2023

TIME FOR CLASS

BRIDGING STUDENT AND FACULTY PERSPECTIVES ON DIGITAL LEARNING

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EXECUTIVE SUMMARY

Digital learning has become a prominent feature of modern education, with the potential to provide personalized instruction through technology-enhanced tools, communication, design, and support services in online, hybrid, blended, and face-to-face learning environments. While digital learning tools can improve access and flexibility for underserved students, existing challenges still need to be addressed. This 2023 Time for Class study – the latest installment in the biggest and longest-running study monitoring digital learning in higher education – aimed to identify the differences between student and institutional stakeholder experiences and preferences to suggest ways institutions and solution providers can address these differences.

Tyton Partners conducted three large-scale surveys in Spring 2023, gathering insights from 2,048 students, 1,748 instructors, and 306 higher education administrators. Students shared that they face unique challenges and that their digital learning experiences and preferences differ from institutional stakeholder perceptions. Instructors also face unique challenges in implementing digital learning in their classrooms.

First, several differences in student and institutional stakeholder experiences and preferences are barriers to fulfilling the promise of digital learning. These include:

- Lack of reliable access to technology – Administrators prioritize access to digital learning, but many students lack access to stable internet, devices, and applications. This problem is particularly acute for students at community colleges and students of color but persists across all institutional sectors and student demographics. Moreover, inequitable access to technology persists although three years have passed since the COVID-19 pandemic pushed digital learning to become *the* required form of learning. **Instructors and product developers should operate under the working assumption that students are under-connected, using multiple devices and browsers, and need to download content for offline access.**

- Misalignment of instructor and faculty preferences – Faculty and students differ in their preferences for course modalities with students strongly preferring hybrid and digital options and instructors more likely to prefer face-to-face instruction. This preference carries through to course materials, where students strongly prefer digital materials and instructors are more likely to prefer print. **Institutions should consider student demand for hybrid courses and digital course materials as part of the digital learning strategy and the student experience needed to serve today's learners.**

- Barriers to accessing course materials – Students prefer access models to digital materials that ensure materials are available on the first day of class and that reduce price, and inclusive/equitable access models show promise in achieving this goal. Faculty are aware of student affordability challenges and leverage free materials more than administrators think. However, institutional stakeholders are not always aware of the impact of purchasing channels on students' likelihood to have materials on day one of class. **Institutions should prioritize investigating the benefits of non-traditional access models, such as Inclusive and Equitable Access, while critically evaluating choice limitations for instructors and cost savings for students.**

- Developing course-specific community – Students who enter courses without a set community, such as first-year and fully online students, are more likely to report using digital tools that increase course engagement, including collaboration tools and study aids. **Instructors should continue to make these resources available and encourage their use as research linking belonging and course outcomes is widely accepted.**[1,2]

We also spotlight three key instructor challenges to reveal opportunities for solution providers and institutions to better support faculty in effectively implementing digital teaching and learning tools:

- Tool selection is custom for each course – Instructors must choose effective core digital materials from a wide range of options, with a quarter of faculty using a combination of courseware, e-text, and open education resources across their teaching load. On top of this, instructors also supplement with digital tools to support assessment, proctoring, student collaboration, and other class functions. **Core digital materials providers must consider how to address different faculty use cases such as managing workload and inclusivity of content when designing tools as these use cases drive the adoption of courseware and OER, respectively.**

- AI is here to stay – Preventing student cheating, especially with the release of open-use generative AI writing tools, is a new top challenge for faculty. Faculty and administrators lag students in tool usage and thus cannot form effective policies to address the use of AI in courses. **The call to action for institutional stakeholders is clear: generative AI tools are here to stay; therefore, administrators and faculty must experiment with them to develop effective and informed policies and/or integration into teaching and learning.** Based on instructor usage of generative AI driving changes in teaching, particularly in assessment and student writing, assessment approaches and solutions that enable instructors to view student processes are positioned to win.

- Good teaching matters, but institutions need to support it – Students who report that their instructors use more evidence-based teaching practices also report more positive outcomes such as belonging and confidence that they will pass the course. Instructors who report that they work at **institutions that prioritize teaching and learning** (e.g., incentivize effective teaching, and provide training on course design) are more likely to engage in these practices and thereby improve student outcomes. **Institutions should assess their policies and professional learning to ensure that effective teaching and experimentation are supported.**

1. Tinto, V. (2003). Learning Better Together: The Impact of Learning Communities on Student Success. Higher Education Monograph Series.
2. Zumbrunn, S., McKim, C., Buhs, E., & Hawley, L. (2014). Support, belonging, motivation, and engagement in the college classroom: a mixed method study. *Instructional Science*, 42(5), 661–684. *https://doi.org/10.1007/s11251-014-9310-0*

STUDENT CHALLENGES

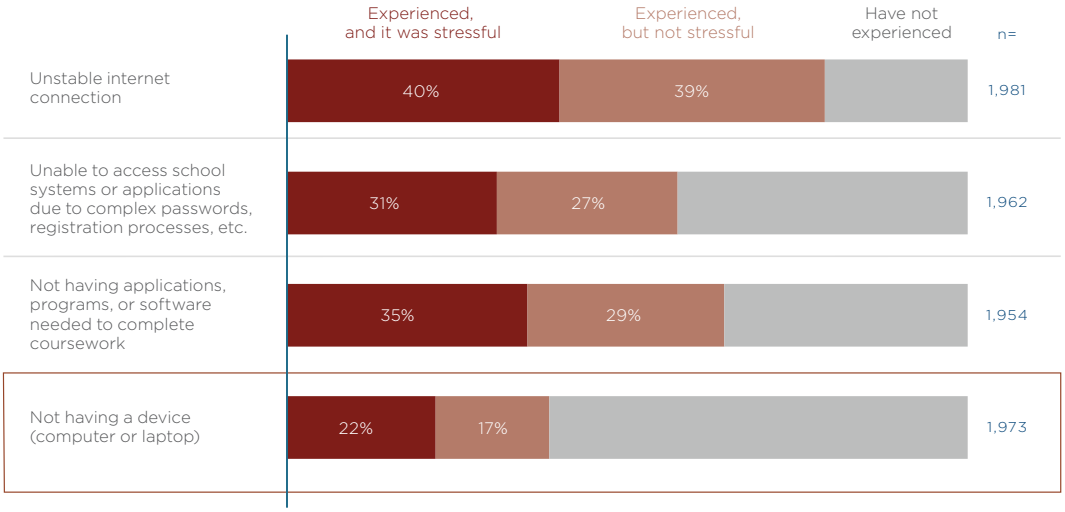
Equitable digital learning is designed to adapt to students' needs and promote active learning, with the potential to empower instructors with data and support better student outcomes. However, students point to four primary challenges that serve as barriers to fulfilling the promise of digital learning: lack of access to technology, misalignment between student and instructor preferences, barriers to accessing course materials, and difficulty with course and campus engagement.

ACCESS TO FOUNDATIONAL INFRASTRUCTURE

Higher education academic administrators identify "improving access and flexibility" as the top objective of digital learning at their institutions, ahead of "growing enrollment" and even "becoming more cost-effective." Moreover, 79% of administrators believe digital learning can drive academic success for all students including students from underserved racial groups and students with financial needs. However, this optimism does not reflect the reality for many students. As shown in *Figure 1A*, up to 40% of students have experienced stress due to limited access to computers/laptops and unstable internet connections. Students of color are 6 percentage points more likely to have experienced stress due to lack of access to devices, school systems, or the internet.

Figure 1A:

Digital learning infrastructure challenges for students



Notes: Survey question: "Please indicate the extent to which you've experienced the following technology issues:" Respondents who indicated "Don't know/NA" excluded

Sources: Time for Class survey 2023, Tyton Partners analysis

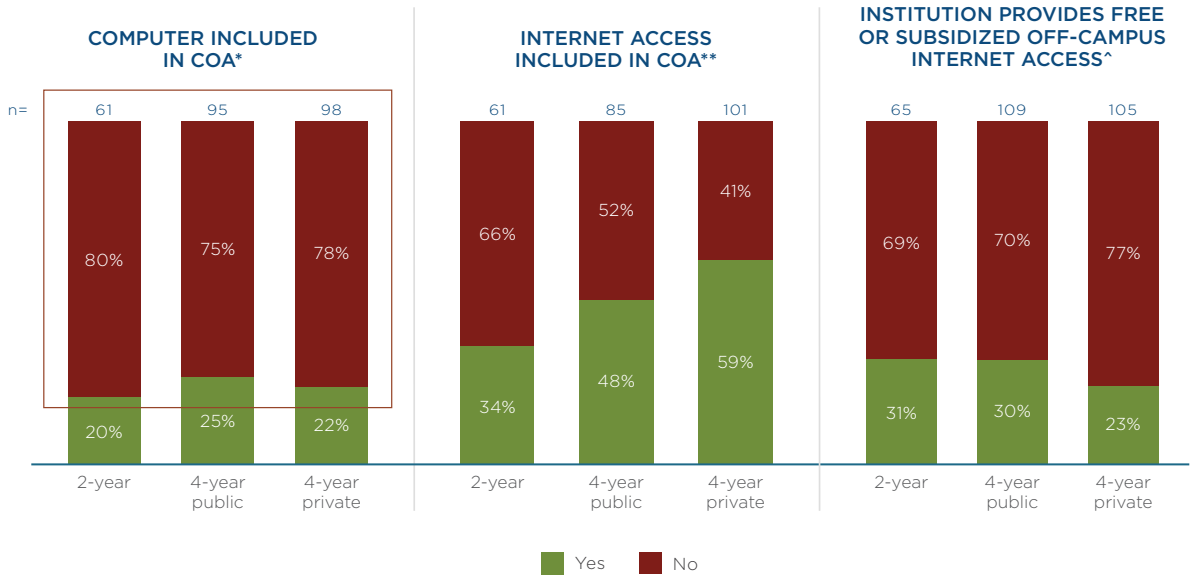
"I assume my students do not have reliable internet off-campus and try to design my syllabus around that fact."

– Shelby Frost, Clinical Associate Professor of Economics and the Director of the Young School of Policy Studies at Georgia State University

Institutions can do more to include the costs of devices and the internet in the definition of Cost of Attendance (COA). By including these line items in COA, students can apply for need-based federal student aid programs such as Pell Grants, Federal Work Study, Direct Subsidized Loans, and Federal Supplemental Educational Opportunity Grants to help cover internet and device costs[3]. *Figure 1B* shows that most instructors report that their institution does not include the cost of computers in COA.

Figure 1B:

Digital learning support included in Cost of Attendance (COA)[4]



*Notes: Survey questions: *"Does your institution's cost of attendance (COA) include a line item for laptop or other computing device?" **"Is internet access included in your institution's formal cost of attendance (COA)?" ^"My institution provides free or subsidized off-campus internet access." Questions were only asked of administrators who indicated knowledge of the institution's COA policies.*

Sources: Drive to Degree 2023, Tyton Partners analysis

Device access beyond mobile is important, as many core digital course materials are not optimized for mobile device use and are better experienced on a computer or laptop. If COA is comprehensive, educating students about the line items related to devices and the internet, and how different grants and loans apply or do not apply to them can be another way that institutions empower students and increase access.

Institutions can also consider offering or covering the cost of loaner laptops and hotspots that can help under-connected students complete coursework in multiple locations including campus, home, and/or their workplace[5,6]. Without federal COVID-19 relief funds to alleviate under-connectedness, institutions must proactively seek new funding and resources to sustain these efforts. Instructors are and should continue to be mindful of the likelihood of students being under-connected and when possible, work to create asynchronous elements into courses. Finally, policy-makers should ensure that aid policies and funding support institutional efforts to provide devices and bandwidth to under-connected students.

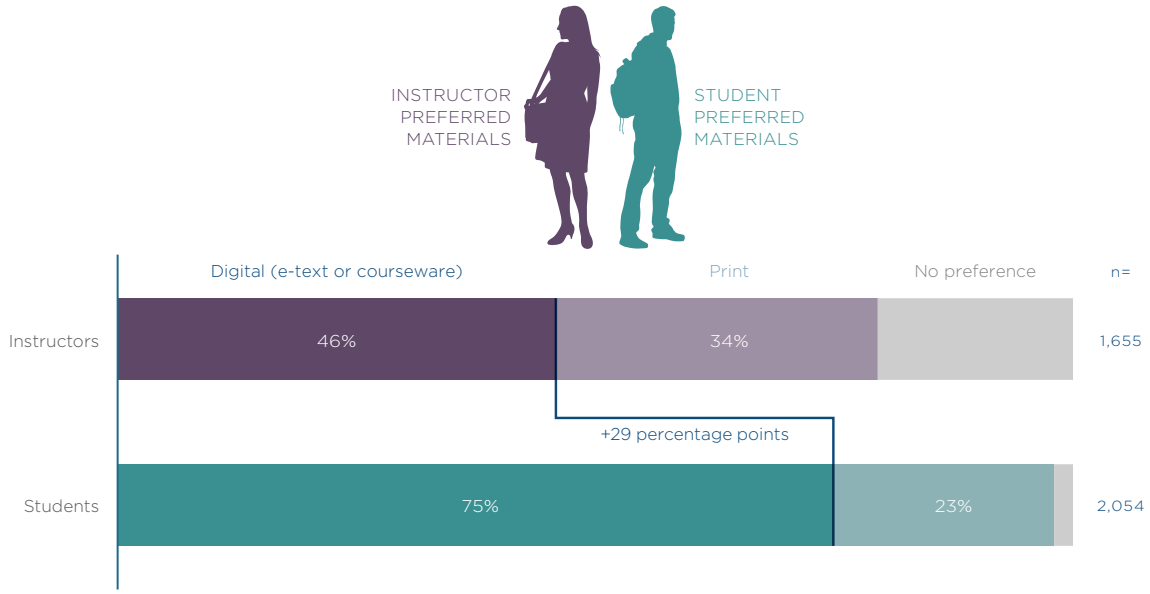
3. *https://studentaid.gov/complete-aid-process/how-calculated*
4. Shaw, C., Bharadwaj, P., Condon, K., Rich, J., & Bryant, G. (2023, July). Driving Toward a Degree – 2023. Tyton Partners.
5. Brooks, D.C., Gierdowski, D. (2021, April 5). Student Experiences with Technology in the Pandemic. EDUCAUSE.
6. Fox, K., Vignare, K., Yuan, L., Tesene, M., Beltran, K., Schweizer, H., Brokos, M & Seaborn, R. (2021, December 14). Strategies for Implementing Digital Learning Infrastructure to Support Equitable Outcomes: A Case-based Guidebook for Institutional Leaders. Every Learner Everywhere.

STUDENT COURSE PREFERENCES ARE AT ODDS WITH INSTRUCTOR PREFERENCES

Despite these access challenges, students still exhibit a preference for digital materials and hybrid course modalities that do not align with faculty preferences. While most faculty prefer print course materials (34%), most students do not (23%) and instead prefer digital course materials formats (37% courseware and 38% e-text), as seen in *Figure 2*.

Figure 2:

Student and instructor preference for course materials



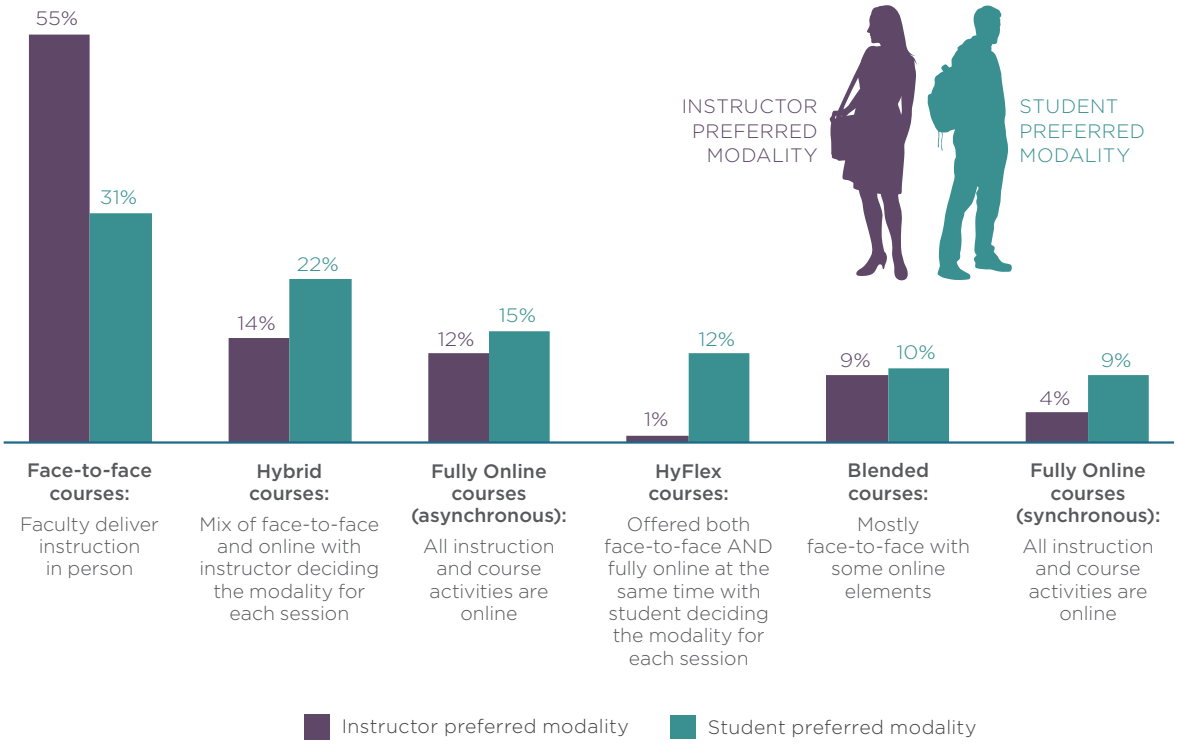
Notes: Instructor survey question: "In general, I prefer using _____ as course materials"; Student survey question: "If I had to choose just one way, in general, I prefer using _____ as course materials."

Sources: Time for Class surveys 2023, Tyton Partners analysis

Students exhibit a strong preference for hybrid, blended, and online modalities over face-to-face. As shown in *Figure 3*, over half of instructors prefer teaching face-to-face, but only a third of students prefer face-to-face courses. The remaining 70% of students prefer digital elements to course modality, with the top choice being hybrid courses (22%).

Figure 3:

Student and instructor preference for course modality



Notes: 5% of instructor indicated they have no preference of modality. Instructor survey question: "In general, I prefer teaching courses..." Instructor n=1,748; Student survey question: "If I had to choose just one way, in general, I prefer taking courses_____." Student n=2,056

Sources: Time for Class surveys 2023, Tyton Partners analysis

"I prefer hybrid classes as I think human interaction is a factor in a quality education. A welcome refresh to the monotony of an [online] asynchronous course, [which is] nothing but words and screens."

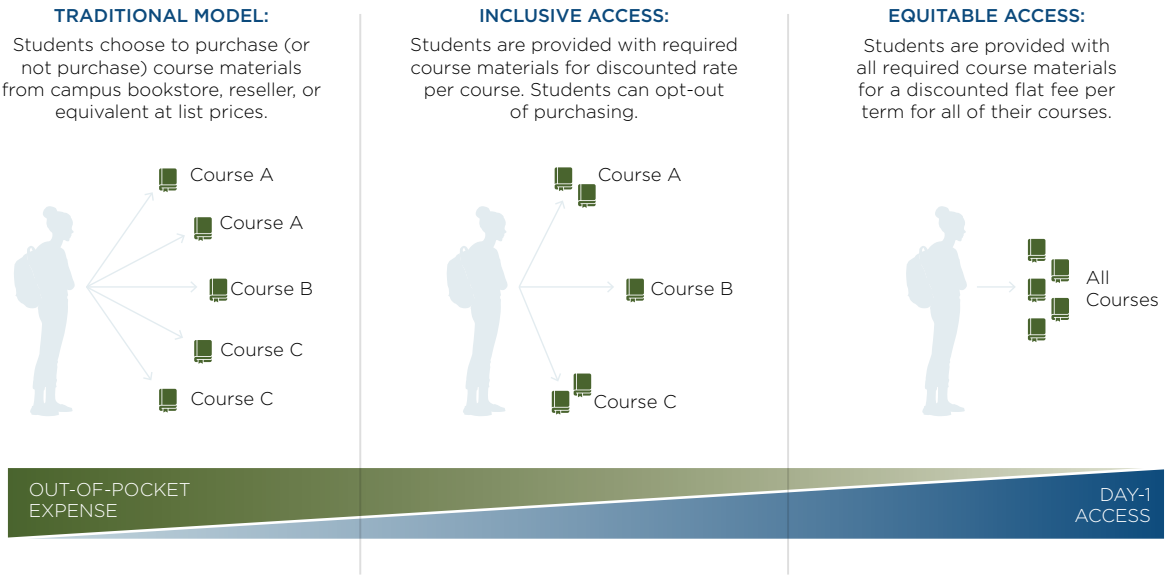
– Student at a four-year, public college when asked about preferred course modality

ACCESS TO DIGITAL COURSE MATERIALS

Faculty have proximity to the challenges that students are experiencing in their courses. Affordability and ease of use are among their top considerations when choosing course materials, and 41% of faculty value mechanisms to ensure equitable student access to technology and tools as an element of successful digital learning implementation (compared to only 22% of administrators). 34% of faculty at two-year institutions report challenges with managing student access or cost to instructional materials compared to 27% at four-year institutions, highlighting the disparity in access to basic materials at two-year institutions. They also report that students are more likely to have access to course materials on the first day of class when they use purchasing channels other than the traditional bookstore such as Inclusive Access and Equitable Access. Inclusive Access allows students to purchase all required course materials for a discounted flat fee per course, and Equitable Access allows students to purchase course materials for a discounted flat fee per term for all their courses (see *Figure 4*).

Figure 4:

Course materials purchasing channels[7]

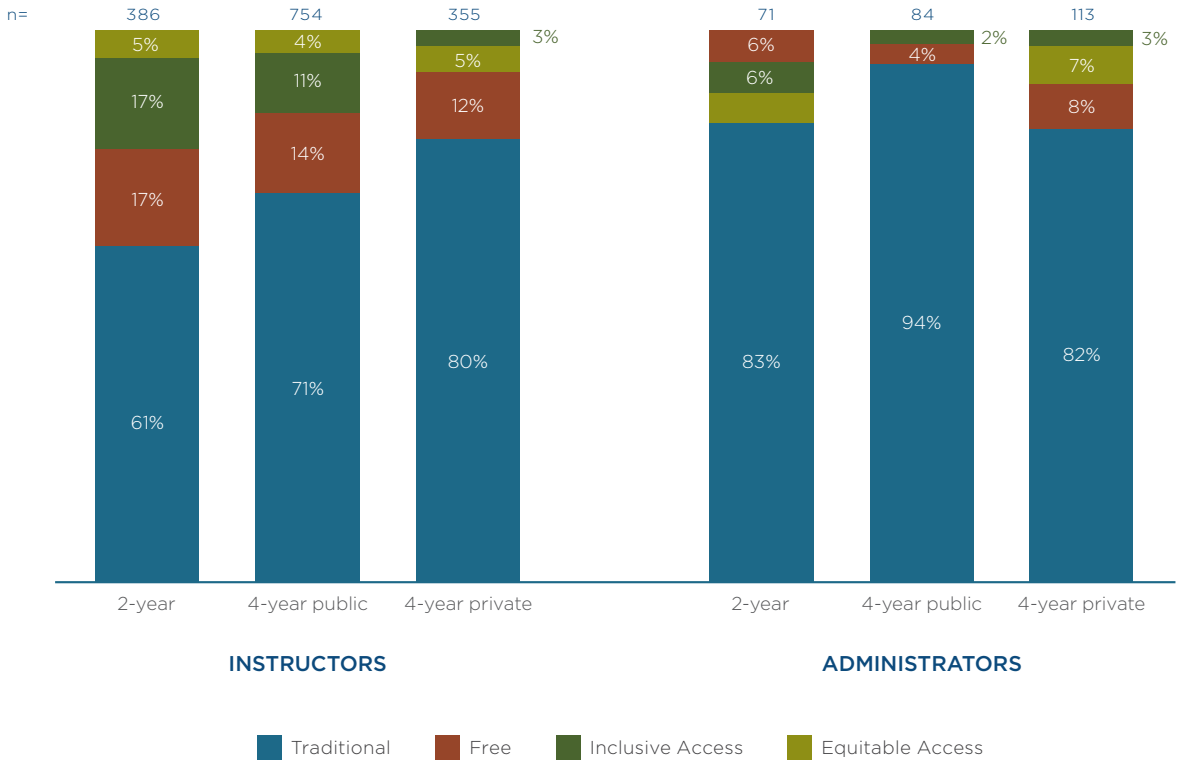


7. Flaherty, C. (2023, May 3). Survey: Costs of course materials a top college student concern. Inside Higher Ed | Higher Education News, Events and Jobs. *https://www.insidehighered.com/news/student-success/academic-life/2023/05/03/new-course-materials-models-who-benefits*

The traditional course materials purchasing model is the one that most faculty are familiar with and report using at their institutions. However, faculty report increased adoption of purchasing methods and channels designed to reduce student costs compared to administrator perception. In fact, 17% of faculty at two-year institutions report that they provide their students with course materials for free, and 22% report primarily using Inclusive or Equitable access purchasing channels, as shown in *Figure 5*.

Figure 5:

Primary course material access model by sector according to instructors and administrators



Notes: Survey questions:" What is the primary course material access model used in your course?"; "What is the primary course material access model used by students at your institution?"

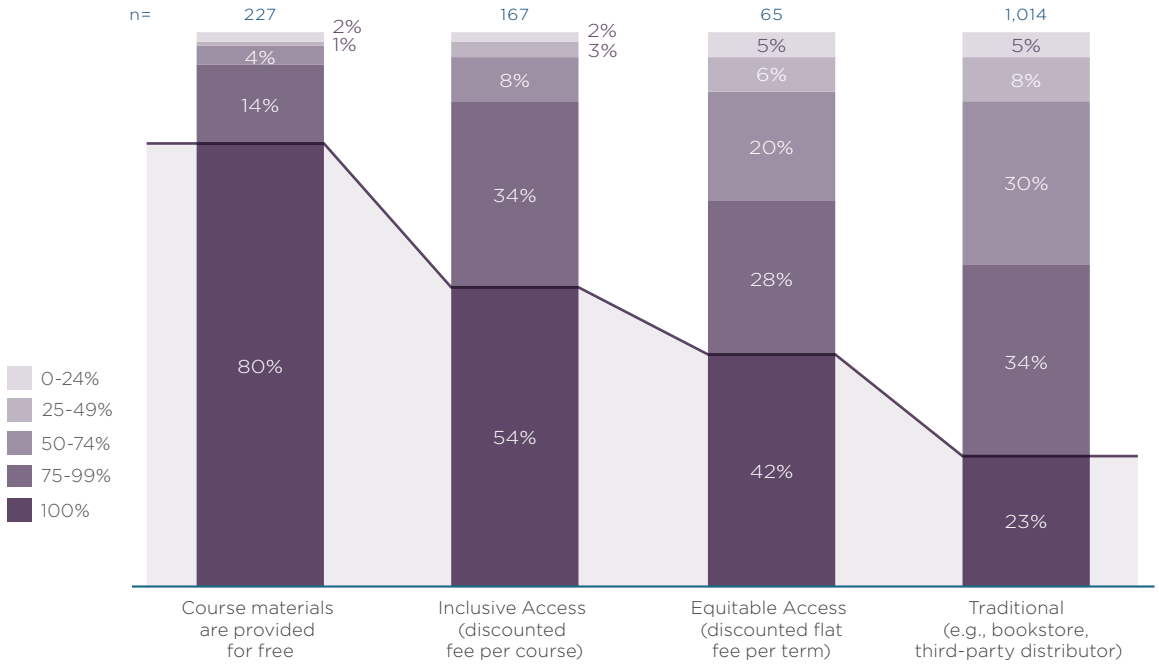
Sources: Time for Class surveys 2023, Tyton Partners analysis

Students also indicate a preference for acquiring digital course materials in ways that maximize cost savings including Inclusive Access (23%), borrowing from the library (22%), and Equitable Access (21%). Only 8% of students indicated that they would prefer to purchase new digital materials, and 16% of students said the same for print materials.

Faculty recognize these preferences, reporting that affordability and ease of use are their top considerations when choosing course materials. Most importantly, faculty using Inclusive and Equitable Access models are more likely to report that the majority of their students have access to materials on day 1 of class compared to the traditional bookstore model (see *Figure 6*).

Figure 6:

Percent of students having access to course materials on first day of class by primary access model, according to instructors



Notes: Survey questions: "What percent of students have access to materials on day one of class?"; "What is the primary course material access model used in your course?" Instructor n=1733

Sources: Time for Class surveys 2023, Tyton Partners analysis

Student access benefits notwithstanding, 30-40% of academic administrators and faculty do not know how their institution plans to use IA or EA models in the future. While the majority of faculty are largely neutral or unaware of the benefits or drawbacks of IA and EA models, one-third reflect optimism about its affordability and access benefits to students, and equal portions reflect concerns over limitations on choice and concern about advantages to major publishers.

Though IA and EA are affordable and increase student access, faculty worry about their limitations on instructional materials choices and their preference for major publishers (see *Table 1*).

Table 1:

Pros and cons of purchasing methods

	PROS	CONS
Traditional bookstore model/ status quo	• Students can keep materials for later reference, lend, borrow, or sell to/from other students • Students can choose where, how, when to purchase	• Students face high materials prices that are not discounted • Students face access/availability barriers to materials
Inclusive/ Equitable Access	• More students have access to course materials on Day 1 of class • Students pay lower prices on course materials per unit	• Students are limited in their choice(s) of, where, how and when to purchase • Instructors fear preference for major publishers who have volume to support IA/EA • If students opt out of the IA or EA program, they must still procure the chosen required materials, the cost of which becomes unknown and may be higher or lower
Free materials (including OER)	• Student affordability issues are directly addressed • Students are able to refer back to materials in foundational courses as what is available and free on Day 1 remains free and available throughout and after the course	• Institutions must make financial investments to set up an OER library[8] • Institutions must make personnel investments in course coordinators and other leadership to ensure materials are vetted and maintained long term

Course materials distributors and institutions must work together to raise awareness of the flexible options available with these purchasing channels if we are to realize the access and affordability benefits to students at scale.

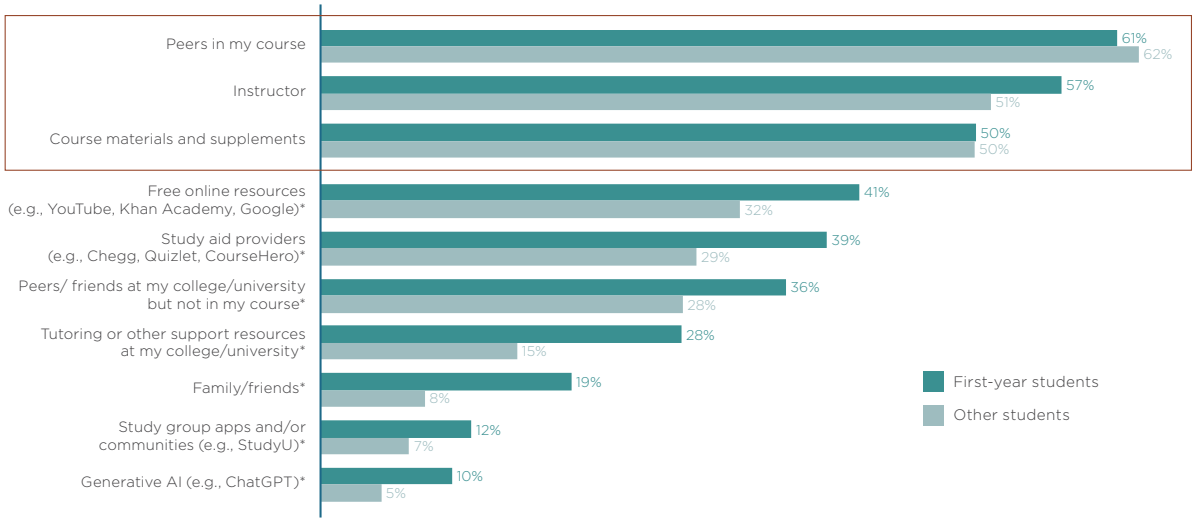
8. Eremionkhale, A. E., Eveland, M., Frost, S., & Swarthout, J. T. (2022). Online interactive pedagogical tools for the principles of microeconomics curriculum. *Eastern Economic Journal*, 49(1), 113–127. *https://doi.org/10.1057/s41302-022-00230-1*

CONTEXT AND COMMUNITY ARE KEY FOR COURSE SUPPORT

Access to course materials and supporting technology are necessary but insufficient alone for student academic success. It is important to understand where students prefer to turn for help when facing challenges in their coursework. Our research shows that students prefer to turn to sources with course contexts, such as the course's instructors, peers, and course materials (see *Figure 7*).

Figure 7:

Top resources students use for help in courses



*Notes: Survey question: "When you are struggling with a concept in your course, where do you prefer to turn for help?", First-year student n=307, all other student n=1,749, *Statistically significant difference, p<.05*

Sources: Time for Class 2023 Student Survey, Tyton Partners analysis

First-year students make use of more resources and tools for help in their courses in general, as seen by the higher usage rates across almost all categories in *Figure 7*. Additionally, students who enter courses without a set community, such as first-year and fully online students, are more likely to report using tools that increase interaction with peers such as collaboration tools and study aids. This is corroborated by research[9] that classroom contextual characteristics influence student outcomes and student belonging plays a role in college student motivation and success.

Students are seeking out support from both institutionally affiliated (e.g., peers, instructors, tutoring support) and non-institutionally affiliated but still trusted providers (e.g., their course material providers, free online resources, and study aid providers) to provide academic support and assistance at points of need. As institutions consider how to meet students' needs in real-time, it is important to acknowledge that they are offered and seek assistance from a range of sources. We expect to see generative AI continue to increase in use as a tool to provide student support at scale, and institutions and providers should consider how to integrate community and technology to best support their students at these critical points of challenge.

9. Zumbrunn, S., McKim, C., Buhs, E., & Hawley, L. (2014). Support, belonging, motivation, and engagement in the college classroom: a mixed method study. *Instructional Science*, 42(5), 661–684. *https://doi.org/10.1007/s11251-014-9310-0*

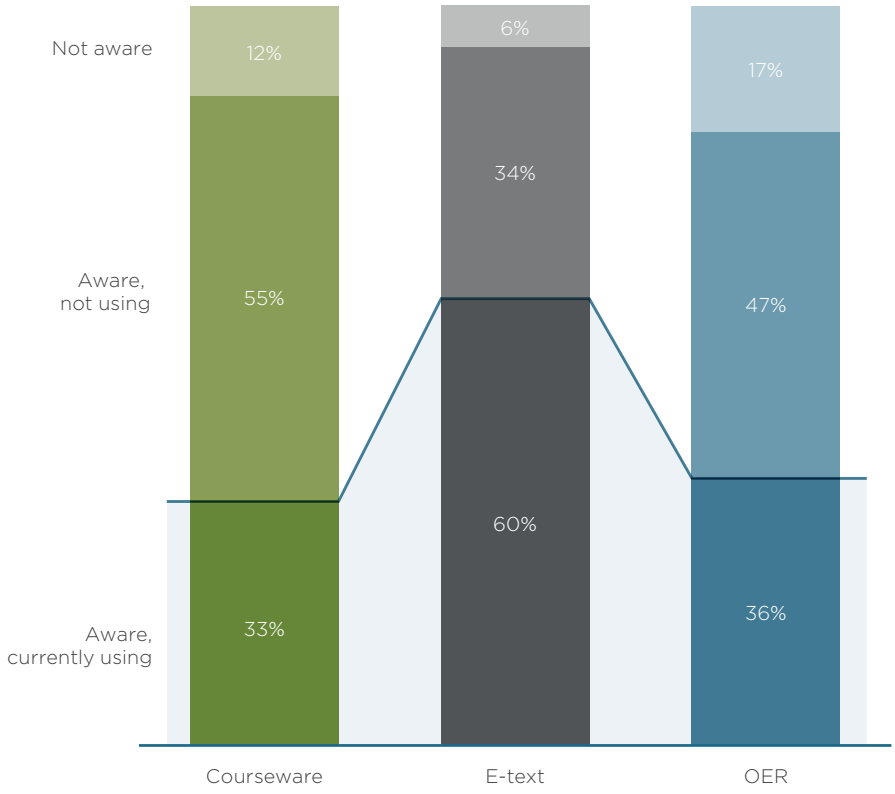
INSTRUCTOR CHALLENGES

TOOL SELECTION

90% of instructors report using core digital materials of some form in their courses, whether that be courseware, e-text, or OER. Faculty face a unique set of challenges in implementing digital learning in the classroom, one of which is selecting the appropriate digital course material from numerous options for each course they teach. In terms of core course materials, instructors in our survey indicated higher e-text adoption (60%) and lower courseware and OER adoption (roughly 33%), as shown in *Figure 8*.

Figure 8:

Instructor use of core instructional digital materials



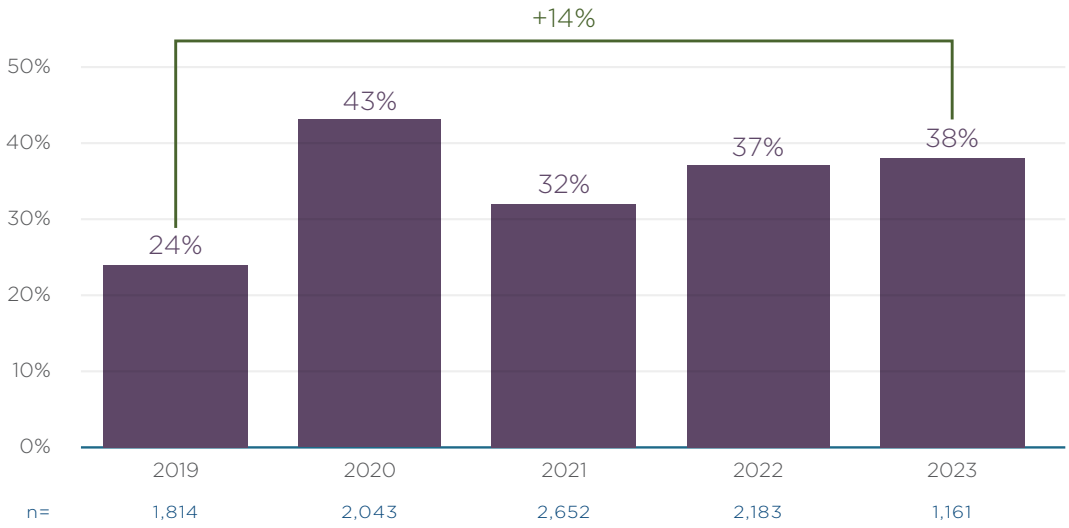
Notes: Survey questions: "Please describe your level of awareness with and usage of the following: - Courseware, E-text, OER = Aware and currently use in my courses"; instructor n=1,748

Sources: Time for Class survey 2023, Tyton Partners analysis

Courseware is used at higher rates in introductory level courses. Time for Class research from prior years shows courseware adoption among introductory course instructors has increased 14 percentage points over pre-pandemic levels (see *Figure 9*). In 2020, during the pandemic, the adoption of courseware, along with other digital tools spiked, but has returned to a more "normal" rate of adoption.

Figure 9:

Courseware adoption among introductory course instructors 2019-2023



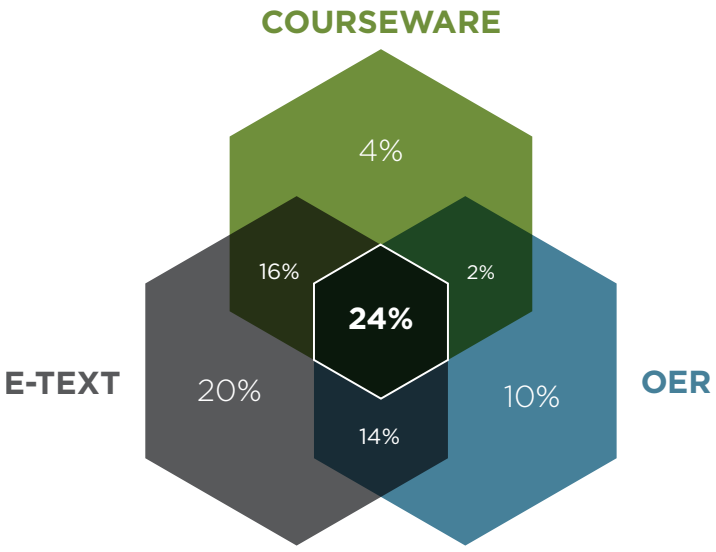
Notes: Survey questions: 2019 and 2020 "Please describe your level of awareness with the following: Courseware," 2021-2023 question: "Please describe your level of awareness with and usage of the following: Courseware"

Sources: Time for Class 2019, 2020, 2021, 2022 and 2023 Tyton Partners analysis

However, instructors also reported rarely using only one digital tool or core course material across their classes. In fact, about a quarter of faculty use all three types of core digital course materials (e-text, courseware, and OER) across their courses, indicating that faculty "mixing and matching" digital materials is common (see *Figure 10*).

Figure 10:

Instructor cross-usage of core digital materials



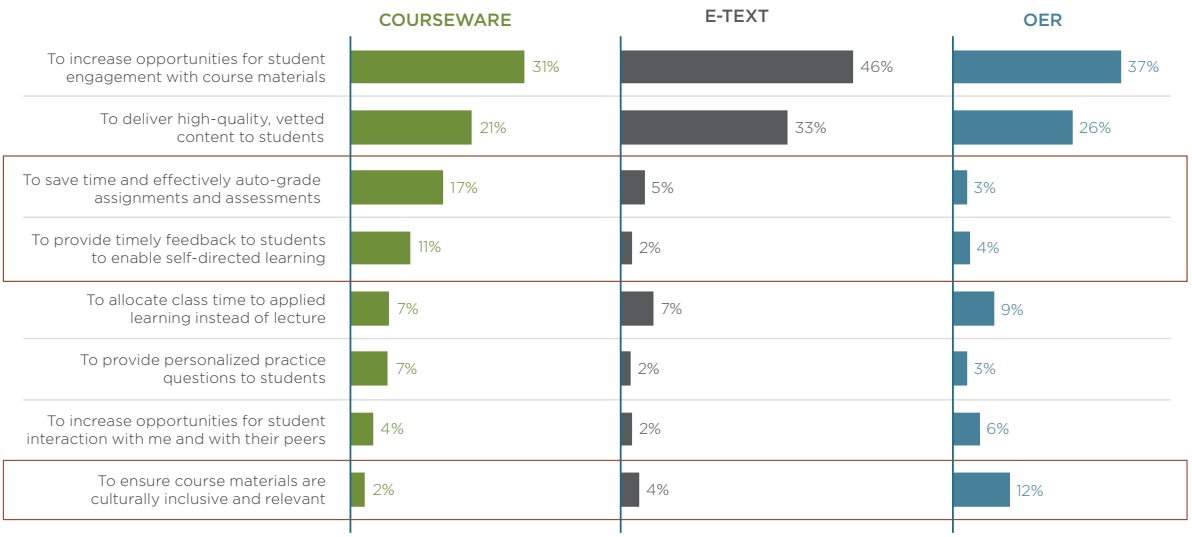
Notes: Survey question: "Survey question: "Please describe your level of awareness with and usage of the following: - Courseware, E-text, OER = Aware and currently use in my courses"; Instructor n=1,748

Sources: Time for Class survey 2023, Tyton Partners analysis

Faculty use these different materials for different purposes. Though all digital materials are often used to bolster student engagement with the course and enhance the delivery of high-quality content, secondary drivers of adoption vary. For courseware, they include streamlined grading and for feedback, and for inclusivity purposes, they more often use OER (see *Figure 11*).

Figure 11:

Instructors' primary use for course materials types



Notes: Survey question: "What is your primary use for [courseware / e-text / OER] in this course?", Courseware instructor n = 533, e-text instructor n = 873, OER instructor n = 568

Sources: Time for Class survey 2023, Tyton Partners analysis

The digital course materials and tools space is diversified in categories and players (see *Figure 12*).

Figure 12:

Digital learning solutions landscape (Illustrative players, not comprehensive)

Note: Top Hat acquired Aktiv Learning in December 2022

Are you using a tool or does your organization supply a tool to the market that is not depicted? Please send us a note at timeforclass@tytonpartners.com to let us know.

However, the recent release of open-use generative AI tools has disrupted both the use of core course materials and supplementary learning tools[10], and we are seeing these categories evolve as incumbents and new players incorporate this tool into platforms and use cases to support teaching and learning.

GENERATIVE AI WRITING TOOLS

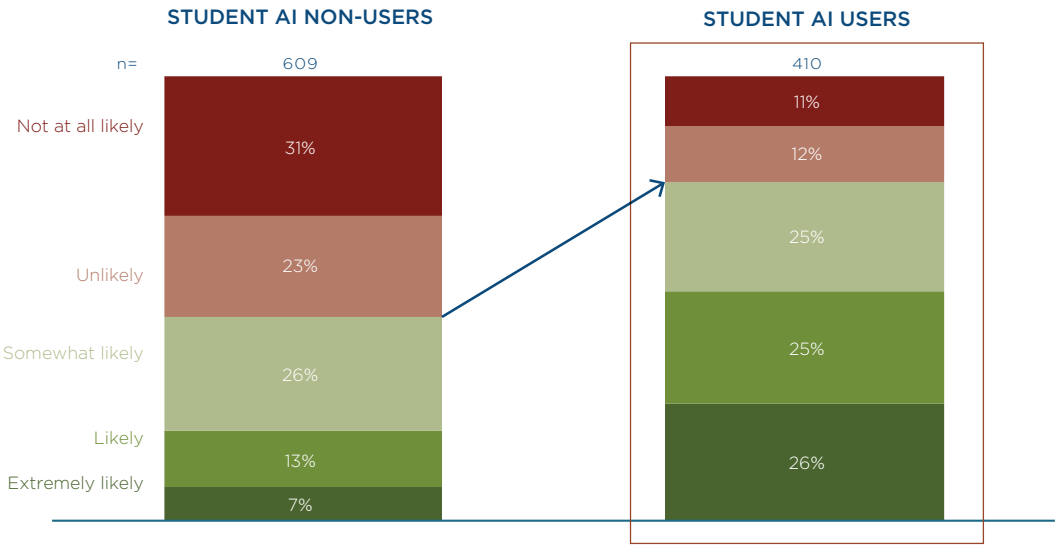
While concerns over academic integrity have been present in past years, the release of publicly accessible generative AI tools like OpenAI's ChatGPT has brought the issue front and center. "Preventing student cheating" jumped to the top instructional challenge reported by instructors in 2023, up from the 10th in 2022. Despite this concern, institutions have been slow to respond with changes to policy: only 3% of institutions have developed a formal policy regarding the use of AI tools, and most (58%) indicated they will begin to develop one "soon."

10. Chegg. (2023, February 6). Chegg Q-4 2022 Investor Presentation. Chegg Investor Relations. *https://s21.q4cdn.com/596622263/files/doc_financials/2022/q4/Press-Release-Q4_22.pdf*

Early student data makes it clear that usage of these tools will persist, regardless of policy. Specifically, 51% of students will continue to use generative AI tools even if their instructors or institutions prohibit it. For the 27% of students that are currently using generative AI tools, that number jumps to 69%, demonstrating the value students are gaining from these tools (see *Figure 13*).

Figure 13:

Student likelihood to use AI writing tools even if prohibited, responses as of March 2023



Notes: Survey question: "If your instructor or institution prohibits the use of generative AI writing tools, how likely are you to still use something like ChatGPT?" ~5% of students indicated "Don't know" across segments.

Sources: Time for Class survey 2023, Tyton Partners analysis

Considering that our research also found that close to 80% of institutions and over 50% of individual courses have writing requirements to graduate, identifying a path forward is crucial.

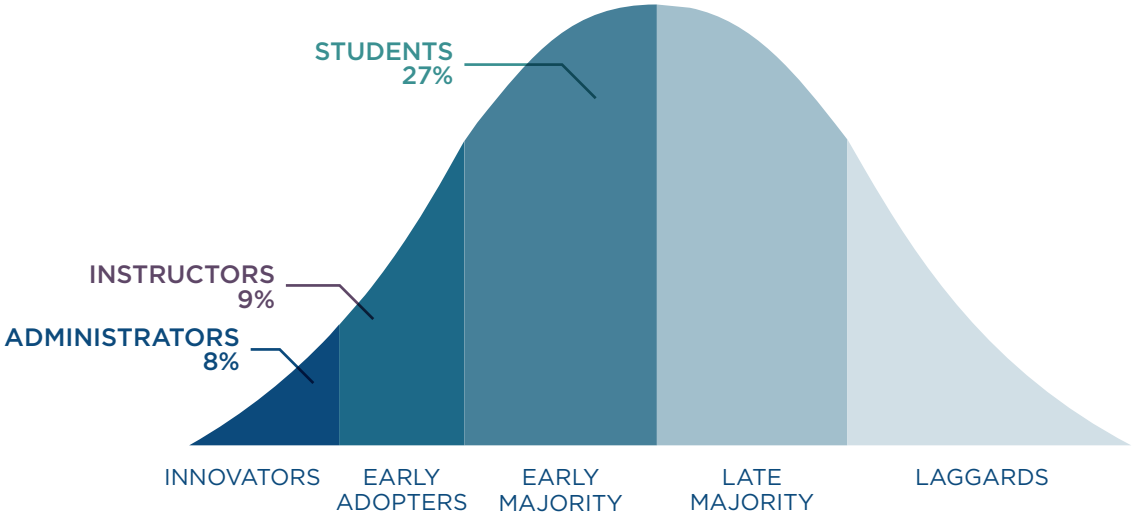
> ***"Students are less likely to abide by AI rules when a faculty member cannot (or does not) articulate the power of these technologies to do many of the tasks set in the course."***
>
> *– Dr. Andy Pennock, Associate Professor of Public Policy, and Co-chair of the University of Virginia's Generative AI Teaching and Learning Taskforce*[11]

11. *https://provost.virginia.edu/subsite/genai*

While institutional stakeholders are debating the next steps, students are adopting these tools at an exceptionally fast rate. Within just 100 days of ChatGPT's launch in November 2022, nearly one in three surveyed students reported regular use of generative AI tools (see *Figure 14*).

Figure 14:

Generative AI writing tool adoption curve, responses as of March 2023



Survey question: "Which of the following best describes your own use of generative AI writing tools (e.g., ChatGPT)?"
Student n=2,056, instructor n=1,692, administrator n=205

Source: Time for Class surveys 2023, Tyton Partners analysis

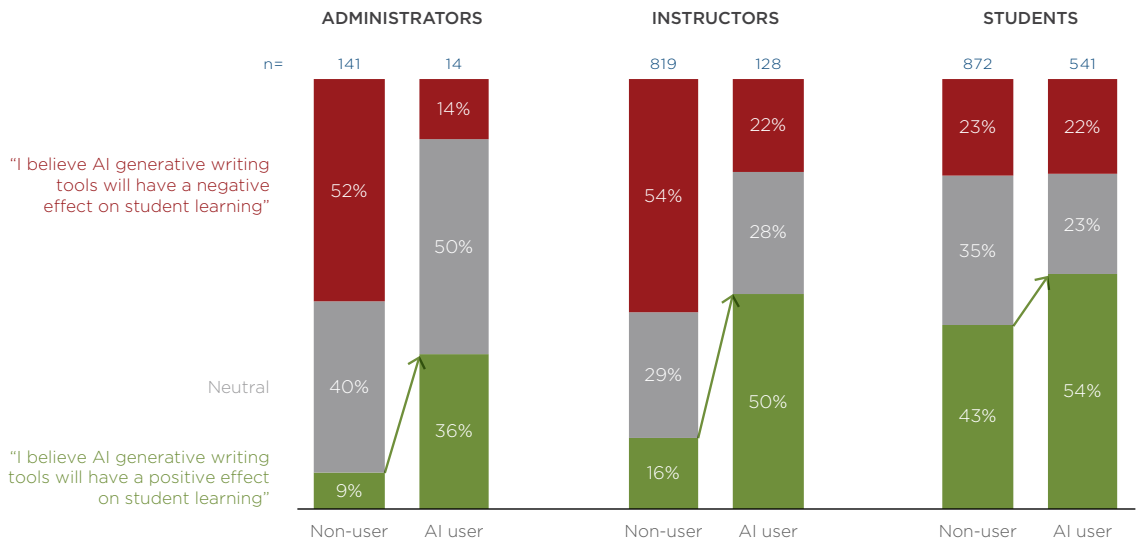
> ***"The thing I keep telling my colleagues is that in four years, every freshman will have grown up writing their high school essays with ChatGPT."***
>
> *– Dr. Andy Pennock, Associate Professor of Public Policy, and Co-chair of University of Virginia's Generative AI Teaching and Learning Taskforce*

Students are far outpacing faculty and administrators in their first-hand experience with these tools. An even greater number of students (48%) have tried AI writing tools at least once, whereas 71% of instructors and administrators have never used these tools, with 32% reporting that they are not even aware of these tools.

As instructors and administrators begin making decisions around the future of these tools in their courses and at their institutions, it will be important to have a deep understanding of the capabilities and limitations of these tools. First-hand use changes beliefs about the potential value of generative AI and the need for regulation. Instructors, administrators, or students who have experimented with generative AI tools are far more likely to recognize the tools' potential value in education and advocate for policies and practices at the institutional level that enable the responsible use of generative AI tools as part of teaching and learning (see *Figure 15*).

Figure 15:

Beliefs about generative AI writing tools' impact on student learning, responses as of March 2023



Notes: Survey question: "For the next few questions, please read each pair of statements and decide to what extent you agree with one more than the other. If you are exactly neutral, please move the slider to center to record your response as "Neutral"." Positive = 0-33, Neutral = 34-66, Negative = 67-100

Sources: Time for Class surveys 2023, Tyton Partners analysis

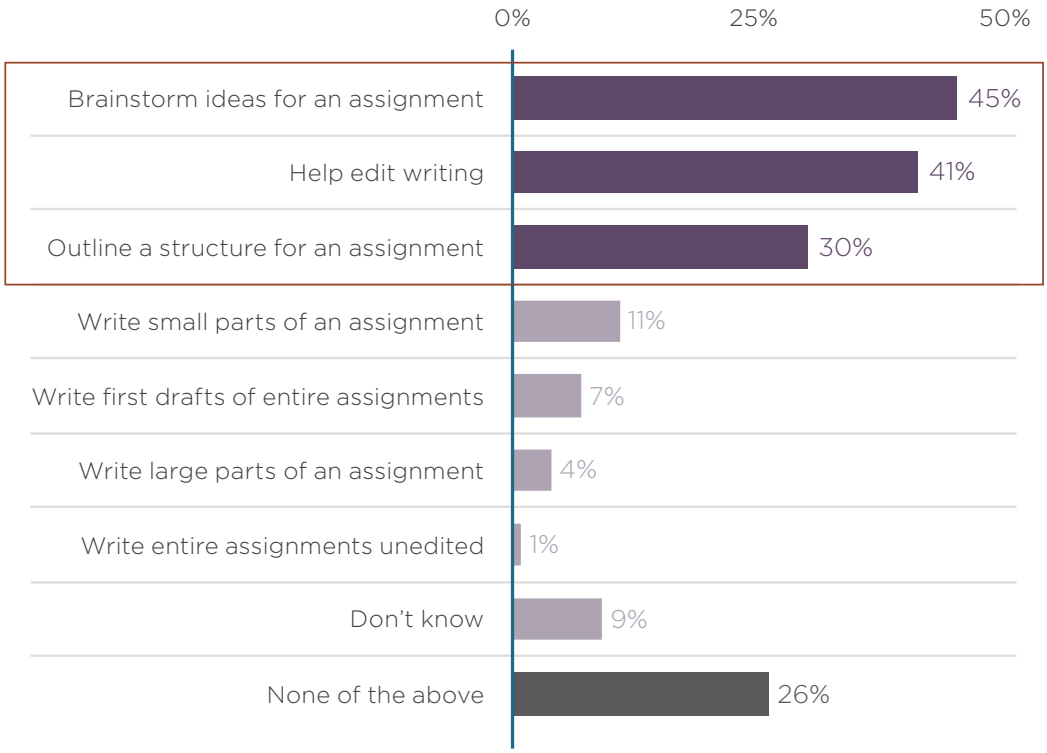
Fundamentally, when educators or students create an account and experiment with generative AI tools firsthand, their perspective on the tool's potential for positive learning outcomes changes.

> ***"You do not need to be an expert in AI models to experiment with their use as a teaching and learning tool. Instructors don't need to know how a lightbulb works to turn on the lights in a classroom. Learning how to use AI tools via first-hand use is quick and easy."***
>
> – *Balazs A. Szelenyi, Director of Faculty, Lead Teacher, and Teaching Associate Professor, Northeastern University*

The early adopter instructors regularly using these tools are opting to make instructional changes to their courses as they find ways to integrate AI into their teaching methods. Currently, many instructors report drawing the line at using the tools to generate text, whereas non-generative uses of these AI tools (e.g., brainstorming, editing, and outlining) are seen as more permissible, as shown in *Figure 16*.

Figure 16:

Instructor permitted uses of generative AI writing tools, responses as of March 2023



Notes: Survey question: "For each of the following student uses of generative AI writing tools, please indicate if you would allow it in your courses. Select all that apply." Instructor n=1,147

Sources: Time for Class surveys 2023, Tyton Partners analysis

At their core, generative AI tools like ChatGPT are just that—tools. They are incredibly powerful and can be harnessed by students and instructors to either improve education or rob students of foundational skills. The path forward will require an iterative approach, but for higher education to make informed decisions about where and how to monitor or integrate, the 71% of instructors and administrators who have yet to try generative AI tools need to spend hands-on time with these tools. Only 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. Below in *Table 2* are a few examples in which instructors and students are using generative AI to improve and enhance the teaching and learning process.

Table 2:

Illustrative examples of high-impact applications of AI in higher education teaching and learning

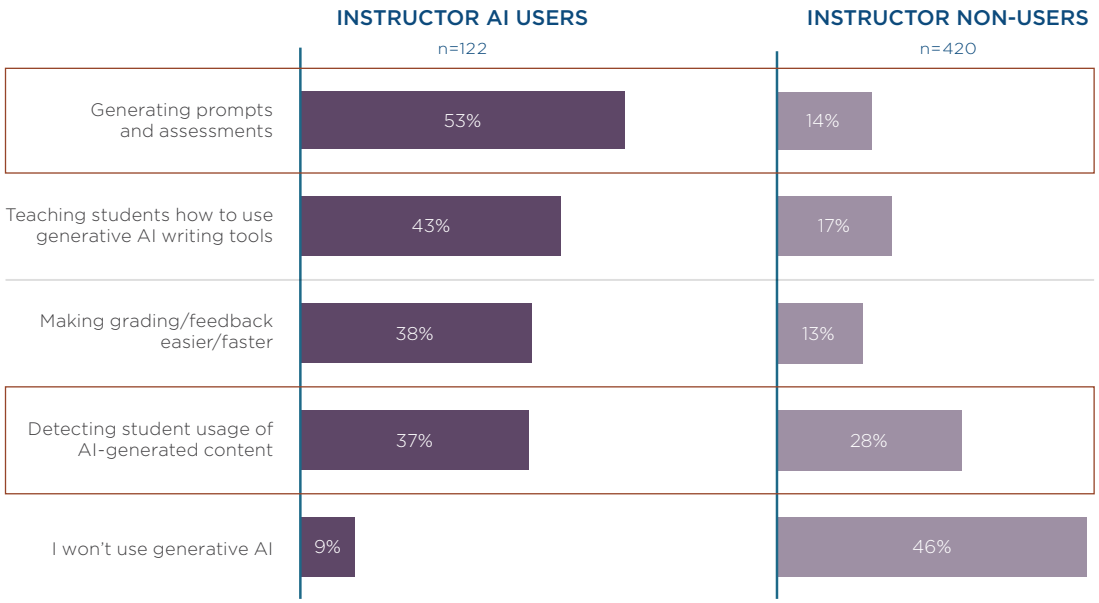
USER	USE CASE	EXAMPLE
Student	Presentation preparation	Student uses ChatGPT to provide a list of potential questions they might receive from audience after their final presentation and brainstorm thoughtful answers
	Personalized writing feedback	Student gives ChatGPT a first draft of an essay and the grading rubric and asks for feedback on where to improve against the rubric, enhancing their writing process
	Personal tutoring and explanations	Student gives ChatPDF a document of complex and detailed material and asks it to explain challenging concepts in different ways to support their understanding
Instructor	Enabling unique in-class experiential learning activities	A philosophy instructor has students "debate" a famous philosopher on their core ideas with ChatGPT role playing as the philosopher[12]
	Raising the bar for project work output	A business-school instructor teaching a product management course has students use generative AI tools to write and correct code supporting a functioning app for startup idea[13]
	Creating assignment materials and formative assessments for unique materials	A humanities instructor has a less-well-known short story they love teaching, but no corresponding activities or formative assessments; the instructor enters the short story into ChatPDF and can generate assignment ideas and formative assessments

12. Balazs A. Szelenyi, Director of Faculty, Lead Teacher, and Teaching Associate Professor, Northeastern University
13. *https://hbsp.harvard.edu/webinars/unlocking-the-power-of-ai*

In the short term, as most faculty are not AI tool users, the demand for detection of student use of AI is high. But longer term, as over 50% of current faculty users of generative AI tools are using the technology to generate prompts, solution providers in the space will also need to adjust their product and service roadmaps to consider the use of AI (see *Figure 17*).

Figure 17:

Future instructor uses of generative AI writing tools, responses as of March 2023



Notes: Survey question: "Please indicate how you plan to use generative AI writing tools as it relates to teaching and learning. Select all that apply." Instructor user n=122, Instructor non-user n=420, respondents that selected "Don't know," "None of the above," or "Other" are hidden

Sources: Time for Class survey 2023, Tyton Partners analysis

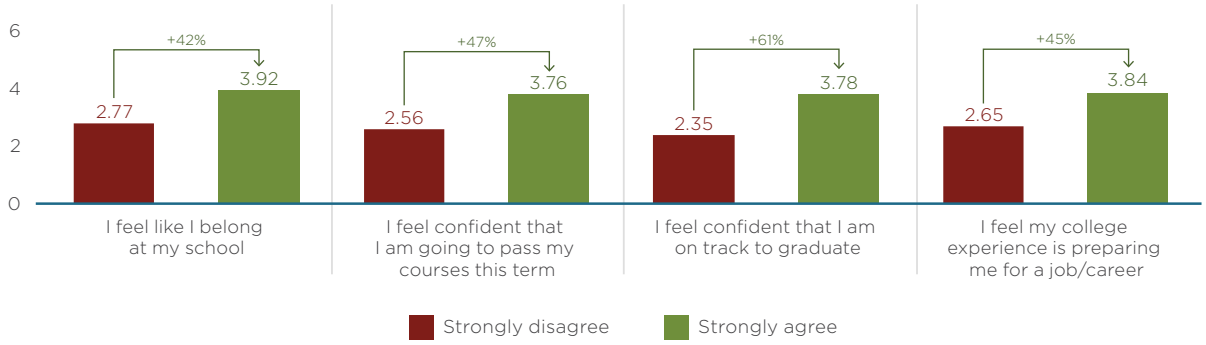
In particular, the assessment space will need to innovate to remain competitive with how content providers will undoubtedly leverage generative AI models trained on their trusted content (particularly large-scale, structured data) to create custom-generated assessments at scale. Further, providers should consider using methods such as proof-of-process features to enable academic integrity within their environments' assessments. As student use of generative AI tools increases and assessment evolves, institutions will need to support educators in adjusting how writing and other assignments are designed, completed, and evaluated in and out of class.

SUPPORT FOR EFFECTIVE TEACHING

Many of these instructional challenges are compounded by the fact that over a quarter of faculty believe their institution does not care about their health and well-being. However, faculty who perceive themselves as integral parts of the community and feel that their well-being is a concern for the institution are more likely to engage in evidence-based teaching practices, which demonstrably enhance student outcomes. As shown in *Figure 18*, students report higher rates of positive outcomes, such as a sense of belonging and confidence in academic success, when they perceive their instructors using evidence-based teaching practices.

Figure 18:

Average number of evidence-based teaching practices students report instructors engaging in



*Notes: Survey questions: "To what extent do you agree or disagree with the following statements?", n=1,550, "Don't know / NA" responses are excluded; Which of the following things did your instructor do in this (your largest) course? Select all that apply. *statistically significant difference, p=<.05*

Sources: Time for Class survey 2023, Tyton Partners analysis

The six evidence-based teaching practices[14] we investigated have proven to support postsecondary student learning and particularly benefit Black, Hispanic, Indigenous, students with financial need, and first-generation students in gateway courses. As shown in *Figure 19*, the EBTs specified are:

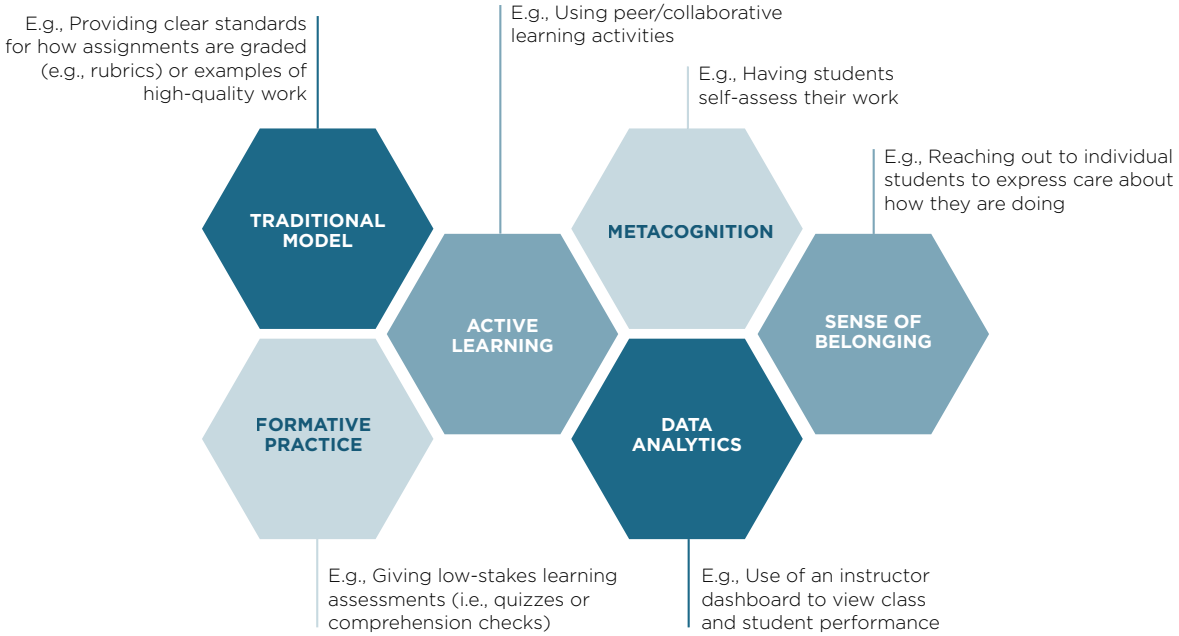
- **Transparency:** sharing with your students how your course is designed and your expectations for mastery
- **Active learning:** a way of engaging students in "learning by doing"
- **Metacognition:** practices that help students to be better learners and take control of their learning process
- **Formative practice:** opportunities for students to practice skills in ways that provide timely and targeted feedback in order to nudge them toward mastery
- **Data analytics:** data from courseware and LMS dashboards can inform teaching and ongoing course improvements to optimize student success
- **Sense of belonging:** creating an inclusive learning environment requires intentionally using practices that enable all students to feel that they, with their unique backgrounds, have a place in the classroom and in the discipline

There are several ways to employ these evidence-based teaching practices, and training and support are important for understanding which is most appropriate and effective for different course types and situations.

14. Rodgers, A. and O'Sullivan, P. (2022) An Equity-First Approach to Evidence-Based Teaching Practices. Every Learner Everywhere. *https://www.everylearnereverywhere.org/resources/an-equity-first-approach-to-evidence-based-teaching-practices*

Figure 19:

Evidence-based teaching practices

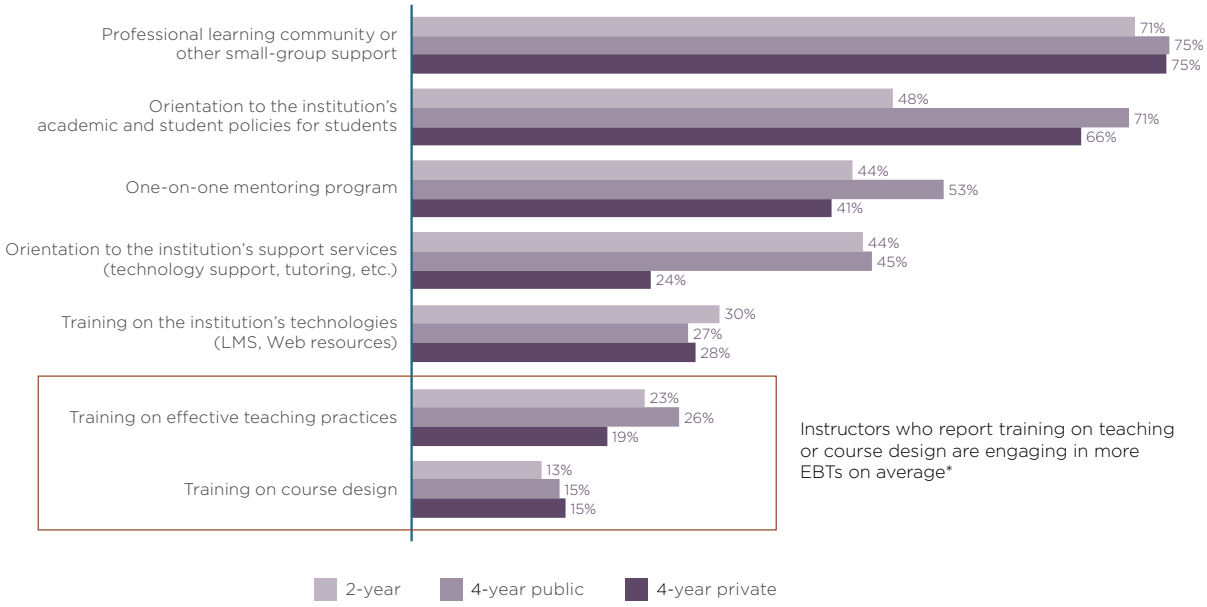


Institutions that value effective teaching must demonstrate this support unequivocally: Faculty who report that effective teaching is important to promotion or tenure are more likely to employ evidence-based teaching practices. In addition, institutional support plays a pivotal role. Faculty members who report access to a "highly resourced" Center for Teaching and Learning (CTL) are more likely to report that they utilize evidence-based practices compared to those with an "insufficiently resourced" CTL.

Despite the benefits and need, less than a quarter of institutions currently offer comprehensive training on effective teaching practices or course design – components that could substantially increase the use of evidence-based teaching practices (see *Figure 20*).

Figure 20:

Top supports offered to instructors



*Notes: Survey question: "Which of the following describes the resources that your institution offers prior to teaching a course? Select all that apply." Instructor n=1,748; *statistically significant difference, p<.05*

Sources: Time for Class survey 2023, Tyton Partners analysis

Though instructors have a wide range of institutional support resources, solutions providers should focus on product design that makes it easier for instructors to adopt digital tools to support EBTs. Practicing effective teaching in this complex, digital environment requires an integrated approach that combines incentivizing policies, targeted resources, and a supportive institution – now more than ever.

IMPLICATIONS

The findings of this study highlight the need for institutions and providers to address the differences between student and institutional stakeholder experiences and preferences to design digital learning experiences that deliver improved outcomes for learners. By identifying areas of misalignment, this research can help institutions implement strategies that promote access, affordability, and positive outcomes for all students while supporting instructors in incorporating evidence-based teaching practices. Institutions and providers should recognize barriers to student access to technology and affordability challenges, and ensure that digital learning tools and pedagogies are incorporated in ways that close rather than exacerbate systemic equity gaps in higher education. Today's learners prefer online, hybrid and blended formats and have high expectations for their institutions to deliver on an experience that combines technology and the human touch. In addition, a growing body of research suggests that digital learning can be a key part of a digital transformation strategy. As a result, its important for institutional leaders to take a holistic approach to the integration and adoption of digital tools and for providers to design for end users with this context in mind.

Generative AI has transformed the digital tool landscape, offering the potential for greater personalization, real-time support, and changing how learning (especially writing) is assessed. For institutional leaders and providers, this is a moment to carefully consider how to harness the power of these tools for teaching and learning, while ensuring an understanding of their risk. Institutional stakeholders must now take the time to experiment thoughtfully with available tools and increase resources/support for effective teaching with digital tools. Solutions providers are undoubtedly facing similar pressure to adapt to new technologies; the digital assessment space, in particular, will need to evolve, and institutions will need to support instructors in adapting. Core digital materials providers must keep unique use cases, such as reducing workload and inclusivity, in mind when integrating the same technologies.

SURVEY DEMOGRAPHICS

Time for Class (T4C) is a series of national, longitudinal surveys of over 4,000 higher education students, faculty, and administrators. The survey is designed to measure the evolving nature of digital learning, digital courseware, and other learning tools at higher education institutions across the United States to increase affordability, accessibility, and equity for students.

For T4C 2023, higher education administrators, faculty, and students received online surveys ranging from 10 to 40 minutes (depending on their individual roles) in February and March of 2023. We collected responses from approximately 300 administrators and 1,750 faculty at over 900 unique postsecondary institutions, as well as over 2,000 students from two- and four-year private and public institutions.

Figure 21:

Overview of three national surveys fielded in Spring 2023

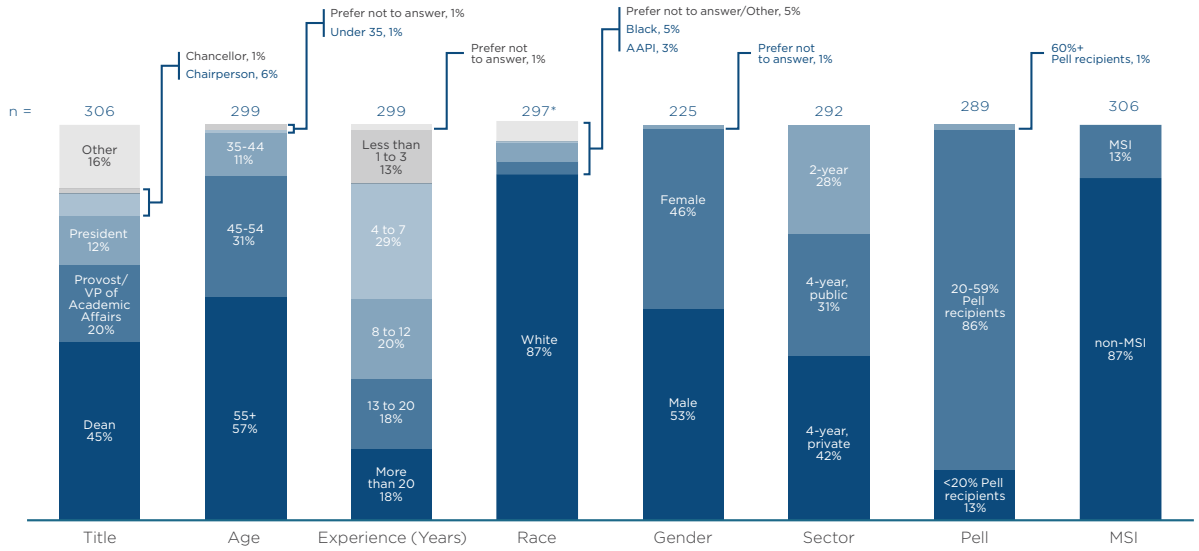
	ADMINISTRATOR SURVEY	INSTRUCTOR SURVEY	FOUR-YEAR STUDENT SURVEY	COMMUNITY COLLEGE STUDENT SURVEY
Qualified completes	306	1,748	1,031	534
TIME TO COMPLETE	26 mins	38 mins	11 mins	7 mins

Source: Time for Class 2023 Surveys

This year's survey has gathered survey responses from a representative set of administrators, faculty, and students nationwide, reflecting diversity in region, age, race, gender, and other collected demographic information. Because not all questions were presented to every respondent, response numbers vary by segment. Due to rounding, percentages may equal slightly more or less than 100%.

Figure 22:

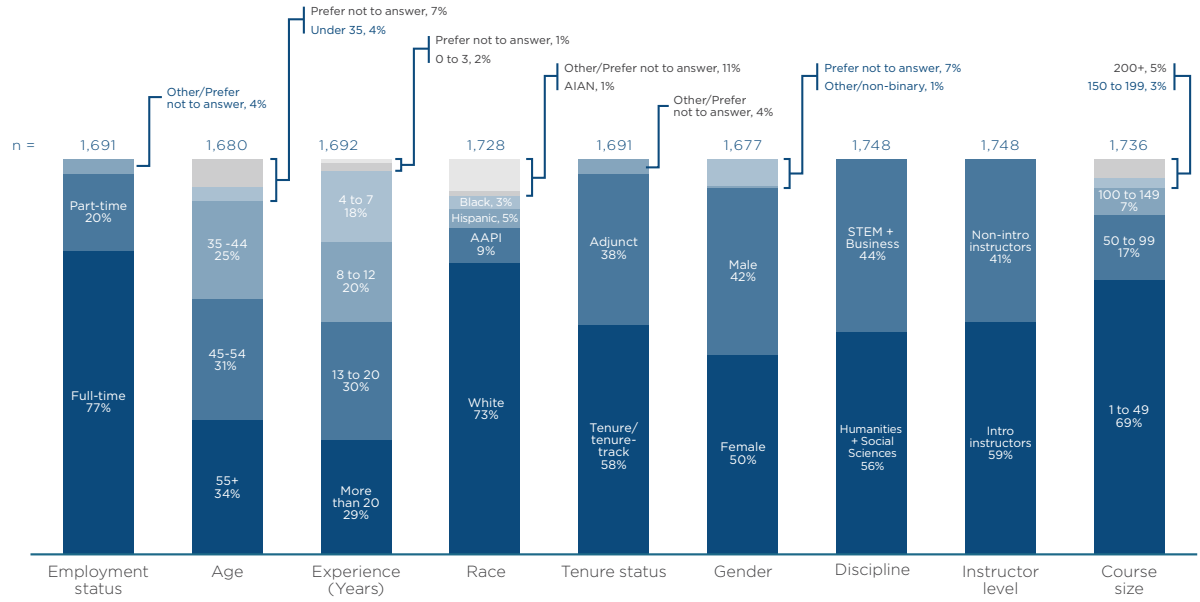
Overview of administrator survey respondents



*Note: *No indicated Hispanic/Latinx racial background, one respondent indicated American Indian/Alaskan Native background*
Sources: Time for Class Administrator Survey 2023, NCES, Tyton Partners analysis

Figure 23:

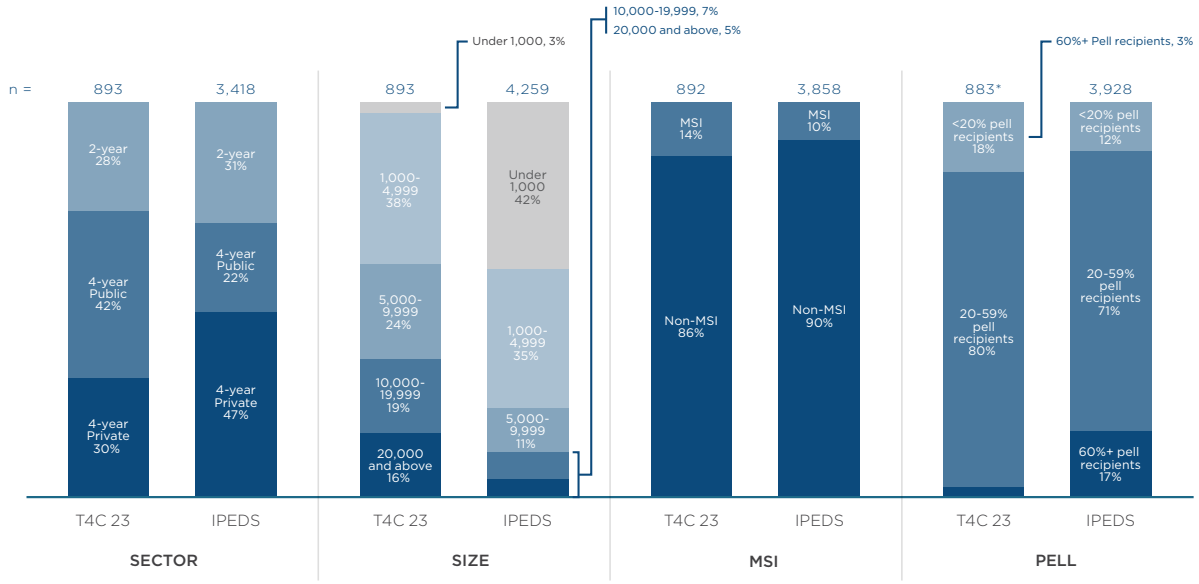
Overview of instructor survey respondents



Sources: Time for Class Instructor Survey 2023, NCES, Tyton Partners analysis

Figure 24:

Comparison of instructor institutions and IPEDS distribution

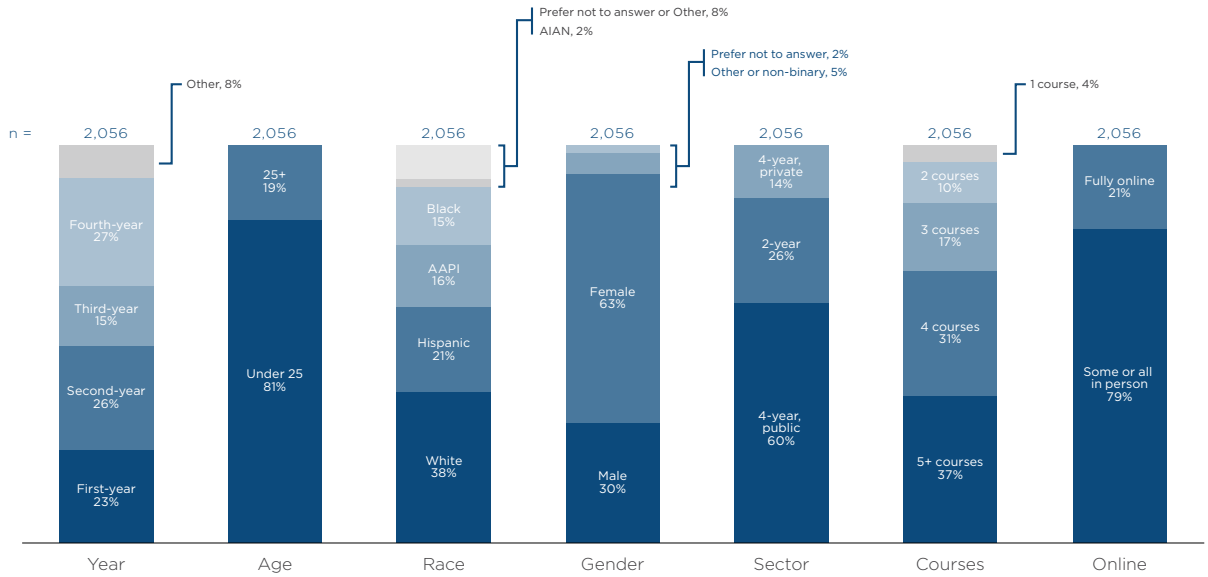


*Note: *Two-year includes private and public institutions*

Sources: Time for Class instructor Survey 2023, NCES, Tyton Partners analysis

Figure 25:

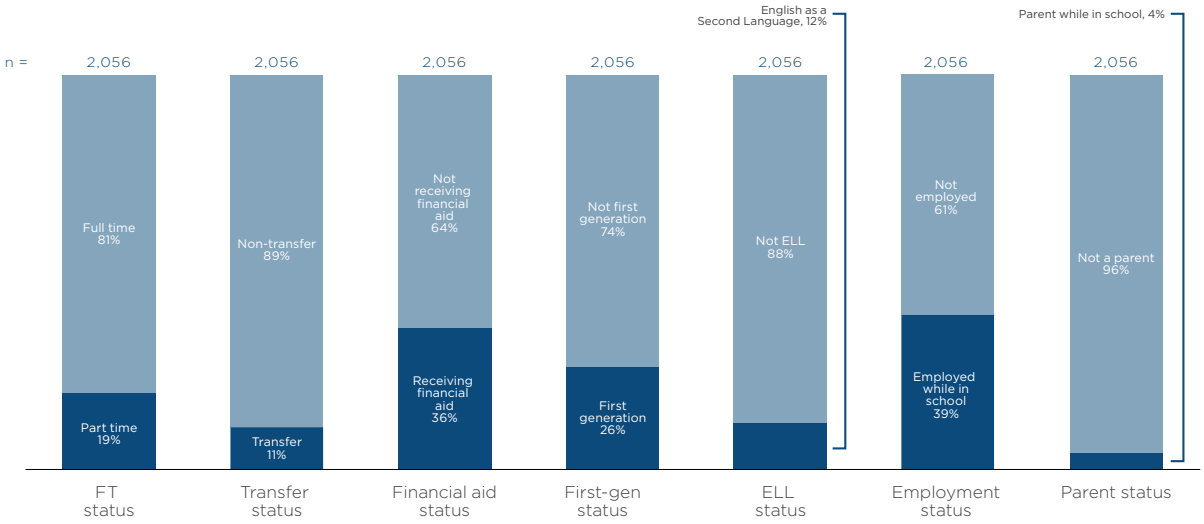
Overview of student survey respondent demographics



Sources: Time for Class Student Survey 2023, Tyton Partners analysis

Figure 26:

Overview of student survey respondent life experiences



Notes: International students make up 3% of responses; Active and veteran military make up 1% of responses; all data is self-reported
Sources: Time for Class Student Survey 2023, Tyton Partners analysis

Based on the entire response set, the 95% confidence interval is +/- 2% for questions asked of instructors. Questions addressed to a smaller subset because of skip logic have wider confidence intervals. Generally, subgroups with samples of less than 10 responses were discounted. As with all large-scale surveys, T4C has the potential for bias. It is possible that respondents willing to take a digital survey, as opposed to a paper instrument, could be biased toward digital technology; it is also possible that those willing to take the time to discuss their own experiences with digital learning tools have stronger opinions than those who chose not to participate.

ACKNOWLEDGMENTS

Our research would not be possible without our survey respondents – thank you to all the students, instructors, and administrators who so thoughtfully shared their experiences with us to enable learning and improvement.

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