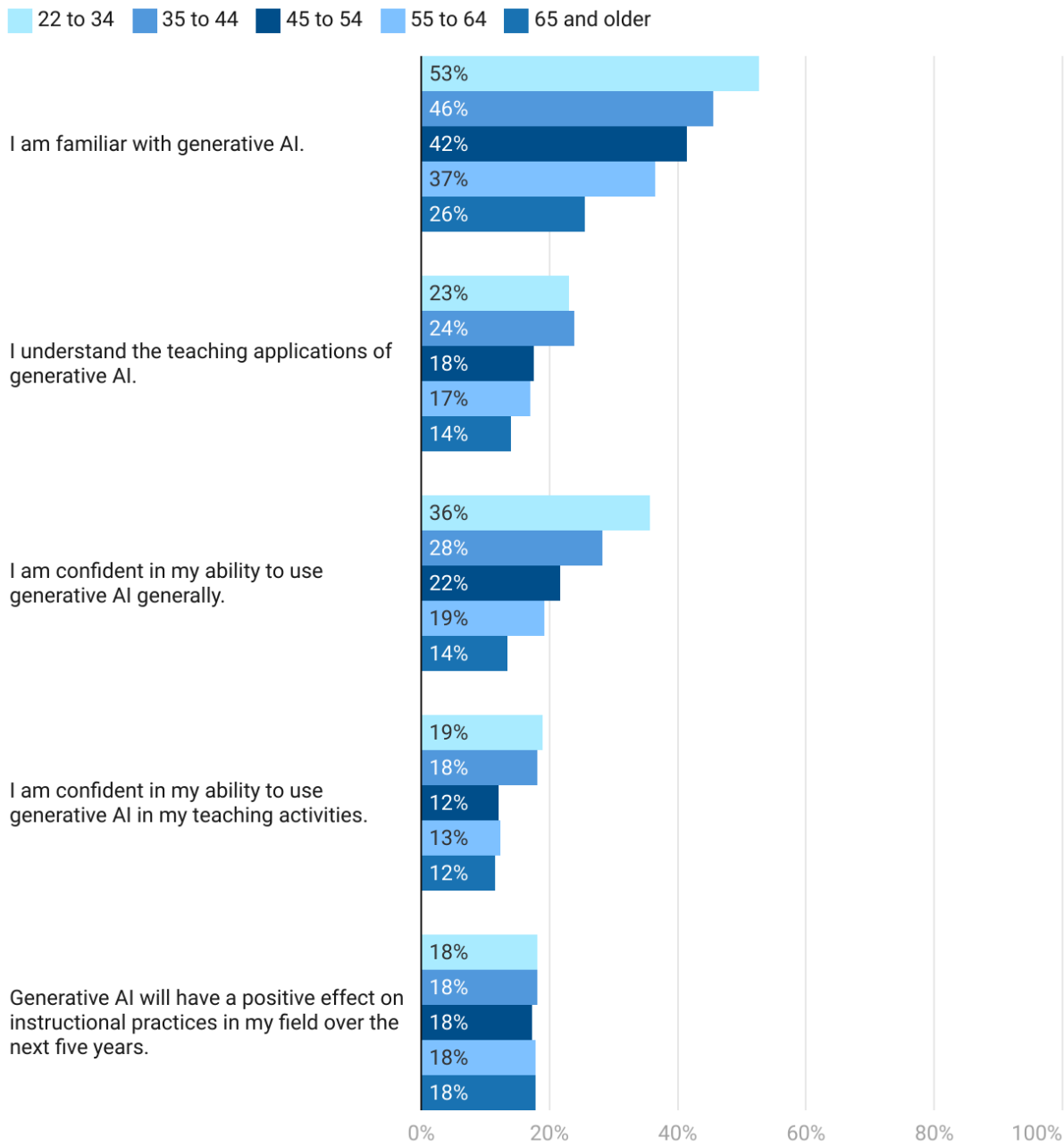
> "In Foreign Languages class AI is an issue. There is a huge difference between output at home and in class."

A large body of anecdotal evidence has suggested that familiarity with, and adoption of, generative AI is at least in part a generational issue. Our survey findings buttress these claims. Familiarity with generative AI, understanding of its teaching applications, and confidence in using it for either general or pedagogical purposes all correspond with age. Faculty skepticism and uncertainty are cross-generational concerns.

Familiarity with generative AI, understanding of its teaching applications, and confidence in using it for either general or pedagogical purposes all correspond with age. Faculty skepticism and uncertainty are cross-generational concerns.

Figure 2: Please read the following statements and indicate the degree to which you agree or disagree with each. *Percent of respondents who strongly disagree/disagree, somewhat agree/disagree or neither agree nor disagree, or strongly agree/agree with each statement by age.*

Legend: ■ 22 to 34 ■ 35 to 44 ■ 45 to 54 ■ 55 to 64 ■ 65 and older

I am familiar with generative AI.
- 53%
- 46%
- 42%
- 37%
- 26%

I understand the teaching applications of generative AI.
- 23%
- 24%
- 18%
- 17%
- 14%

I am confident in my ability to use generative AI generally.
- 36%
- 28%
- 22%
- 19%
- 14%

I am confident in my ability to use generative AI in my teaching activities.
- 19%
- 18%
- 12%
- 13%
- 12%

Generative AI will have a positive effect on instructional practices in my field over the next five years.
- 18%
- 18%
- 18%
- 18%
- 18%

Created with Datawrapper

Finding 2

A large majority of instructors (72 percent) have experimented with using generative AI as an instructional tool. Yet while instructors are using generative AI in many different ways, no individual use case has become particularly well established.

To understand how instructors were using generative AI, we asked whether respondents were using generative AI for one or more instructional purposes such as designing course materials or assessing student work. Seventy-two percent of respondents reported having used generative AI for at least one instructional activity. While our findings do not explore how often faculty are using generative AI in instructional contexts, the large percentage of those reporting having at least experimented with it underscores how rapidly the technology is spreading within higher education.

The large percentage of those reporting having at least experimented with generative AI underscores how rapidly the technology is spreading within higher education.

Figure 3: Percentage of respondents who have used generative AI for at least one instructional purpose.
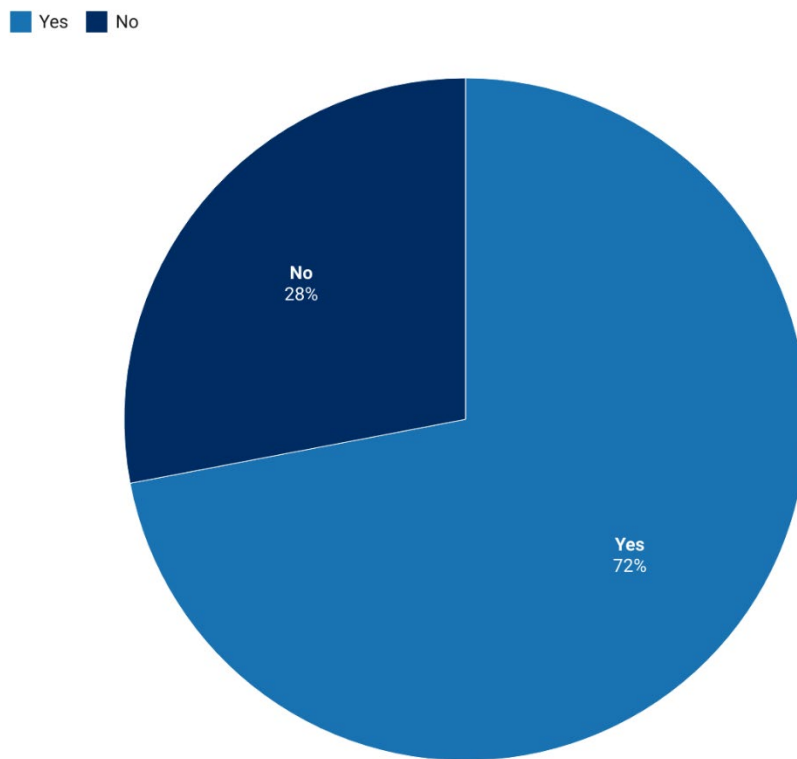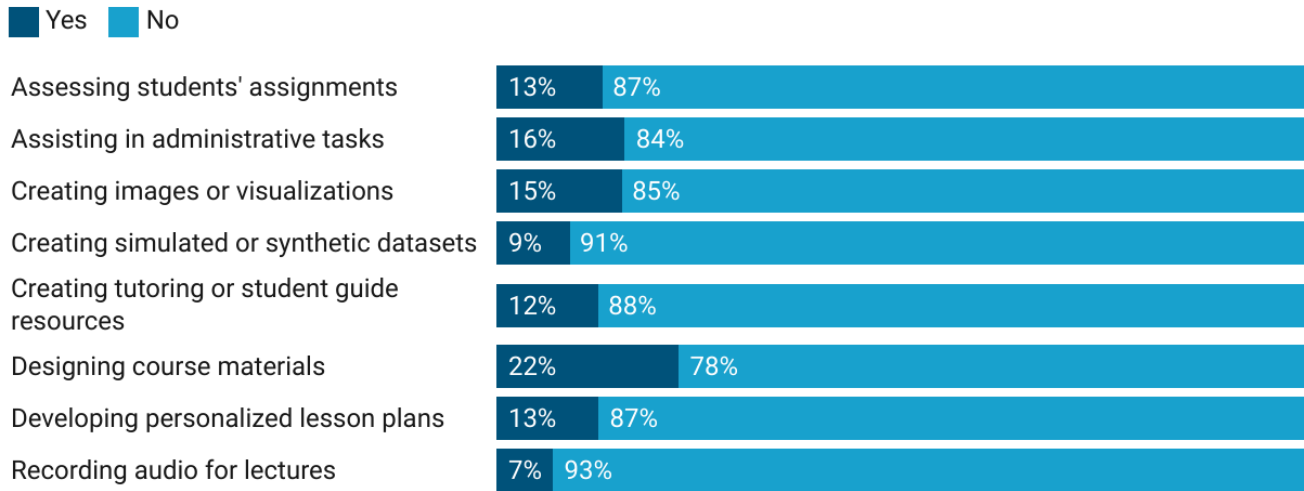

Created with Datawrapper

Our findings also indicate that instructors are using generative AI in a variety of ways, and that no individual use case has become particularly well established. The most common use cases—designing course materials, helping with email or other administrative tasks, and creating images or visualizations—were all used by only 22 percent, 16 percent, and 15 percent of instructors, respectively. The remaining five use cases that we identified were each used by only about 1 in 10 instructors.

> The most common use case—designing course materials—was used by only 22 percent of instructors.

Figure 4: In which of the following ways have you yourself engaged with generative AI in your teaching?
Percentage of respondents who indicated they have or have not used generative AI for each activity.

■ Yes ■ No

Activity	Yes	No
Assessing students' assignments	13%	87%
Assisting in administrative tasks	16%	84%
Creating images or visualizations	15%	85%
Creating simulated or synthetic datasets	9%	91%
Creating tutoring or student guide resources	12%	88%
Designing course materials	22%	78%
Developing personalized lesson plans	13%	87%
Recording audio for lectures	7%	93%

Created with Datawrapper

The instructors who have not engaged with generative AI in their teaching are most often faculty at doctoral institutions and are in the social sciences. Forty-one percent of social scientists have not engaged with any generative AI for their teaching, followed by 30 percent of humanists, and 27 percent of scientists. Additionally, 58 percent of respondents who have not engaged with any generative AI in their teaching are from doctoral universities followed by instructors at master's colleges (28 percent) and baccalaureate institutions (13 percent).

> Forty-one percent of social scientists have not engaged with any generative AI for their teaching.
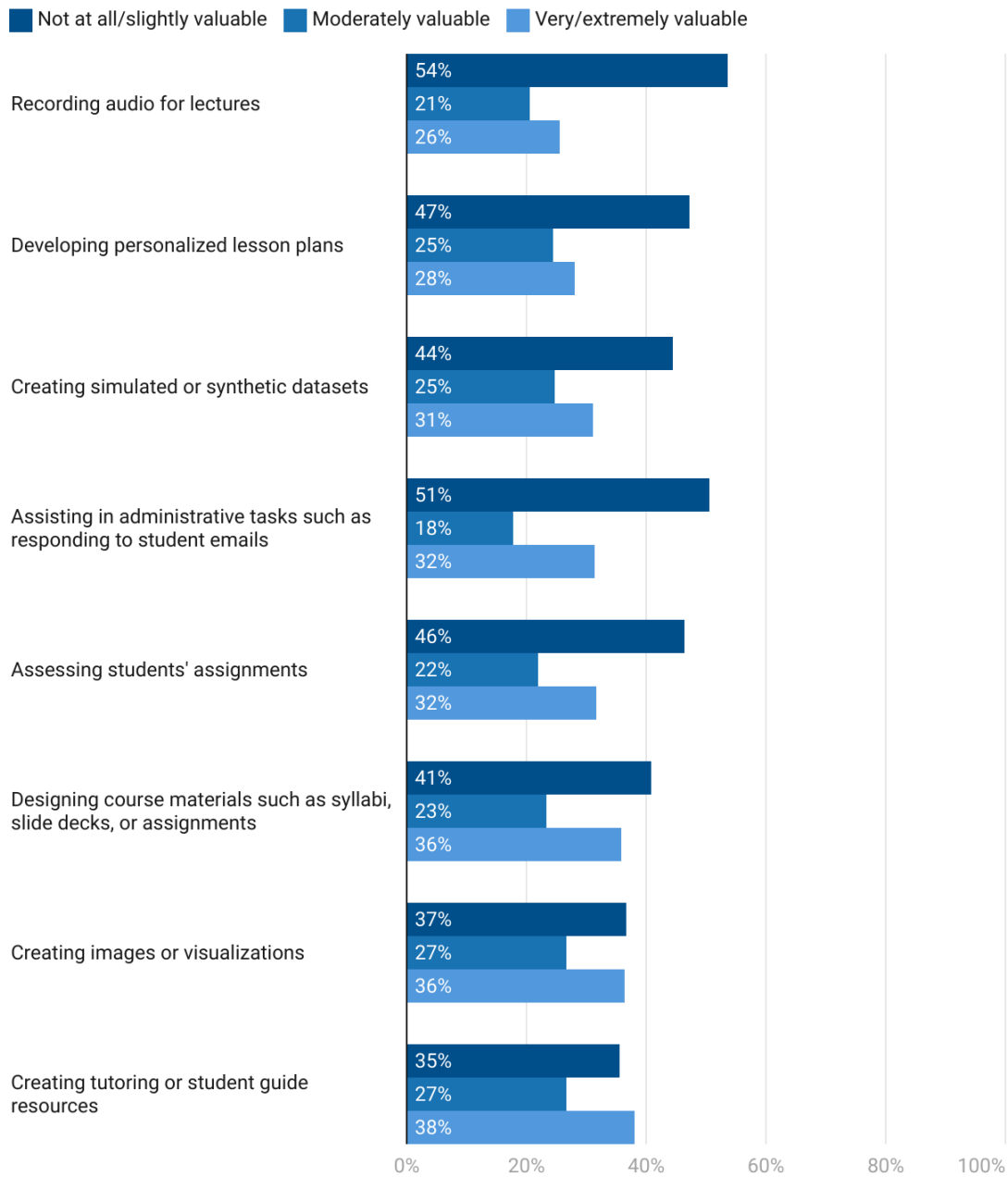
🔍 Finding 3

Most instructors want some kind of institutional support to help them integrate generative AI into their courses. But only a minority of them are looking for any specific support service, likely creating a dilemma for those investing in providing such services.

While most instructors have made at least some efforts to incorporate generative AI, they also report relatively low levels of understanding about how it could be used in instructional contexts, and even lower levels of confidence in their personal ability to do so (see finding 1). However, our survey revealed broad interest among instructors in building skills in this area.

Instructors expressed particular interest for support in three areas: creating tutorials and study guides (38 percent rated very or extremely valuable), creating images or visualizations for classroom use (36 percent rated very or extremely valuable), and using generative AI to design syllabi, assignments, and other course materials (36 percent rated very or extremely valuable). However, roughly half of instructors indicated that they would find support moderately to extremely valuable for every use case we identified except the use of generative AI to record audio for lectures (54 percent rated not at all or slightly valuable). While this means that approximately half of instructors see some value in instructional support for engaging with generative AI, it indicates that universities that build out services to support a range of AI-informed instructional uses will have a meaningful audience.

Universities that build out services to support a range of AI-informed instructional uses will have a meaningful audience.
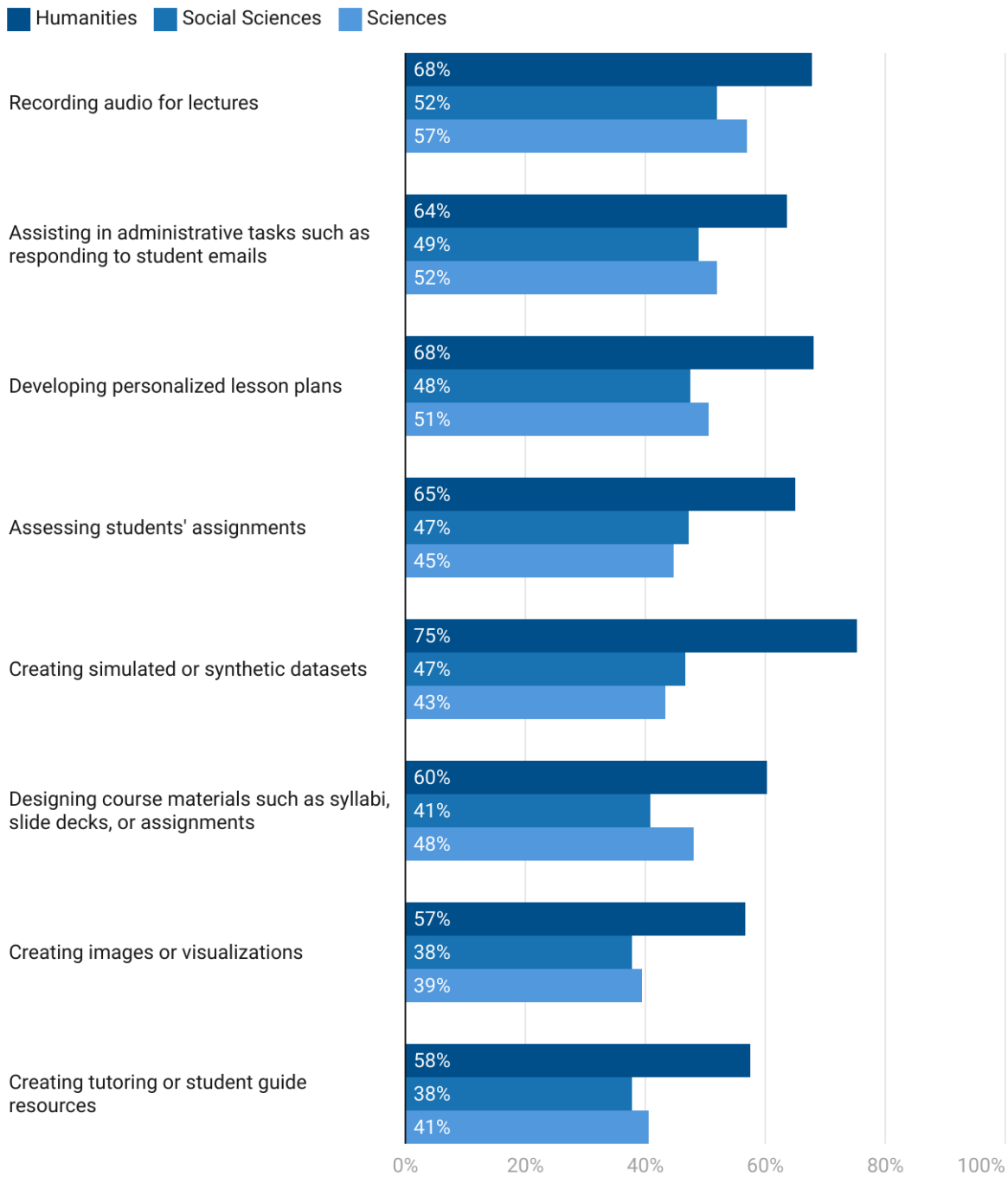
Figure 5: How valuable do you find support for each of the following uses of generative AI, or how valuable would you find it if this support was offered to you? *Percentage of respondents who rated each activity as not at all/slightly valuable, moderately valuable, or very/extremely valuable.*

■ Not at all/slightly valuable ■ Moderately valuable ■ Very/extremely valuable

Recording audio for lectures
- 54%
- 21%
- 26%

Developing personalized lesson plans
- 47%
- 25%
- 28%

Creating simulated or synthetic datasets
- 44%
- 25%
- 31%

Assisting in administrative tasks such as responding to student emails
- 51%
- 18%
- 32%

Assessing students' assignments
- 46%
- 22%
- 32%

Designing course materials such as syllabi, slide decks, or assignments
- 41%
- 23%
- 36%

Creating images or visualizations
- 37%
- 27%
- 36%

Creating tutoring or student guide resources
- 35%
- 27%
- 38%

0%   20%   40%   60%   80%   100%

Created with Datawrapper

Interest in support services varies by discipline. Humanities instructors were generally more skeptical of generative AI than faculty from other macro-disciplines and also less likely to see value in instructional support regardless of use case. In contrast, social science instructors were most likely to see at least moderate value in a wide range of support types.

Figure 6: How valuable do you find support for each of the following uses of generative AI, or how valuable would you find it if this support was offered to you? *Percentage of respondents who rated each activity as not at all or slightly valuable.*

■ Humanities ■ Social Sciences ■ Sciences

Recording audio for lectures
- 68%
- 52%
- 57%

Assisting in administrative tasks such as responding to student emails
- 64%
- 49%
- 52%

Developing personalized lesson plans
- 68%
- 48%
- 51%

Assessing students' assignments
- 65%
- 47%
- 45%

Creating simulated or synthetic datasets
- 75%
- 47%
- 43%

Designing course materials such as syllabi, slide decks, or assignments
- 60%
- 41%
- 48%

Creating images or visualizations
- 57%
- 38%
- 39%

Creating tutoring or student guide resources
- 58%
- 38%
- 41%

0%   20%   40%   60%   80%   100%

Created with Datawrapper

🔍 Finding 4

Many faculty, especially in the humanities, still prohibit student use of generative AI.

Overall, 42 percent of instructors completely prohibit their students from using generative AI, which suggests that many faculty who have personally experimented with using the technology for instructional purposes do not allow their students similar experimental latitude. Postsecondary instructors have a well-earned reputation as late adopters and have expressed a wide range of concerns about generative AI, so it is not surprising that many of them do not allow their students to use generative AI.[3]

Forty-two percent of instructors completely prohibit their students from using generative AI.

When instructors do allow or encourage students to use generative AI, they are most likely to permit use of generative AI as a brainstorming tool: 37 percent of instructors allow students to use generative AI for this purpose. Other use cases that instructors allow with some frequency are outlining (23 percent), drafting or revising written assignments (23 percent), and using generative AI as a study guide (21 percent). Other ways instructors encourage or allow students to use generative AI include generating practice questions, presentations or slide decks, and sample writing for critical analysis. In the open responses, some instructors also indicated that while they do not actively encourage students to use generative AI, they also do not actively prohibit its use in their courses.

It is noteworthy that the most commonly encouraged/allowed use cases were those related to writing, a finding that is somewhat surprising given that much of the early controversy around generative AI focused specifically on its abilities to enable plagiarism. One likely explanation is that writing occupies a unique role as a sort of default assignment modality in a wide number of academic disciplines. The relatively small
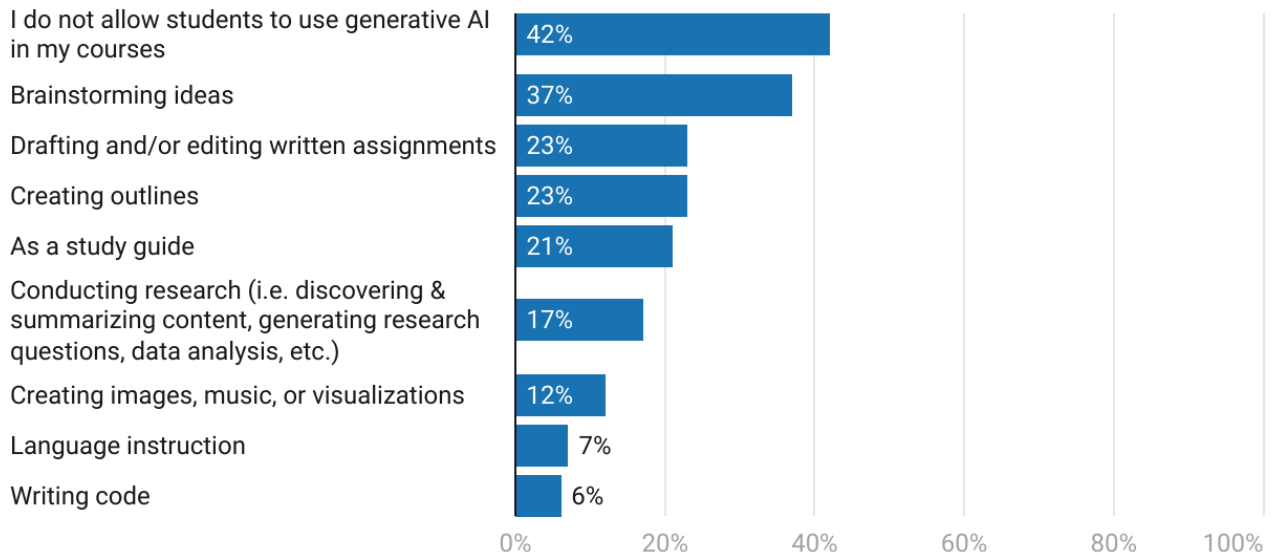
---

[3] Cormac McGrath, Teresa Cerrato Pargman, Niklas Juth, Per J. Palmgren, "University Teachers' Perceptions of Responsibility and Artificial Intelligence in Higher Education – An Experimental Philosophical Study," *Computers and Education: Artificial Intelligence* 4 (2023) https://doi.org/10.1016/j.caeai.2023.100139.

number of instructors allowing students to use generative AI to write code, or for language instruction, for example, is likely in part a reflection of the relatively small number of courses where such activities would take place. In contrast, writing is a common activity in courses across disciplines.

Figure 7: In which of the following ways have you yourself encouraged or allowed students to use generative AI in your courses? Please select all that apply. *Percentage of respondents who selected each activity.*

Activity	Percentage
I do not allow students to use generative AI in my courses	42%
Brainstorming ideas	37%
Drafting and/or editing written assignments	23%
Creating outlines	23%
As a study guide	21%
Conducting research (i.e. discovering & summarizing content, generating research questions, data analysis, etc.)	17%
Creating images, music, or visualizations	12%
Language instruction	7%
Writing code	6%

Created with Datawrapper

Unsurprisingly, a larger share of instructors in the humanities (53 percent) do not allow students to use generative AI in their courses relative to their colleagues in other disciplines: 45 percent of faculty in the sciences and 40 percent of faculty in the social sciences do not allow students to use generative AI. However, a larger share of instructors in the social sciences allow their students to use generative AI for brainstorming ideas (40 percent compared to 30 percent of instructors in the humanities and 27 percent of instructors in the sciences), as well as creating outlines (24 percent compared to 17 percent of instructors in the sciences and 15 percent of instructors in the humanities).

Conclusion

As has been the case across sectors, the potential impacts of generative AI have been a major strategic question in higher education since the beginning of the spring 2023 semester. Our survey is one of several that indicate high levels of uncertainty and deep pockets of pessimism about whether those impacts will be positive or detrimental to teaching and learning.[4] Serious concerns about academic integrity, ethics, accessibility, and educational effectiveness are contributing to this uncertainty and hostility. These concerns, along with usage of generative AI tools for instructional purposes, are most widespread among older faculty, but are shared by faculty across disciplines and professional ranks.

Even so, the number of faculty who have at least tested the waters of using generative AI for instructional purposes is remarkable and may have grown rapidly since last fall. A September 2023 survey found that only 22 percent of faculty were using generative AI for such purposes.[5] While our findings are not directly comparable, it seems plausible to suggest that many faculty who had witnessed the explosion of generative AI technology over the spring had been persuaded to at least test the waters by the end of the year. One significant question that our survey leaves unanswered is how many of those faculty found their experiments fruitful enough to warrant further exploration.

Institutions are allocating significant resources to enabling and encouraging GAI use by instructors under the reasonable assumption that generative AI can't be put back in the bottle, and the arguably less reasonable assumption that widespread, transformative use of generative AI is inevitable. This may well prove to be the case. Certainly, university administrators have largely moved away from prohibition-based

---

[4] Karthik Duraisany et al., "Generative Artificial Intelligence Advisory Committee Report," *University of Michigan*, 30 June 2023, https://drive.google.com/file/d/101zhMpzr67SRePbbxfHc87j-5mSlkuOL/view; Tiffany Petricini, Chuhao Wu, and Sarah Zipf, "Perceptions about Generative AI and ChatGPT Use by Faculty and College Students," *Communication Department, Penn State University*, https://files.osf.io/v1/resources/jyma4/providers/osfstorage/64d3e5d9c7ab294c0fd4df67?format=pdf&action=download&direct&version=5.

[5] C. Shaw, L. Yuan, D. Brennan, S. Martin, N. Janson, K. Fox, and G. Bryant, "GenAI In Higher Education: Fall 2023 Update Time for Class Study," *Tyton Partners*, 23 October 2023, https://tytonpartners.com/app/uploads/2023/10/GenAI-IN-HIGHER-EDUCATION-FALL-2023-UPDATE-TIME-FOR-CLASS-STUDY.pdf.

approaches to generative AI in favor of more nuanced consideration of what an effective AI-informed pedagogy would be. Our findings suggest that roughly four in 10 faculty are still relying on prohibitionist approaches, but that the vast majority have also taken at least modest steps towards integrating generative AI into their teaching. Whether those steps portend more openness to generative AI or confirm existing skepticism will play an important role in determining how far faculty will go on the road on which administrators hope to lead them.