Supporting Instruction and Learning Through Artificial Intelligence

A Survey of Institutional Practices & Policies

Judith Sebesta
Principal, Sebesta Education Consulting LLC

Van L. Davis
Chief Strategy Officer, WCET

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Author

Judith Sebesta
Principal, Sebesta Education Consulting LLC

Contributing Author

Van L. Davis
Chief Strategy Officer, WCET

** Data from this project is available for reference here: wcet.wiche.edu/resources/reference-data-wcet-supporting-instruction-learning-through-artificial-intelligence-a-survey-of-institutional-practices-policies/

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About WCET

WICHE Cooperative for Educational Technologies (WCET) is the leader in the practice, policy, & advocacy of digital learning in higher education. WCET is a member-driven nonprofit which brings together colleges, universities, higher education organizations, and companies to collectively improve the quality and reach of technology-enhanced learning programs. Learn more at wcet.wiche.edu.

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Sebesta Education Consulting LLC supports innovation, inspiration, and transformation across the higher education ecosystem, with expertise in such areas as online/digital and open education, pedagogy, and program development. Learn more at https://sebestaeducationconsulting.com/.

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Introduction

To say that Artificial Intelligence (AI) is having a moment might be an understatement. Although its utilization for various purposes in education is not new, Generative AI (e.g., ChatGPT) has recently sparked provocative conversations, excitement, skepticism, and even fear about how it might impact higher education. As Van Davis, contributing author, states in, "WCET Primer for Higher Education: General Brief on Generative AI," this technology "will have a significant impact on faculty, staff, administrators, and students as they all try to understand the role of AI in higher education" (Davis, 2023).

Artificial Intelligence in general poses numerous challenges for educators and students alike, such as academic integrity, lack of knowledge and training, misinformation, and implementation costs. However, AI also presents opportunities to support equity and access, increased efficiency, new understandings of (and urgency around) digital literacy and crucial workforce skills, and improved instruction and learning, among others. There is still so much to learn about these challenges and benefits, both existing and potential. And ultimately, AI calls into question the very nature and definition of education itself.

> "The bigger question is – the big question is – what is learning in this environment? That's the big, existential, but very practical, question."
>
> *- John Opper, Executive Director, Distance Learning and Student Services, Florida Virtual Campus*

In April 2023, WCET - the WICHE Cooperative for Educational Technologies, undertook a national survey to ascertain how and why postsecondary institutions are using Artificial Intelligence to support instruction and learning, what policies are in place, and what are the perceived barriers to, and benefits for, its use. Guiding research questions included:

- How and to what extent are postsecondary institutions across the U.S. using AI?
- Where is the greatest uptake, use, and impact of AI within and across institutions?
- What key issues and challenges are affecting AI use for institutions?
- What is the potential for its use?
- What types of AI are most likely to impact higher education?

The survey was sent via SurveyMonkey to a total of 13,215 recipients, with 648 respondents for a return rate of 5%. Respondents were given a selection of options for all questions except the open-ended final question, and many of the total twenty questions included the opportunity to write in responses as well. Those write-in responses were analyzed using both deductive and inductive coding. This analysis, combined with the primary data collected plus six in-depth interviews conducted post survey, surfaced some insights and key findings to better understand the use of AI at institutions of higher education to support instruction and learning.

It is important to note that the research presented in this report is merely a snapshot in time of a rapidly expanding, ever-changing set of technologies and should be utilized as such.

Definitions

Artificial Intelligence (AI)

Intelligence—perceiving, synthesizing, and inferring information—demonstrated by machines, as opposed to intelligence displayed by humans and non-human animals. It is an umbrella term over generative AI, natural and large language models, and machine and deep learning. AI in an instructional environment may include (but is not limited to) adaptive and automated assessments, practice opportunities, and personalized tutoring and feedback. In addition, AI tools are being used to generate content, write code, conduct research, resolve accessibility issues, reconfigure writing processes, and detect plagiarism. AI tools also can be used to provide learning support in such forms as identifying at-risk students, recommending courses, increasing motivation, and predicting student performance.

Generative AI

A form of artificial intelligence that can create new content such as text, visual images, code, audio, or video because its neural networks have been trained on a large amount of data. Outputs might include digital art, essays, short answers, blog posts, computer code, press releases, and other types of novel content.

Neural Networks

Computer networks that are built in such a way as to mimic the human brain with each node leading to other nodes, much as the brain is a complex collection of networked neurons.

Large Language Model

A form of text-based generative AI (e.g., ChatGPT) that is trained on an enormous amount of text so that it can predict and create a given sequence of words. This

capability allows the model to "understand" inquiries and replicate human language in a largely coherent (if not always accurate) way.

Machine Learning

The use and development of computer systems that can learn and adapt without following explicit instructions, by using algorithms and statistical models to analyze and draw inferences from patterns in data (IBM, 2022).

Deep Learning

A subset of machine learning that comprises a complex neural network with three or more layers of networks. It is a technique that teaches computers to do what comes naturally to humans: learn by example.

Key Findings and Insights

Utilization

- Using AI to support instruction and learning is nascent on many campuses, although some have been using it for this and other purposes for years.
- Concerns about AI and academic integrity – i.e., preventing cheating – are a focus for many institutions and the top reason given for *not* using AI.
- At the majority of institutions, use of AI to support instruction and learning at the institution is on the radar or scattered but there is no systemic action yet. The highest percentage of existing, planned, or considered use is for detecting AI-generated content, plagiarism, with editing and content creation close behind.
- In terms of discipline-specific use, AI is being most utilized, perhaps unsurprisingly, in Computer and Information Science, but a number of respondents also indicated use in English and Business Administration, among other fields. However, the Arts & Humanities may see a renaissance as critical and creative skills become crucial in ensuring responsible and ethical use of AI.

Support, Incentives, and Training

- Online and Distance Education Administrators and Staff, including Instructional Designers, are the primary roles leading this work on their campuses, with faculty and Chief Academic Officers and Provosts (as well as Associate and Assistant CAO/Provosts) close behind. Additionally, on some campuses, leaders at the highest level are engaging in work around AI – and some are including students in AI policy development and practice as well.
- The overwhelming majority of institutions do not offer incentives to encourage faculty to use AI, and a majority also reported no faculty development or training around AI.

Strategy, Planning, and Policy

- The majority of institutions lack official strategy around the use of AI but have or will be developing policies, primarily around academic integrity and instructional use.
- Some institutions are adapting existing policies to include the use of AI.
- Respondents identified empowering educators with new technologies as the top reason for adopting or considering AI.

Challenges and Benefits

- The primary challenge to using AI was lack of expertise among faculty and administrators, followed closely by lack of policies and guidelines and concerns about protecting academic integrity.
- Given the lack of incentives or training previously mentioned, there seems to be a disconnect between perceived challenges, like lack of expertise among faculty, and strategies – such as comprehensive professional development and training – to mitigate the challenges and support the practices.
- A majority of respondents identified both teaching critical digital skills and learner engagement as the top benefits to using AI to support instruction and learning. Interviews confirmed a need for a new, "digital literacy 2.0" – for both students and faculty – as well as an imperative to include industry in conversations and planning to prepare students for a workforce already using AI. But a new version of the "digital divide" may result from lack of access to training and skills acquisition around AI.

Overall, attitudes about the use of Artificial Intelligence to support instruction and learning range from optimism and excitement , to skepticism and even fear. A number of respondents expressed that they just don't know enough about the technologies to be able to predict their impact on the landscape of higher education. One respondent captured what seems to be a common sentiment: "It is the wild wild west. And we don't have any horses." And one interviewee argued that AI will upend the very nature of what we do: "The bigger question becomes: What is learning? What is a college education?"

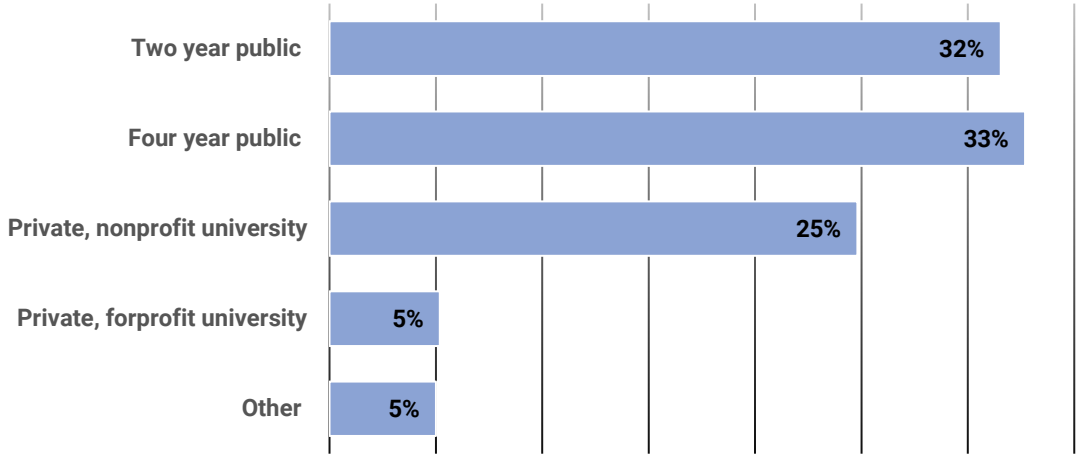
But many respondents suggested that, regardless, AI is here to stay in higher education – and beyond – and expressed a desire to harness its potential for good. One interviewee echoed a common current analogy, calling this "a printing press moment," and another argued, "AI is going to change the world. It will. It's not like these other technologies that came along. This is a game changer."

> "This is something that is evolving so rapidly, it's like trying to grab Jell-O…but it's going to penetrate so many aspects of not only our work, but society as well, that I don't think we can avoid it."
> *- John Opper, Executive Director, Distance Learning and Student Services, Florida Virtual Campus*

Institutional and Respondent Identities

The highest number of responses were from four-year public universities (33%) with two-year institutions a very close second (32%). Private, nonprofit universities constituted 25% of respondents and 5% were private, forprofit universities (figure 1).

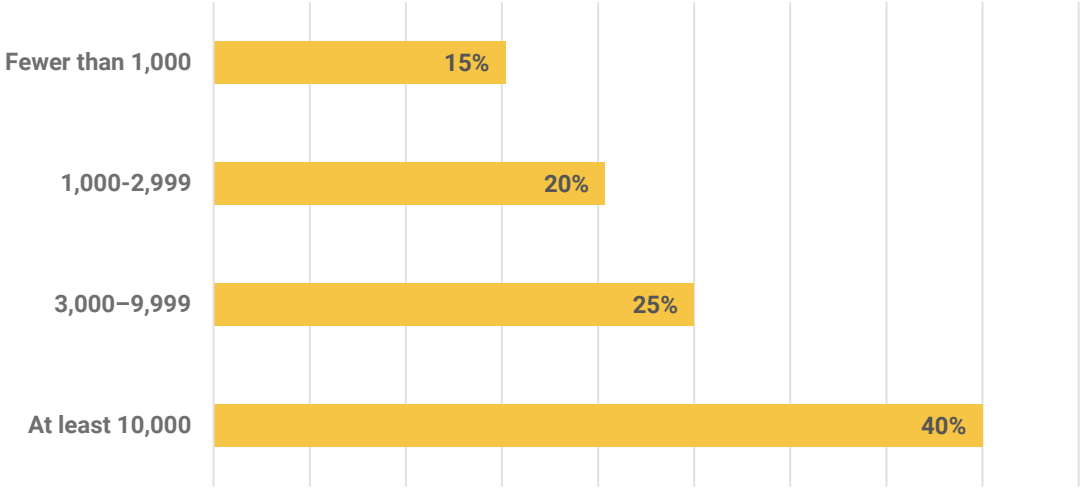
Figure 1: Institutional Type



The other 5% included system/consortia, a forprofit company, a nonprofit organization, seminary/theology schools, SHEEO, a Regional Compact, a bootcamp, a tribal college, and a two-year private institution.

40% of respondents' institutions had, in fall 2022, at least 10,000 total enrollments, 25% have 3,000-9,999, 20% have 1,000-2,999, and 15% have less than 1,000 (see figure 2).

Figure 2: Institutional Enrollments



Of the 520 respondents to the question, “What is your position at the institution?” the highest percentage serve as Chief Online Officer/Director of Distance Education (25%), with faculty respondents second (21%), Chief Academic/Instructional Officer/Provost third (17%), and Chief Information Officer/Director of Information Technology a distant fourth (2%). However, 40% wrote in a wide range of other titles, suggesting that the use of, and interest in, AI engages numerous offices and personnel across campuses and organizations. These include:

- Instructional/Learning Designers & Related Staff (n=54),
- Online/Distance Education Administrators (other) (n=42),
- Dean & Assistant/Associate Dean (n=23),
- Vice Provost or Associate/Assistant Provost (n=12),
- Center for Teaching & Learning/Teaching Effectiveness Administrators & Staff (n=8),
- Researcher/Data Scientist (n=6), and
- Institutional Research/Effectiveness Administrator (n=5).

There were also two each of Library Staff, Registrar, and Department Chair (interestingly, one interviewee identified a librarian as one of the primary AI champions on campus). Additionally, 53 respondents wrote in a variety of other titles at institutions of higher education, private companies, and nonprofit organizations.

Key Takeaways

A majority of survey respondents are at public institutions, both two-and-four-year, with at least 3,000 enrollments in fall 2022, and serve as Chief Online Officers/Directors of Distance Education, faculty members, or CAOs/Provosts. However, survey data and interviews revealed that engagement with AI can involve a wide range of campus personnel and stakeholders, including students, librarians, Presidents/Chancellors and even Boards of Trustees.

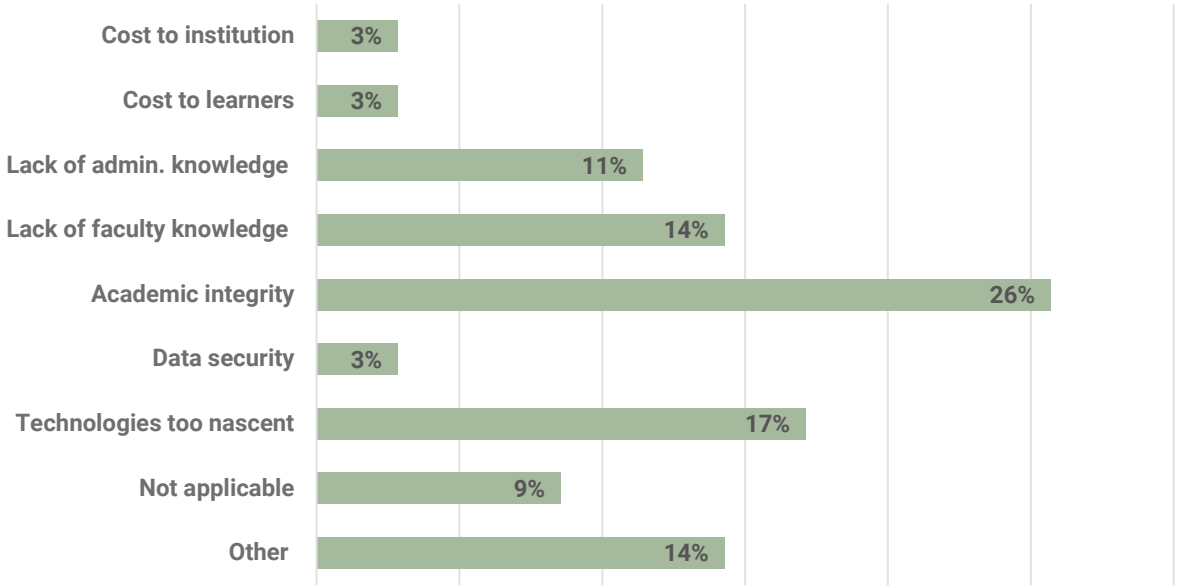
Utilization

We asked respondents to identify the stage of their institution in regards to the intentional and systematic use (or potential use) of AI to support instruction and learning. Nearly 6% of the 506 total respondents reported no interest in using AI to support instruction and learning. The institution type and size ranged from a small seminary to two- and four-year publics with over 10,000 students; however, 12 of the 28 respondents are at small, private nonprofit institutions, and an additional nine are at small public or private, for-profit institutions, for a total of 21 at small institutions of less than 2,900 enrollments in fall 2022 of the 28 who indicated no interest.

Breaking down the reasons for their lack of interest in using AI to support instruction and learning (figure 3), 26% indicated it was due to concerns about academic integrity, with 33% of those respondents at two-year public institutions and 11% at four-year publics. The same percentage responded that it was because of either faculty or administrator lack of knowledge of the technologies, with 60% of those indicating lack of faculty knowledge and 75% of those indicating lack of administrator knowledge at two-year public colleges.

Additionally, 17% of those who expressed a lack of interest in using AI to support instruction and learning responded that it was because the technologies are too nascent; of those, half are at private, nonprofit universities, with only one response each from two- and four-year public institutions.

Figure 3: Reasons Institution Opted Not to use AI



Those who selected “other” indicated a desire to select multiple – or all – of the options, and one respondent suggested that AI “hasn't yet demonstrated benefit to students.”

Regarding at what stage respondents’ institutions are in intentional and systematic use (or potential use) of AI to support instruction and learning, 20 (4%) of the 506 stated that their institution has already adopted and implemented AI for these purposes. Ten of those are large institutions (5 are four-year public, 4 are two-year public) with over 10,000 enrollments in fall 2022, with the rest ranging in size and institution type.

The majority of the 506 total respondents to this question (nearly 60%) stated that the use of AI to support instruction and learning at their institution is on the radar or scattered but there is no systemic action yet, and 22% of the total respondents said that they are in the planning stage. None claimed to have tried AI to support instruction and learning and then abandoned it.

> "As a faculty [member], you should be using ChatGPT because your students are using it! This is here. Right? We can either hide our head in the sand or do something about it. So, we are definitely doing something about it."
> *- Chief Information Officer, Public Research University*

For those who indicated any level of use, we asked when their institution first deployed AI to support instruction and learning. The majority (53%) did so less than one year ago; 19% one to two years ago, 20% three to five years ago, and only 8% did more than five years ago. Of that 8% (17 respondents), the majority (9) indicated enrollments of 10,000 or greater in fall 2020, with one large nonprofit higher education association also indicating use for five years or more.

One of those respondents elaborated: "Pockets within [our] university have been using AI and teaching AI literacy for over 10 years. The adoption questions are outdated if the thought is that something new is happening." But another respondent likely reflected the opinions of those who indicated that the technologies are too nascent: "I believe this survey is premature for our institution. Ask again in another 6 months."

We then drilled down into the specific ways responding institutions have deployed, planned, or considered deploying AI for instructional, learning, and academic student support, asking them to select all that apply.

With 342 total responses, the highest percentage of existing, planned, or considered use is for detecting AI-generated content/plagiarism (56%), with editing (52%) close behind. Content creation (44%), assessment & feedback (37%), accessibility (34%), and research (32%) were next.

Following is a breakdown of responses by institution type:

Total (N=342)	Two-year public	Four-year public	Private, nonprofit university	Private, for-profit university	Other
AI Use	n	n	n	n	n
Detecting AI-generated content/plagiarism n=192 (56%)	70	58	44	13	7
Editing n=177 (52%)	55	61	43	10	8
Content Creation n=149 (44%)	45	52	32	13	7
Assessment & feedback n=125 (37%)	44	41	26	8	6
Accessibility n=116 (34%)	42	39	26	4	5
Research n=110 (32%)	31	39	22	9	9
Virtual & augmented learning n=91 (27%)	29	33	23	3	3
Personalized/ adaptive learning n=89 (26%)	28	30	17	9	5
Tutoring/virtual assistance n=85 (25%)	27	31	16	7	4
Game-based learning n=72 (21%)	22	27	15	4	4
Data visualization n=57 (17%)	12	20	14	4	7
Collaboration n=55 (16%)	16	18	13	4	4
Content synthesis n=54 (16%)	13	25	9	4	3
Machine/predictive learning n=44 (13%)	12	17	9	3	3
Identity & security n=29 (8%)	13	7	4	3	2
Proctoring n=3 (.9%)	2	1			

Seven respondents indicated a number of other uses, such as disease diagnosis and management, marketing, tech support, and code generation.

We also asked in what disciplines AI is utilized; respondents could select all that apply. They indicated most frequently that it is used in Computer and Information Science (44%), English Literature (29%), Business Administration (25%), Education (23%), and Health Professions (22%).

One interviewee, who recently had spoken at a gathering of Chief Financial Officers, emphasized the need for training in AI for business graduates: "I brought up [AI], and I'd say the audience was absolutely in agreement that if they were paying the money to hire, not just an MBA, but a business school grad, an undergrad, who didn't know how to you use generative AI, that they would offer the job to somebody who did."

> "I recently saw the 2023 World Economic Forums Future of Jobs Report. And when they listed the skill sets that would be in high demand for AI, I'd say 8 or 9 out of the 10 were all skill sets that are generated from liberal arts degrees. Which is a pleasant change, you know, critical thinking, being able to think quickly on your own, creative thinking."
> *- Dr. Wally Boston, President Emeritus, American Public University System*

Others selected or wrote responses in a wide range of disciplines, including:

- Mathematics (19%),
- Career & Technical Fields (19%),
- Natural Sciences (17%),
- Engineering (14%),
- The Arts (14%),
- Psychology (13%),
- Linguistics/Language (12%),
- Social Sciences (12%),
- History/Government (10%),
- None (9%),
- I don't know (8%),
- Philosophy (6%),
- Economics (6%),
- Law (4%),
- Religion/Theology (.09%),
- Communications (.09%), and
- Geospatial Technologies, Agriculture/Horticulture, Aviation, Political Science (same number of responses each: one).

One respondent extolled harnessing AI to support creativity: "We have used AI to empower artists to be creative with technology and transcend what they would have otherwise been able to create. This has resulted in some truly profound pieces of software and experiences."

Two respondents (both at large, four-year public institutions) indicated that AI was utilized in "all disciplines."

Notably, interviewees argued for the importance of the liberal arts and humanities to educating and training students in ethical understanding and use of AI. Critical and creative thinking, analytical judgment, complex problem solving, and creativity and originality are core, crucial competencies that give learners the ability to truly harness and work effectively alongside AI. As one interviewee stated, “This is going to be a challenging time for the humanities but the scholars in this area need to be part of the discussion so that we continue the human race and are not ‘filtered’ from civilization.”

Key Takeaways

Nearly half of institutions not interested in using AI to support instruction and learning are private, nonprofit institutions with less than 2,999 enrollments. Academic integrity was the primary reason given, with many of those concerned about academic integrity coming from two-year public institutions. Lack of knowledge of the technologies on the part of faculty members or administrators followed close behind as reasons for having no interest in using AI to support instruction and learning.

Half of the small number (20) of institutions who stated that their institution has already adopted and implemented AI are institutions with over 10,000 enrollments. And for those institutions that had deployed, planned, or considered deploying AI, the highest number are doing so to detect AI-generated content or plagiarism, with editing close behind, and Computer Science being the most cited discipline for use. Two-year public colleges are leading in their use of AI to detect AI-generated content or plagiarism.

Additionally, the liberal arts in general – and Arts & Humanities specifically – may see a renaissance as critical and creative skills become crucial in ensuring responsible and ethical use of AI.

> “Universities . . . likely need more funding and focus on the humanities . . . in order to leverage generative AI's capabilities.”
> *- Marc Watkins, Instructor, University of Mississippi*

Support, Incentives, and Training

Some institutions clearly utilize multiple roles to support AI use among faculty and students on campus. Respondents reported that instructional designers/curriculum experts (54%) and distance/online education staff (53%) were the most common roles at their institution to support effective AI adoption and use among faculty and students, then faculty champions (44%) and faculty professional development staff (42%).

> "I think faculty champions are going to be crucial for advocating AI literacy."
> *- Marc Watkins, Instructor, University of Mississippi*

Information technology staff and institutional leaders and administrators followed fairly close behind, with each at 30%. 11% or fewer of respondents cited a dedicated AI Task Force or committee, student champions, student services, the accessibility office, or marketing department.

One respondent emphasized the range and importance of those supporting AI use, also indicating differing perspectives on that use: "I've chosen categories in which I know there are personnel engaged with monitoring and experimenting with AI. Some largely regret how AI is changing or will likely change education, some are more optimistic. But I would see them all as part of supporting effective engagement with AI for us." One interviewee emphasized the importance of engagement at the highest levels of administration; their institution has created an "AI Forum," led by a President of their institution, with membership including not only the presidents from the other universities in the system, but the Chancellor and board of trustees members as well. But one respondent offered an alternative perspective: "[i]t is premature at this time to consider anyone's role as an AI czar." This echoed some of the other respondents' reactions that the use of AI at their institutions and organizations is too nascent to determine appropriate support, leadership, and training.

We also asked what incentives their institution offers, if any, to encourage faculty to use AI, allowing them to select all that apply. Significantly, nearly a quarter (22%) do not encourage the use of AI at all; of those, 36% are two-year public colleges, an equal number (27% each) are four-year public universities and private, nonprofit universities, and 6% are private, for-profit universities (4% are other types). In terms of institutional size by enrollments, 22% have fewer than 1,000, 26% have 1,000-2,999, 21% have 3,000-9,999, and 31% have 10,000+.

Additionally, the overwhelming majority (75%) responded that they do not offer incentives to encourage faculty to use AI. Of those, 36% are at two-year public colleges, 32% at a four-year public institutions, 23% at private, nonprofit universities, and 4% at private, for-profit universities (5% indicated "other"). In terms of institutional size by enrollments, 14% have fewer than 1,000, 21% have 1,000-2,999, 28% have 3,000-9,999, and 37% have 10,000+.

But 17% did report offering the following types of incentives (in descending order of frequency of response):

- public acknowledgment or recognition when faculty use AI,
- stipends to encourage AI projects,
- reassigned time or release time for planning or collaboration on AI,
- certification or badge system tied to AI use, and
- embedding AI projects within faculty performance review and promotion, tenure, and reappointment processes/scholarship of teaching and learning.

Over half of respondents who offer public acknowledgment or recognition when faculty use AI are at institutions with over 10,000+ enrollments. Half of those who offer stipends are four-year public universities and a quarter are two-year publics; nearly 70% have 10,000+ enrollments. The majority of write-in responses suggested that they did not know, or it was too early to determine what incentives would be needed or effective.

We also asked about faculty development or training around AI, and similar to the previous question, the majority (although a smaller majority at 55%) reported no faculty development or training around AI. However, 157 respondents (45%) reported that they do, with informal awareness or discussion and resource sharing being the most frequently cited (n=75), followed closely by more formal webinars, workshops, and trainings (n=68). Other types of faculty development included:

- Communities of Practice, Interest Groups, and Committees (n=7),
- Summer Institute or Summit (n=4),
- White Paper (n=1), and
- AI Microcredential (n=1).

Nineteen of the write-in responses indicated that faculty development and training were currently in the planning phase.

Several interviewees emphasized the importance of professional development and "training the trainer," and one, an instructional designer, cautioned to avoid a "plug and play approach," warning that "this approach is the best way to make sure that we don't make any advancements with AI and higher education." But they added, "I feel very confident because I'm surrounded by brilliant educators who are in it for the long haul, who are willing to do the work and take the time to understand productive use cases for AI."

Key Takeaways

Instructional designers and curriculum experts and distance and online education staff were the most common roles at their institution to support effective AI adoption and use among faculty and students, but faculty champions and professional development staff play a large role as well.

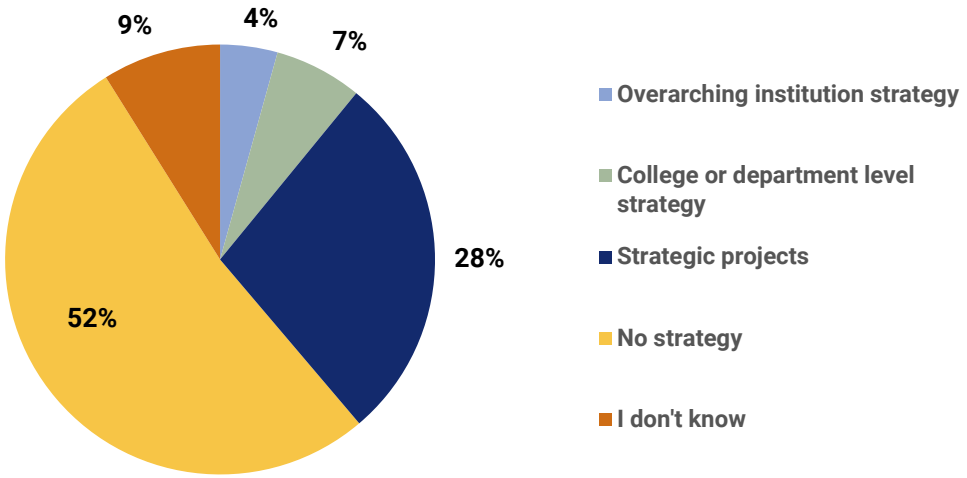
Although one of the primary challenges to using AI was lack of expertise among faculty, the overwhelming majority of institutions do not offer incentives to encourage faculty to use AI, and a majority also reported no faculty development or training around AI. But since respondents also identified empowering educators with new technologies as the top reason for adopting or considering AI, there seems to be a disconnect between perceived challenges and strategies and practices – such as comprehensive professional development and training – to mitigate the challenges and support the practices.

For those who do offer faculty development or training around AI, informal awareness and discussion and resource sharing was the most frequently offered, followed closely by more formal webinars, workshops, and trainings. And those who do encourage faculty to use AI offer a range of incentives, with public acknowledgment or recognition when faculty use AI and stipends for projects the most common. Large institutions of 10,000+ enrollments are more likely to offer incentives to encourage faculty to use AI.

Strategy, Planning, and Policy

When asked about the state of the existence of official strategies for AI adoption and implementation to support instruction and learning at their institution, the majority of respondents (52%) indicated having no official strategies, while others have strategic projects (28%) or strategy at the college or department level (7%). 9% reported not knowing.

Figure 4: State of Official Strategies for AI Adoption and Implementation



The 15 (4%) who reported having an overarching institutional strategy are at a range of institutional types and sizes, but the highest number (six) are at large, two- and four-year public institutions.

The top five reasons for adopting or considering AI were empowering educators with new technologies (64%), improved learner outcomes (60%), plagiarism detection (56%), teaching digital literacy skills (52%), and ability to respond to learners 24/7 (38%) (multiple responses allowed). Other reasons included:

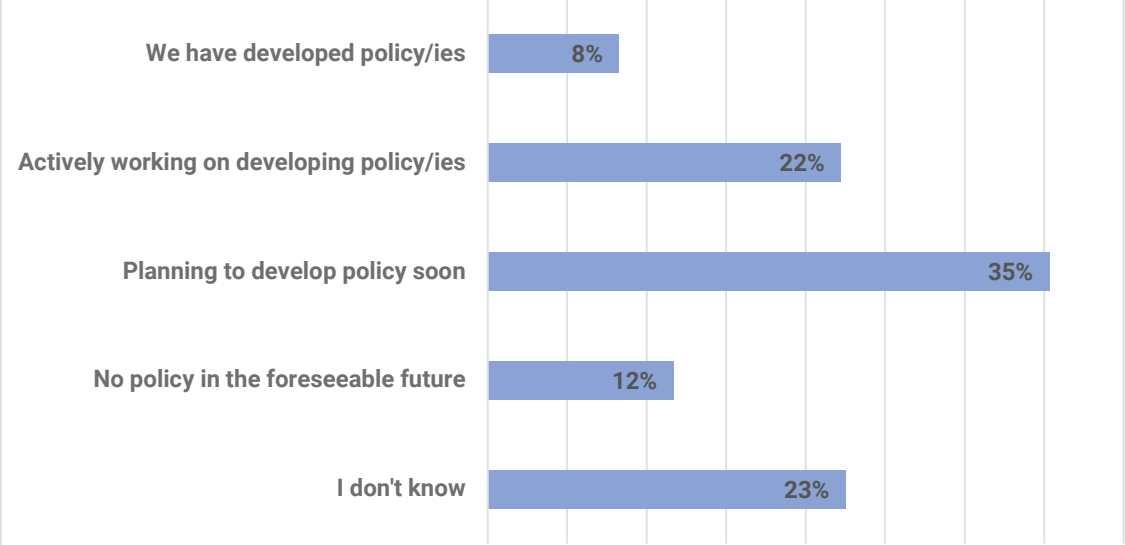
- harnessing greater amounts of data efficiently (28%),
- cost savings due to technology/ability to scale (25%),
- students demand it (12%), and
- faculty demand it (11%).

Others cited the need to assist faculty in overcoming their fears, as well as accepting that AI is here to stay, and they need to stay ahead of the curve (11 respondents wrote in some version of the latter).

"I don't see this AI stuff slowing down. I think it's going to continue to evolve. So…when you talk about having an institutional policy, I almost think you have to write it in pencil. Because I think it's going to have to revise and adapt as you go down the road."
- John Opper, Executive Director, Distance Learning and Student Services, Florida Virtual Campus

When asked if their institution implemented policies, or is planning to develop policies related to AI, a majority (65%) responded that they have or will be developing policies. Of those, only 8% reported that they *have* developed or implemented one or more policies, while 22% responded that they are actively working on developing one or more policies, and 35% plan to develop policy soon.

Figure 5: State of AI Policy Development



Of those who have implemented policy, most, unsurprisingly, are doing so around academic integrity (21%). Other responses include, in descending order of frequency (with each less than 9% of responses):

- data security,
- instructional use,
- intellectual property,
- privacy,
- promotion, tenure, and reappointment,
- syllabus statements, and
- accessibility.

Those who are *planning or developing* policy are doing so most around academic integrity (70%) and instructional use (51%). Those planning policies around other areas are doing so in higher percentages than those who have implemented them:

- data security (32%),
- intellectual property (27%),
- privacy (26%),
- promotion, tenure, and reappointment (2%), and
- accessibility (.04%).

One respondent indicated that their institution is developing policy related to "[e]quity and racism, avoiding systemically racist outcomes baked into most AI."

> "In [our policy], we remind the faculty that they are the experts in their subject area and that AI tools are to be used (if they chose) to support the competencies and objectives."
> *- Dr. Pamela Holt, Dean of Online Learning, Milwaukee Area Technical College*

But planning can be complicated due to the rapidly changing landscape of AI. As one respondent stated, "The rapidity with which these systems are evolving makes trying to track developments like drinking from a fire hose." One interviewee echoed this, suggesting that they are, by necessity, "building the plane as we fly it." Still, their campus is proceeding carefully and methodically in multiple phases, from education and training, to building a task force and holding "norming sessions," to engaging in research and developing best-practice case studies. Only then do they plan to begin exploring how it becomes a part of teaching and learning; e.g., in what disciplines is it about informing students about AI, and in which is it about actually using it in the classroom? This will inform how they "train the trainer."

Key Takeaways

The majority of institutions have no official strategies for AI adoption and implementation to support instruction and learning at their institution. But the highest number of those who do are at large, public two- and four-year institutions, and their top strategies were around empowering educators with new technologies, improved learner outcomes, plagiarism detection, and teaching digital literacy skills. Academic integrity is the primary area in which institutions have implemented or are planning or developing policy. But it seems clear that careful, consistent, and ongoing strategizing and policy development around a variety of aspects of AI are crucial to meet the challenges (see next section) of these rapidly evolving technologies.

Challenges and Benefits

We asked what the obstacles or challenges were, if any, that respondents' institutions have experienced in implementing AI, asking them to select all that apply and write in responses as well. The challenges reported by 342 respondents are wide ranging and clearly complex, with the top being lack of AI expertise among faculty (68%) and administrators (62%). But lack of policies and guidelines (56%) and concerns about protecting academic integrity (50%) were close behind. Other responses in descending order of frequency include:

- human resources needed to implement and sustain,
- steep learning curve for faculty implementation and use,
- generation of inaccurate information,
- technical infrastructure needed to implement and sustain,
- cost to institution,
- algorithmic biases,
- privacy,
- steep learning curve for learner implementation and use,
- cost to students,
- impersonal nature of interactions,
- too early to tell,
- distrust and skepticism,
- inertia and lack of awareness/will power,
- not implemented campus-wide and limited to individual faculty use,
- security,
- accessibility,
- ethical concerns, and
- needing to think beyond academic integrity.

Interestingly, 6% reported no obstacles or challenges.

One respondent elaborated on the challenge of distrust and skepticism: "I don't see captured here the visceral and urgent fear that faculty express when interacting with generative AI as they see them as potential tools to replace their work." Another echoed those concerns but then argued for AI's potential benefits: "I think there is a sense of general panic about AI being used to undermine education by being another venue for cheating or replacing teachers with technology. But the other side is that AI efficiencies may help educators address a growing need for 24/7 embedded student support in an age of limited resources." And one interviewee argued that higher education risks becoming more irrelevant if it fails to meet the challenges that AI presents, suggesting, "It's a new kind of digital divide. It's not about having the technology and having access to the AI, but it's [about] understanding it: when it is AI, when you can use it, when the facts are real, or whether it's hallucinating again."

> “I don't actually think AI is the boogie man. It's the way it's deployed. Deployment is key in education.”
> *- Trudi Radtke, Instructional Designer, Moorpark College*

Next, 345 respondents selected (with the option to select all that apply) or wrote in a range of options when asked what the benefits of AI adopting AI are, with the top five being teaching critical digital skills (65%), learner engagement (63%), improved student outcomes (55%), improved e-learning (52%), and increased efficiency and scale (48%).

Others included, again in descending order of frequency:

- personalized feedback and instruction,
- improved assessment practices,
- customized and timely feedback,
- enhanced and timely interventions,
- immersive learning, and
- harnessing big data.

The 9% of respondents that opted to write in answers suggested other benefits:

- research,
- academic responsibility,
- teaching in the arts and creativity,
- career preparation,
- accessibility, and
- peer review.

A respondent elaborated on a perceived benefit: “We are excited about leveraging the large amounts of institutional data as related to course delivery. We hope to capitalize on these resources to train an internal model of AI.” One interviewee emphasized both the challenges of, and benefits for, the use of AI to support assessment practices. He recognizes both the importance of authentic assessments to effective education, but also the need to scale for fiscal feasibility and sustainability in higher education. “If we can't do scale at the lower level, the fiscal model is going to crash. And so I'm not sure how we're going to do that. So this whole assessment issue is a *big* issue.” He suggests that we need to look at how AI can support “workable assessment models so that we can start talking about how we design instruction, and how we assess that, because we're going to have to do it on some scale.”

> "That's what it is for me. I think digital literacy isn't the question. I think it's the answer."
> *- Trudi Radtke, Instructional Designer, Moorpark College*

Significantly, as evidenced by its place as the top benefit of using AI, teaching digital skills crucial for students to thrive in the workplace was emphasized both by survey respondents and interviewees. One respondent revealed, "One of our greatest concerns is the change to the job market as a result of AI and how we as an educational institution can prepare students for the new job market. We also, as a result, need to re-examine the critical skills for our students in light of the changes this technology will bring about." And one interviewee suggested that higher education needs to initiate "very intensive conversations" with workforce, "because they're moving already. I'm afraid if we don't engage them, they're going to say, that's irrelevant."

> "We have to collaborate with workforce/industry – ask them to be part of education so that we are prepared for the future of work and what that looks like… We need to aggressively plan with our industry partners to map our current/future state of employment, determine the skills, behaviors and knowledge needed, and then plan the curriculum of the future."
> *- Dr. Pamela Holt, Dean of Online Learning, Milwaukee Area Technical College*

Key Takeaways

The top challenges to implementing AI were lack of AI expertise among faculty and administrators as well as lack of policies and guidelines. Additionally, interviews surfaced the need to reexamine assessment practices around AI – and that AI may be shifting the very definition of learning. The most frequently cited benefits of adopting AI were teaching critical digital skills and learner engagement, and some respondents and interviews expressed a very palpable excitement around the innovative ways that AI can support instruction and learning in these ways. Doing so, though, should involve conversations and collaborations with workforce and industry to support a new digital literacy and development of crucial skills.

Recommendations

Based on the findings of the survey, as well as interviews with six higher education administrators, staff, and faculty, we have developed several recommendations of best practices for the use of AI to support instruction and learning. We understand that each institution and organization has unique situations and, therefore, these recommendations may not apply to all. Nevertheless, we hope they will help institutions better plan for, develop, and implement AI policies to support student success.

> *Create clear, consistent, well-developed policies around the use of AI for faculty, students, and others not only to address academic integrity but to anticipate the range of potential instructional uses, intellectual property issues, and others relevant to your context, being sure to include students in policy development.*

It is crucial to be clear to students about expectations, with as much consistency across courses and programs as possible – at the very least at the department level – to avoid confusion and support ease of navigation and understanding for students. Engaging students in the development of policies can assist in this.

Depending on the institutional context, you may need to address not only academic integrity – the most common policies currently – but also such topics as accessibility, assessment, course design, data security, and privacy. Additionally, since the survey was administered, growing concerns around the use of AI and federal Regular and Substantive Interaction (RSI) requirements may warrant revised and new policies on RSI.

> *Provide a secure environment around the use of AI, addressing growing concerns regarding data privacy and AI, through policy, training, and practice.*

Best practices in data privacy and cybersecurity should be followed in AI use as with all data and technologies harnessed to support instruction and learning. This may include transparency and explainability, complying with federal regulations like FERPA, image and identity protection, data minimization (collecting only those data considered necessary), secure storage of data, and fairness and nondiscrimination.

> *Leverage AI as a powerful tool to support increased equity for learners, ensuring learner accessibility as well as adequate campus resources, and mitigate impediments to equity in the use of AI.*

We must ensure that the digital divide does not become an AI divide due to inequitable access to the technology and training in its use, and we need to mitigate challenges like algorithmic biases, working to help students identify and understand them.

> *Develop and teach digital literacy centered on the use of AI to better prepare learners for its utilization in a wide range of workforce sectors.*

The use of AI calls for a new form of digital literacy to not only support workforce preparation but also to ensure ethical and responsible use of AI. Concerns and considerations could include such topics as algorithmic biases in AI, the difference between human intelligence and artificial intelligence, and the like. Such digital literacy could mean a renaissance for the liberal arts as critical thinking and creativity unique to humans become crucial skills needed to effectively and ethically harness AI.

> *Review and update course and program curricula regularly to ensure alignment with current, relevant AI skills students will need to succeed in the workforce.*

This should include collaborating on an ongoing basis with relevant industry partners.

> *Allocate resources, where possible, to offer ongoing, diverse training, both formal and informal, on using AI to support instruction and learning in order to address the gap in knowledge of AI for faculty, staff, administrators, and students.*

Consider phased professional development from basics to more advanced, from what AI is, to what the tools are, to what it means for instructional and learning practices, how it should be used to prepare students for the workplace, etc. Also include training to help faculty develop assessments that acknowledge that AI is part of the learning process, ensuring measurement of that process, not just the product that could be completed via, for example, Generative AI. Training also should be in a wide range of formats to meet the needs of diverse learners.

> *Engage as many disciplines, departments, and offices internally across the institution and organization – and externally in industry – as possible to develop policy, train, and build a community of practice around AI.*

It is important to break down silos on campus – including between both academic and non-academic units – for responsible, effective, and holistic use of AI. This could include Academic and Student Affairs, the Academic Conduct or Integrity Office, Disability and Accessibility Services, Information Technology, Admissions, Student Government, Libraries, and others across the institution. External partners in the workforce and industry also should be consulted and engaged in this community of practice.

> *Offer low-risk, collaborative and exploratory opportunities for faculty, students, staff, and administrators to explore and discuss AI.*

This can include developing and showcasing best practices for planning and implementation of AI to support instruction and learning.

Conclusion

WCET joins other organizations seeking to better understand the use of AI at colleges and universities. In April, EDUCAUSE conducted a quick, one-day poll of its members; unlike our focus on broader AI, it asked specifically about Generative AI but about broader uses across campus, not just to support instruction and learning. The poll results suggest that "[a]ttitudes toward generative AI have improved over just the past few months, and these technologies are becoming more widely used in day-to-day institutional work." Respondents highlighted use cases around four common areas of work: Dreaming, Drudgery, Design, and Development. Like our first recommendation , the survey report identifies a need for clear policies and guidelines and urges institutions to "consider more sustainable plans for staffing," offering a "bottom line":

> *As more stakeholders are introduced to these technologies, the desire for and scale of adoption are likely to accelerate. Institutions must establish appropriate staffing and governance structures to support the use of these technologies and consider which particular use cases align with their needs and comfort levels.*

In February and March 2023, Tyton Partners conducted a national survey of students, instructors, and administrators in higher education, again focused on Generative AI. Responses surfaced two primary insights, reflecting some of the insights gleaned from our survey:

- The use of AI in higher education is beyond the point of no return.
- First-hand use changes beliefs about potential value of generative AI and the need for regulation.

The report recommends that users and potential users experiment and collaborate, concluding that "[o]nly once all parties have a sufficiently deep understanding of generative AI tools will we be able to engage in thoughtful discourse and experimentation around the future of this technology in education."

WCET recognizes that institutions often have limited resources to experiment and collaborate. However, as some of our survey respondents pointed out (and as is argued in the Tyton Partners report), the use of AI in higher education – and in other sectors and society in general – likely is not going anywhere and might be well on its way to ubiquity. As one administrator suggested:

"[AI] is maybe different in magnitude, but not kind, from the internet. The internet also made plagiarism easier, etc., but it brought great benefits for, say, connecting with students. All advances have drawbacks -- I think it's critical that higher education be thoughtful in our use to try to promote student benefit and avoid abuses."

WCET is committed to assisting its member institutions and all in higher education with navigating those drawbacks while taking full advantage of the advances. You can find existing posts, papers, and webinars on using AI to support instruction and learning on the Artificial Intelligence Resource page on the WCET website. Stay connected for upcoming initiatives and resources on supporting instruction and learning through AI.

Appendix: Survey Instrument

Survey results can be accessed here: https://wcet.wiche.edu/resources/reference-data-wcet-supporting-instruction-learning-through-artificial-intelligence-a-survey-of-institutional-practices-policies/

Note: Because the survey was web-based, the questions below do not reflect the web-based formatting or the skip logic.

1. Do you consent to participating in this survey?

- Agree
- Disagree

2. Is your institution

- a two-year public institution that primarily offers associate degrees?
- a four-year public that primarily offers baccalaureate and/or graduate degrees?
- a private, nonprofit university?
- a private, forprofit university?
- Other (please specify)

3. In fall 2022, what were your institution's total enrollments?

- Fewer than 1,000
- 1,000-2,999
- 3,000–9,999
- At least 10,000

4. What is your position at the institution? (select all that apply)

- Chief Academic/Instructional Officer/Provost
- Chief Online Officer/Director of Distance Education
- Chief Information Officer/Director of Information Technology Faculty
- Other (please specify)

5. Generally, where is your institution in an intentional and systematic use (or potential use) of AI to support instruction and learning? (see previous definition)

- No interest; we do not use AI to support instruction and learning
- Tried and abandoned
- On the radar or scattered use, but no systemic action yet In the planning stage
- Have already adopted and implemented
- I don't know

6. When did your institution first deploy AI to support instruction and learning?

- Less than 1 year ago
- 1 to 2 years ago
- 3 to 5 years ago
- More than three hours
- More than 5 years ago
- Not applicable

7. For what instructional, learning, and academic student support uses has your institution deployed, planned, or considered deploying AI? (select all that apply)

- Accessibility
- Assessment & feedback
- Collaboration
- Content creation (writing, art/graphics, videos – e.g. ChatGPT)
- Content synthesis
- Detecting use of AI-generated content/plagiarism
- Editing (e.g. Grammarly)
- Game-based learning
- Identity & security (e.g. facial recognition software)
- Personalized/adaptive learning
- Machine/predictive learning
- Research (e.g. ChatGPT, Elicit)
- Tutoring/virtual assistance
- Data visualization
- Virtual & augmented learning
- Other (please specify)

8. What is the state of the existence of official strategies for AI adoption and implementation to support instruction and learning at your institution?

- We have an overarching institution strategy.
- We do not have an overarching strategy, but do at the college or department level.
- We have strategic projects, but not strategy above that level.
- We have no strategy.
- I don't know.

9. What are the reasons for adopting or considering AI? (select all that apply)

- Improved learner outcomes
- Empowering educators with new technologies
- Cost savings due to technology/ability to scale
- Ability to respond to learners 24/7

- Teach important digital literacy skills
- Students demand it
- Plagiarism detection
- Harnessing greater amounts of data efficiently
- Faculty demand it
- Other (please specify)

10. What roles at your institution currently support effective AI adoption and use among faculty and students? (select all that apply)

- Institutional leaders/administrators
- Instructional designers and curriculum experts
- Faculty professional development staff
- Student champions (e.g. student government)
- Faculty champions
- Distance/online education staff
- Information Technology staff
- Dedicated AI Task force/committee
- None of the above, or not relevant
- Other (please specify)

11. In what disciplines is AI utilized at your institution? (select all that apply)

- Arts
- Business Administration
- Career & Technical Fields
- Computer and Information Science
- Economics
- Education
- English / Literature
- Engineering
- History / Government
- Law
- Linguistics / Language
- Mathematics
- Health Professions
- Natural Sciences
- Philosophy
- Psychology
- Social Sciences
- Other (please specify)

12. Which of the following incentives does your institution offer, if any, to encourage faculty to use AI? (select all that apply)

- Stipends to encourage AI projects
- Public acknowledgment or recognition when
- faculty use AI
- Reassigned time or release time for planning or
- collaboration on AI
- Embedding AI projects within faculty
- performance review and promotion, tenure, and
- reappointment processes
- Certification or badge system tied to AI use
- We do not offer incentives
- We do not encourage the use of AI
- Other (please specify)

13. Has your institution created and implemented any faculty development/training around AI?

- No
- Yes; please describe:

14. Has your institution implemented policies, or are planning to develop policies, related to AI?

- Yes, we have developed and implemented one or more policies.
- No, but we are actively working on developing one or more policies.
- No, but we are planning to develop policy soon.
- No, we will not be making a policy in the foreseeable future.
- I don't know.

15. What types of policies around AI is your institution planning or developing? (select all that apply)

- Academic integrity
- Data security
- Instructional use
- Intellectual property
- Privacy
- Promotion, tenure, and reappointment
- Not applicable
- Other (please specify)

16. What types of policies around AI has your institution implemented? (select all that apply)

- Academic integrity
- Data security
- Instructional use
- Intellectual property
- Privacy
- Promotion, tenure, and reappointment
- Not applicable
- Other (please specify)

17. If you have developed one or more policies, please describe and/or provide any links to information about the policy:

18. What are the obstacles or challenges, if any, that your institution has experienced in implementing AI? (select all that apply)

- Academic integrity
- Algorithmic biases
- Technical infrastructure needed to implement and sustain
- Human resources needed to implement and sustain
- Cost to institution
- Cost to students
- Lack of AI expertise among administrators
- Lack of AI expertise among faculty
- Privacy
- Lack of policies and guidelines
- Steep learning curve for learner implementation and use
- Steep learning curve for faculty implementation and use
- Generation of inaccurate information
- Impersonal nature of interactions
- We haven't experienced obstacles or challenges
- Other (please specify)

19. What are the benefits to adopting AI?

- Teaching critical digital skills
- Improved e-learning
- Learner engagement
- Improved student outcomes
- Increased efficiency and scale

- Personalized feedback and instruction
- Improved assessment practices
- Customized and timely feedback
- Enhanced and timely interventions
- Immersive learning
- Harnessing big data
- No benefits
- Other (please specify)

20. Why has your institution opted not to use AI at the organizational level to support instruction and learning? (select all that apply)

- Cost to institution
- Cost to learners
- Pilot was unsuccessful
- Lack of administrator knowledge of technologies
- Lack of faculty knowledge of technologies
- Lack of administrator interest
- Lack of faculty interest
- Concerns about academic integrity
- Concerns about ethics/biases
- Concerns about data security
- Concerns about equitable access
- Technologies too nascent
- Champions left/moved on to other initiatives
- Not applicable
- Other (please specify)

21. Describe any additional experiences, thoughts, or concerns that were not covered above.

References

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