Charting the Digital Future
Equitable Access and Attitudes in Tech-enabled Learning
2023 CIN EdTech Student Survey

Please direct media queries to:
cin@wgulabs.org

Citation:
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Executive Summary

In recent years, higher education has shifted away from traditional in-person, brick-and-mortar models of learning to those that are more flexible, personalized, and increasingly online. Proponents argue that this digital transition will bridge disparities and increase college access and success among learners who have historically not been included or well served by traditional higher education, such as first-generation college students.

At WGU Labs, we’ve been tracking student and faculty perspectives on the transition to an increasingly tech-enabled higher education system for the last three years, and one message has been clear and consistent: Most expect higher education to be more online and tech-enabled in the future. Our surveys revealed that most of our student respondents — and first-generation respondents in particular — are excited about this transition. Indeed, the third edition of our CIN Student EdTech Survey revealed that first-generation college students were almost 10 percentage points more likely to say they’d be interested in taking online courses in the future.

These survey findings make it clear that a higher education system that is inclusive, particularly of first-generation students, has to include effective online options. We propose five critical levers of equitable and effective tech-enabled learning:

- **Digital Access**: Students have consistent access to digital infrastructure including hardware, software, and internet access needed for tech-enabled learning.
- **Digital Self-Efficacy**: Students have the skills, knowledge and confidence needed to effectively engage with the technologies available to them.
- **Positive Sentiment**: Students have the attitudes and motivation needed to successfully engage with tech-enabled learning.
- **High-Quality Instruction**: Higher education institutions provide high-quality experiences with tech-enabled instruction.
- **Wraparound Support**: Students have access to, and are engaged with, wraparound support in a variety of modalities.
- **Equitable Access**: Access to these conditions is equitable across diverse groups of learners.
The goal of the third edition of our CIN Student EdTech Survey was to gather students’ perspectives and experiences on whether these necessary conditions are met — and identify opportunities to improve the transition to tech moving forward.

In this survey, we found that more technology in higher education can be valuable for expanding access and engagement to learners from underserved groups — particularly first-generation college students. Fortunately, we found that many of the important foundations for a successful tech-engaged higher-ed sector are in place within our sample of respondents. Students largely report having access to the hardware, software, and internet tools they need, as well as the skills and confidence to use those tools. But we found the levers around ensuring equitable access to new technologies and providing effective tech-enabled instruction and support services still need work.

**TAKEAWAY 1: FIRST-GENERATION COLLEGE STUDENTS ARE NEARLY TEN PERCENTAGE POINTS MORE POSITIVE ABOUT TECHNOLOGY.**

First-generation students show more positive attitudes toward future online learning options by almost ten percentage points. For example, 63% of continuing-generation students reported positive attitudes toward institutions offering more fully online programs in the future (i.e., students with at least one parent who attended or graduated from college), but 72% of first-generation students (i.e., students with at least one parent who attended or graduated from college) did. First-gen students were also more likely to be primarily taking online courses, more interested in taking online courses in the future, and less concerned about the quality of online learning than their peers. Indeed, 42% of first-generation students reported that they were primarily taking online courses, compared to 33% of continuing-generation students. **Seventy-six percent of first-generation students reported that they would be interested in taking online courses in the future**, whereas 67% of continuing-generation students did. Finally, 33% of first-generation students agreed that credentials completed online are lower quality than those completed in person, while 39% of continuing-generation students did.
TAKEAWAY 2: THE DIGITAL DIVIDE HAS DIMINISHED, BUT TWO-THIRDS OF STUDENTS HAVE TECH FATIGUE AND FIRST-GEN STUDENTS TRAIL PEERS IN ACCESS TO AI TOOLS.

The majority of students reported having access to wifi and devices and feel confident in their ability to use EdTech. For example, 84% agreed that they had access to devices needed to succeed in their academics, and 78% agreed that they had access to reliable internet. Eighty-seven percent agreed that they felt confident in their ability to effectively use the educational technologies available to them. We did not see evidence of differences by parental education, race, or age. However, many students reported feeling fatigued by technology — **59% percent of respondents agreed that there are days that they don’t want to use educational technology because they need a break from it.** Moreover, we saw inequities in awareness and utilization of new generative AI technologies: Whereas over half (52%) of continuing-generation students in our sample reported knowing about ChatGPT, only about a third (34%) of first-generation students did. Only about 7% percent of first-generation students reported having used ChatGPT to help with their coursework, compared to roughly 11% of continuing-generation students.

“There are days I don’t want to use educational technology because I need a break from it.”

59% agreed

TAKEAWAY 3: EIGHTY PERCENT OF STUDENTS FIND ONLINE COURSES EFFECTIVE, BUT STILL PREFER FACE-TO-FACE OPTIONS.

When asked to rank their preferences for different course formats, students showed a preference for in-person learning compared to hybrid and online options. A larger percentage of students also reported that they were effectively learning in their in-person courses compared to other modalities. However, a large majority of students (over 80%) reported that they were effectively learning in their online courses. Students with more experience taking online courses were more likely to report that they were effectively learning in online courses than did those with less experience with online courses. Finally, the majority of students reported that EdTech improved the quality of instruction, suggesting that successful use of EdTech in the classroom may be an effective way to enhance the quality of online instruction. For example, **74% of respondents agreed that educational technology makes their courses more engaging and that educational technology helps them more effectively learn course material.**

“Educational technology makes my courses more engaging and helps me more effectively learn course material.”

74% agreed
ABOUT THE COLLEGE INNOVATION NETWORK

The College Innovation Network (CIN) at WGU Labs is a grant-funded, research-oriented initiative that connects institutions with the best solutions to ensure student belonging, engagement, and equity. CIN supports educational institutions by identifying areas of need, supporting the implementation of effective education technology for students, and evaluating impact through research. Our goal is to have a meaningful impact on higher education at large through the evaluation of impactful solutions that promote belonging, engagement, and equity.

ABOUT THE CIN EDTECH SURVEY SERIES

CIN is in a unique position to learn about the student, faculty, and administrator experience with EdTech by leveraging the diversity of institutions within the Network. The CIN EdTech Survey Series is administered across the Network three times a year with the goal of generating valuable insights to help institutions understand how faculty and students experience EdTech. These insights can be applied to improve faculty and student experiences, and ultimately bolster the impact of EdTech across the sector. As CIN continues to grow, so will the impact of the CIN EdTech Survey Series.

Queries about CIN can be addressed to cin@wgulabs.org

TAKEAWAY 4: STUDENTS REPORT LOW OVERALL USAGE OF SUPPORT RESOURCES, BUT TECH INCREASES THEIR USAGE — PARTICULARLY AMONG FIRST-GENERATION LEARNERS.

Students reported accessing resources infrequently overall, but they reported accessing online support resources more often than in-person resources in the 2022-2023 academic year. For example, less than half of respondents (47%) reported that they accessed student support services such as counseling, financial services, or IT support in person in the past year, but 66% of respondents reported that they had accessed online support services. Only 24% percent of respondents reported they had accessed in-person career services, while 32% reported that they had accessed online career services. Forty-one percent reported that they accessed in-person academic support services, such as tutoring, while 48% reported that they accessed online academic support services.

Critically, 78% of students in our sample reported that technology makes it easier for them to access resources at their institution. Finally, we saw that first-generation students reported accessing online student support resources more frequently than did their peers.

“Technology makes it easier for me to access resources at my institution.”

78% agreed

[bar chart]

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Introduction

Higher education has long been promised as a “great equalizer” through which individuals of diverse backgrounds can achieve social class mobility through expanded career prospects and increased earnings. However, long-standing inequities in college access and attainment between learners from underserved groups and their more privileged peers suggest that higher education is falling short on these promises.

Recently, higher education started a transition from relatively inflexible brick-and-mortar models of learning to those that are more flexible and can better meet the needs of diverse learners. Increasingly, these flexible models of learning are online and tech-enabled. This digital shift has been met with both skepticism and excitement. Many proponents of tech-enabled learning are excited about its potential to bridge disparities among learners who have historically not been included or well served by traditional higher education. Indeed research has shown that online programs can increase college enrollment among students who would not otherwise be able to access in-person instruction (Goodman 2019).

Students who are the first in their families to attend college (i.e., first-generation college students) are one such group that stand to benefit from the accessibility and flexibility that online learning can provide. Compared to their peers, first-generation college students are less likely to persist and graduate than children of college-educated parents. And they are more likely to come from low-income families, more likely to work full-time while in school, and more likely to be supporting dependents while in college.

Technology-enabled learning has the potential to remove many of the barriers that first-generation college students face in traditional in-person programs by allowing them to complete college at a time and location that best meets their needs. Improving access to education doesn’t just benefit learners. As of June 2023, there are 3.7 million more job openings than unemployed workers in the U.S. Employers desperately need access to a new generation of skilled workers to overcome America’s labor shortage.

At WGU Labs, we’ve been tracking student and faculty perspectives on the transition to an increasingly tech-enabled higher education system for the last three years and one message has been clear and consistent: Most expect higher education to be more online and tech-enabled in the future. Our surveys have revealed that

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most of our student respondents — and first-generation respondents in particular — are excited about this transition. Indeed, the third edition of our CIN Student EdTech Survey revealed that first-generation college students were almost ten percentage points more likely to say they’d be interested in taking online courses in the future.

These survey findings make it clear that a higher education system that is inclusive of first-generation students has to include online options, but we will not serve these learners effectively unless certain critical conditions are met. We propose five critical levers of equitable and effective tech-enabled learning:

**FRAMEWORK FOR A SUCCESSFUL TECH-ENABLED FUTURE IN HIGHER EDUCATION**

- **Digital Access**: Students have consistent access to digital infrastructure including hardware, software, and internet access needed for tech-enabled learning.
- **Digital Self-Efficacy**: Students have the skills, knowledge and confidence needed to effectively engage with the technologies available to them.
- **Positive Sentiment**: Students have the attitudes and motivation needed to successfully engage with tech-enabled learning.
- **High-Quality Instruction**: Higher education institutions provide high-quality experiences with tech-enabled instruction.
- **Wraparound Support**: Students have access to, and are engaged with, wraparound support in a variety of modalities.
- **Equitable Access**: Access to these conditions is equitable across diverse groups of learners.

Our goal for the third edition of our CIN Student EdTech Survey was to gather students’ perspectives and experiences on whether these necessary conditions are met — and identify opportunities to improve the transition to tech moving forward. Understanding the student perspective on the transition to tech-enabled learning is critical for ensuring that technology can deliver on its promise to create a more inclusive and equitable higher education system.

With this goal in mind, CIN surveyed members across nine institutions in April of 2023 (Appendix, Figure 19). In this report, we present the main findings from the survey, organized into the four following key takeaways. From these takeaways, we offer strategic recommendations that institutions and EdTech vendors can leverage to improve the faculty experience with EdTech.

- **Takeaway 1**: First-generation college students are nearly ten percentage points more positive about technology.
- **Takeaway 2**: The digital divide has diminished, but two-thirds of students have tech fatigue and first-gen students trail peers in access to AI tools.
- **Takeaway 3**: Eighty percent of students find online courses effective, but still prefer face-to-face options.
- **Takeaway 4**: Students report low overall usage of support resources, but tech increases their usage — particularly among first-generation learners.

**METHODOLOGY**

In April of 2023, the CIN research team emailed surveys to more than 30,000 students across nine CIN member institutions. These post-secondary institutions included community colleges, private and public four-year institutions, and primarily online, not-for-profit colleges. The survey contained 55 questions about students’ experiences with educational technologies and online learning. Our final sample consisted of 3,143 students. Sixty-eight percent of respondents were enrolled at a four-year institution, 18.1% at a community college, and 13.5% at a primarily online college. See the appendix for a more detailed description of the sample and methodology.
Takeaway 1: First-generation college students are nearly ten percentage points more positive about technology.

One of the major potential benefits of tech-enabled instruction is that it can expand college access to students who have historically been excluded from traditional models of higher education. For example, online learning offers greater flexibility for students to balance school and work — an important benefit for those who do not have family resources to support them through schooling or are supporting families of their own. First-generation college students are one such group that may benefit from the flexibility offered by technology. To examine this possibility, we included several questions about students’ attitudes towards the future of higher education and online degrees. We examined students’ responses to these questions overall, and across key demographic groups such as race/ethnicity, parental education, and age. Results showed that while students overall were positive toward the transition to online and tech-enabled learning, first-generation students were particularly excited about this transition.

FIRST-GENERATION STUDENTS ARE PARTICULARLY POSITIVE ABOUT TECH-ENABLED LEARNING.

When asked to rate how they felt about an increasingly tech-enabled future of higher education, most respondents expressed a positive view of a tech-enabled future. First-generation college students, however, were particularly positive about the transition to tech. Indeed, 73% of first-generation college students felt positively about institutions offering more fully online courses, and 72% felt positively about institutions offering more fully online degree programs. In contrast, 66% of continuing-generation students felt positively about institutions offering more fully online courses, and 63% felt positively about institutions offering more fully online degree programs (see Figure 1). [7]

[7] In our sample, parental education was correlated with the type of institution in which students were enrolled. Thus, as a robustness check, for all items on which we saw differences in frequencies of different response options by parental education, we also examined mean responses on these items across first-generation and continuing-generation students, controlling for institution type. These analyses revealed that the differences between first-generation and continuing-generation students were statistically significant, even after accounting for differences based on the type of institutions students were attending. See the appendix for more details about these analyses.
FIRST-GENERATION STUDENTS ARE MORE LIKELY TO TAKE PRIMARILY ONLINE COURSES.

Among our student sample, first-generation college students were more likely than continuing-generation students to be primarily taking online courses as opposed to taking courses in-person or in the hybrid modality. Over 40% of first-generation students reported that they were primarily taking online courses, compared to 33% of continuing-generation students.

FIRST-GENERATION STUDENTS ARE MORE INTERESTED IN TAKING ONLINE COURSES AND HAVE FEWER CONCERNS ABOUT THE QUALITY OF ONLINE CREDENTIALS.

Finally, compared to their continuing-generation peers, first-generation students were more interested in taking online courses in the future and were less concerned about the quality of online credentials. Seventy-six percent of first-generation students agreed that they would be interested in taking online courses in the future, compared to 67% of continuing-generation students. Thirty-three percent of first-generation students agreed that credentials earned online are generally lower quality than those completed in person and 26% agreed that getting a job is more difficult with an online degree than an in-person degree, whereas 39% and 31% of continuing-generation students agreed with these statements.
WHY THIS MATTERS

First-generation students face more barriers to college access, enrollment, and completion relative to their peers. Our data show that first-generation students are particularly excited about the transition to a technology-enabled higher education system, which suggests that expanding online courses and programs may increase college access and enrollment among this group. However, to fully address disparities between first-generation students and their peers, it is also necessary to ensure first-generation learners who opt in to online learning are given the necessary support and resources that allow them to not only access college, but also to graduate and obtain meaningful employment.

For the next questions, we'd like your thoughts about online learning and degrees in general. When you answer them, think about online learning in general, not just the options at your specific institution.

Credentials earned online are generally lower quality than those completed in-person.

<table>
<thead>
<tr>
<th></th>
<th>First-generation</th>
<th>Continuing-generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>33%</td>
<td>39%</td>
</tr>
<tr>
<td>Neutral</td>
<td>25%</td>
<td>24%</td>
</tr>
<tr>
<td>No</td>
<td>42%</td>
<td>37%</td>
</tr>
</tbody>
</table>

Getting a job is more difficult with an online degree than an in-person degree.

<table>
<thead>
<tr>
<th></th>
<th>First-generation</th>
<th>Continuing-generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>26%</td>
<td>31%</td>
</tr>
<tr>
<td>Neutral</td>
<td>43%</td>
<td>46%</td>
</tr>
<tr>
<td>No</td>
<td>31%</td>
<td>23%</td>
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I would be interested in taking more online courses in the future.

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<tr>
<th></th>
<th>First-generation</th>
<th>Continuing-generation</th>
</tr>
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<tbody>
<tr>
<td>Yes</td>
<td>76%</td>
<td>67%</td>
</tr>
<tr>
<td>Neutral</td>
<td>10%</td>
<td>13%</td>
</tr>
<tr>
<td>No</td>
<td>14%</td>
<td>21%</td>
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Takeaway 2: The digital divide has diminished, but two-thirds of students have tech fatigue and first-gen students trail peers in access to AI tools.

The transition to a tech-enabled higher education system will not be successful unless all students have devices and reliable internet, as well as the skills and motivation needed to successfully engage with the tech-enabled learning environment. Our results show that students generally have access to devices and wifi, and they feel confident in their ability to effectively engage with technology. Yet many students reported feeling fatigued by technology. Moreover, when we asked students about their awareness and utilization of new AI technologies such as ChatGPT, we found that first-generation students were less likely than their peers to know about and have used these technologies to help with their coursework.

The majority of students report they have access to the tech needed for learning — and feel confident using it.

A tech-enabled education future requires universal access to hardware, software, and internet, as well as universal confidence to use those tools. Our survey suggests we are close but still falling a little short of establishing this foundation. Among our respondents, 84% agreed that they had access to devices and other hardware, and 78% agreed that they had access to reliable internet needed to succeed in their academics in the past year. We did not see evidence that access

**ACCESS TO AND OWNERSHIP OF NECESSARY TECHNOLOGY**

Read the following statements and indicate the extend to which you agree or disagree with each.

I have had access to devices and other hardware (e.g., computers, tablets, webcams, etc.) needed to succeed in my academics this past year.

- 6% **NO**
- 9% **NEUTRAL**
- 84% **YES**

I have had access to reliable Internet and other technologies needed to succeed in my academics this year.

- 14% **NO**
- 8% **NEUTRAL**
- 78% **YES**
differed by parental education, race/ethnicity, or age. However, our results show that access to necessary technology is still a concern for a small but meaningful percentage of our sample (6% did not have access to devices, and 14% did not have access to reliable internet), suggesting a need to further expand device and internet access so that all students can benefit from tech-enabled instruction.

Students’ confidence in using technology (or their EdTech self-efficacy) — a condition that we previously found predicts how positively students view their education experience — also appears very high among our respondents. Eighty-seven percent of students agreed that they felt confident in their ability to effectively use the educational technologies available to them, 87% agreed that they felt confident in their ability to adapt to new educational technologies in their courses, and 79% agreed that when they encountered difficulties using educational technologies, they were confident that they could overcome them.

Overall, our survey suggests that Edtech self efficacy is high, but a small group of students continue to struggle with technology in their learning. This matters because we have found that EdTech self-efficacy predicts students’ academic experiences: Those who reported low levels of EdTech self-efficacy also reported worse academic experiences.

FIFTY-NINE PERCENT OF STUDENTS FEEL FATIGUED BY TECHNOLOGY.

Although most students in our sample felt confident in their abilities to effectively engage with technology, technology nonetheless is driving fatigue for a great many respondents — a trend that mirrors findings from our latest Faculty EdTech survey. Fifty-nine percent agreed that there are days when they do not want to use educational technology because they need a break from it, 37% agreed that they feel “mentally tired” due to the use of educational technology at their college, and 27% agreed that they feel overwhelmed by educational technology.
FIRST-GENERATION COLLEGE STUDENTS WERE LESS LIKELY THAN THEIR PEERS TO KNOW ABOUT AND HAVE USED AI.

Finally, we examined students’ access and utilization of new generative AI technologies by key demographic variables such as race/ethnicity, age, and parental education. Although we did not find evidence of differences across race or age, we found important differences by parental education. Only 34% of first-generation college students knew about ChatGPT. By comparison, roughly half (52%) of continuing-generation students had heard about ChatGPT.

Reported usage of ChatGPT was low across all groups of students, but particularly among first-generation students. Seven percent of first-generation students reported using ChatGPT to help with coursework, while 11% of continuing-generation students did.

WHY THIS MATTERS

Ensuring that students have the material resources, skills, and motivation needed to effectively engage with technology will be critical for creating successful tech-enabled learning experiences. Our data show that, by and large, students have the necessary material resources, skills, and abilities needed to effectively engage with technology — though there is a measurable fatigue with these tools. Still, there is a small and meaningful segment of students who are at risk of being left behind, and recently scaled generative AI technologies are introducing new inequality that institutions will want to monitor and tackle to ensure students have universal access to the fundamental tools of a tech-enabled education.

KNOWLEDGE AND USE OF CHATGPT

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<thead>
<tr>
<th></th>
<th>First-generation</th>
<th>Continuing-generation</th>
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<tr>
<td>Do you know about ChatGPT and other tools that can gather information from the internet to answer your questions in an essay format?</td>
<td>65.9%</td>
<td>51.6%</td>
</tr>
<tr>
<td>Have you ever used ChatGPT to help with your coursework?</td>
<td>93.2%</td>
<td>89.3%</td>
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Figure 7
Takeaway 3: Eighty percent of students find online courses effective, but still prefer face-to-face options.

Ensuring that students have high-quality experiences with tech-enabled instruction is critical for successfully leveraging technology to address inequities in higher education. If students who cannot access traditional in-person instruction have lower-quality learning experiences than their peers, inequities will persist. Our data show that although students in our sample largely prefer in-person learning formats and find them to be the most effective, students are increasingly embracing online formats. Moreover, students with more experience taking online courses found them to be more effective than their less-experienced peers. Finally, the majority of students in our sample reported that educational technology improves their learning experiences and enhances the quality of instruction.

**MOST STUDENTS FIND ONLINE LEARNING FORMATS TO BE EFFECTIVE, PARTICULARLY THOSE PRIMARILY TAKING ONLINE COURSES.**

When we asked how effective each of the four course formats were for their learning, 96% of respondents reported that in-person courses were effective for them. However, as many as 80% of respondents reported that online course formats were effective for their learning.

**EFFECTIVENESS OF COURSES BY FORMAT**

<table>
<thead>
<tr>
<th>Class Format</th>
<th>Effective</th>
<th>Not Effective</th>
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<tbody>
<tr>
<td>Fully in-person courses</td>
<td><img src="image" alt="Fully in-person courses" /></td>
<td><img src="image" alt="Fully in-person courses" /></td>
</tr>
<tr>
<td>Hybrid courses (e.g., some components online and some components in-person)</td>
<td><img src="image" alt="Hybrid courses" /></td>
<td><img src="image" alt="Hybrid courses" /></td>
</tr>
<tr>
<td>Online synchronous courses (i.e., online classes occurring live or in real-time)</td>
<td><img src="image" alt="Online synchronous courses" /></td>
<td><img src="image" alt="Online synchronous courses" /></td>
</tr>
<tr>
<td>Online asynchronous courses (i.e., online classes NOT occurring live or in real-time)</td>
<td><img src="image" alt="Online asynchronous courses" /></td>
<td><img src="image" alt="Online asynchronous courses" /></td>
</tr>
</tbody>
</table>

*Figure 8*
Moreover, students with more experience taking online courses found these learning formats to be more effective. Indeed, 89% of students who reported that their primary course modality was online (i.e., synchronous or asynchronous) found online asynchronous courses to be effective, and 88% found online synchronous courses to be effective. In comparison, 74% of students who were not primarily taking online courses found online asynchronous courses to be effective, and 80% found online synchronous courses to be effective.

**BUT MOST STUDENTS STILL PREFER IN-PERSON LEARNING.**

However, in-person learning is the most popular learning modality among our survey respondents, regardless of race, ethnicity, age, or first-generation status. Indeed, in-person instruction has consistently been the most popular modality across all three waves of surveys we have administered since 2020. Asynchronous online learning, however, was the second most popular model among this year’s respondents, again, regardless of individual demographic or first-generation background.
STUDENTS AGREE THAT EDTECH ENHANCES INSTRUCTION.

Finally, we asked students several questions about how educational technology impacts the quality of their learning experiences. Most students in our sample agreed that EdTech improved the quality of instruction, suggesting that successful use of EdTech in the classroom may be an effective way to enhance the quality of online instruction. For example, 74% of respondents agreed that educational technology makes their courses more engaging, and that educational technology helps them more effectively learn course material. Sixty-nine percent agreed that their instructors use educational technology effectively in their courses. Only 15% of respondents agreed that they wished their instructors would use less technology in the classroom.

WHY THIS MATTERS

Our data suggest that underserved groups of learners, such as first-generation college students, may prefer and be more likely to opt in to online learning formats relative to their peers. Ensuring that these students have equitable access to high-quality instructional experiences is critical for addressing inequities in college success and attainment between first-generation learners and their peers. Institutions should center the experiences of students from underserved communities when designing tech-enabled learning experiences and effectively leverage student-centered educational technologies to improve the quality of online instruction. Moreover, our finding that those with more experience taking online courses found these formats to be more effective suggests that students may be opting into the course modalities that work best for them. Institutions should continue to offer courses and programs in a variety of modalities so that students can choose course formats that best meet their needs. This finding may also reflect a “learning curve” for online instruction — students with more experience taking online courses are more likely to have developed the skills and knowledge necessary to effectively learn from these modalities. It may be beneficial for institutions to offer additional training and resources to help students who are newer to online instruction develop these skills.

STUDENT PERCEPTIONS OF EDTECH

Read the following statements and indicate the extent to which you agree or disagree with each.

[Bar chart showing:
- Educational technology makes my courses more engaging:
  - 9% No
  - 16% Neutral
  - 74% Yes
- Educational technology helps me more effectively learn course material:
  - 10% No
  - 17% Neutral
  - 74% Yes
- My instructors use educational technology effectively in my courses:
  - 13% No
  - 19% Neutral
  - 69% Yes
- I wish my instructors would use less technology in the classroom:
  - 55% No
  - 30% Neutral
  - 15% Yes]
Takeaway 4: Students report low overall usage of support resources, but tech increases their usage — particularly among first-generation learners.

Tech-enabled education will need a complement of tech-enabled learner resources. These resources are important for online learners, who deserve the same resources in-person learners have access to, but also, as our survey suggests, to expand access to and engagement with resources for all learners.

STUDENTS AGREE THAT TECHNOLOGY EXPANDS ACCESS TO RESOURCES.

Nearly 80% of students agreed the technology makes it easier for them to access resources such as tutoring, advising, mental health, and career services at their institution.

ACTUAL UTILIZATION OF RESOURCES IS LOW, PARTICULARLY FOR IN-PERSON RESOURCES.

But when we examined the frequency with which students are actually using different types of resources in person and online, we saw that utilization of resources was low across the board. However, students reported accessing resources that are offered online more frequently than those offered in person.

Forty-seven percent of students reported that they used student support services such as counseling, financial services, or IT support in person at least once in the 2022-2023 academic year. In contrast, 66% of students reported that they used these types of services online at least once in the 2022-2023 academic year.
Utilization of career services was particularly low. Twenty-four percent of respondents reported that they used career services in person at least once in the 2022-2023 academic year. Utilization of online career services was also low but slightly higher, with roughly 32% of students reporting that they used online career services at least once in the 2022-2023 academic year.

We saw a similar pattern for academic support services such as tutoring, academic advising, or the writing center. Forty-one percent of students reported that they accessed these types of services in person and 48% reported that they accessed these services online at least once in the 2022-2023 academic year.

### UTILIZATION OF CAREER SERVICES

**During the 22-23 academic year, about how often did you access career services in person and online?**

- **Online**
  - Used at least once: 31.7%
  - Did not use: 68.3%
- **In person**
  - Used at least once: 23.5%
  - Did not use: 76.5%

**Figure 14**

### UTILIZATION OF ACADEMIC SERVICES

**During the 22-23 academic year, about how often did you access academic services (e.g., tutoring, academic advising, writing center services) in person and online?**

- **Online**
  - Used at least once: 47.8%
  - Did not use: 52.2%
- **In person**
  - Used at least once: 40.6%
  - Did not use: 59.4%

**Figure 15**

### FIRST-GENERATION STUDENTS ARE SLIGHTLY MORE LIKELY THAN THEIR PEERS TO ACCESS ONLINE SERVICES.

First-generation students, again, seem more likely to engage with online resources. When we examined mean levels of in-person and online support resource utilization, we saw that first-generation students were significantly more likely than their peers to use all three types of online resources, even after controlling for institution type.

### ACCESSING STUDENT SERVICES

**During the 22–23 academic year, about how often did you access student support services in person and online?**

- **Online**
  - Mean level (First-gen): 2.18
  - Mean level (Continuing-gen): 2.04
- **In person**
  - Mean level (First-gen): 1.89
  - Mean level (Continuing-gen): 1.85

**Figure 16**
**ACCESSING CAREER SERVICES**

During the 22–23 academic year, about how often did you access career services in person and online?

![Figure 17](image)

**ACCESSING ACADEMIC SERVICES**

During the 22–23 academic year, about how often did you access academic services in person and online?

![Figure 18](image)

**WHY THIS MATTERS**

Students who use student support services are more likely to ultimately earn a college degree than those who do not.8, 9, 10 However, most students in our sample are not utilizing the resources available to them. Students overall, and first-generation students in particular, were more likely to access online student support services than those offered in person, reporting that technology makes it easier for them to access resources. To increase resource utilization, institutions should expand the availability of online and technology-enabled student supports and rethink existing, passive models of resource utilization to those that actively engage learners throughout their educational journeys.

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Strategies to improve the student digital experience

Findings from the CIN Student EdTech survey make it clear that technology can play a pivotal role in enhancing student success and addressing inequities in an increasingly digital higher education landscape. To achieve these aims, however, higher education institutions must embrace new instructional models that center the student experience and meet the needs of diverse groups of learners.

1 EMPOWER UNDERSERVED LEARNERS TO EFFECTIVELY ENGAGE WITH NEW AI TECHNOLOGIES, RATHER THAN PROHIBITING THEIR USE.

ChatGPT and other AI tools are not going away. And our data show that the adoption of these tools has been faster and greater among more privileged populations of students. Rather than ignoring these tools or prohibiting their use, institutions must empower diverse groups of learners to engage with them in ways that enhance the learning experience. Previous research from WGU Labs has shown that students are more frequently using ChatGPT to simplify complex topics, brainstorm creative ideas, and conduct research rather than to “cheat.” Institutions should adopt policies that encourage these productive uses of AI, and faculty should explicitly incorporate these uses into their instruction. According to OpenAI, 80% of Fortune 500 companies have already begun using ChatGPT since its rollout in late 2022. Unless all students are given the opportunity to learn and engage with these tools, underserved learners will be left behind and unprepared for future careers in which effective utilization of AI tools is likely to be an increasingly important skill.

2 PRIORITIZE EDETECH THAT CENTERS THE NEEDS OF STUDENTS TO AVOID TECHNOLOGY FATIGUE.

When considering new EdTech tools, institutions should prioritize those that center and bring value to the learner experience. Previous research from WGU Labs has shown that the primary EdTech decision-makers are often individuals who sit furthest from the classroom. To ensure alignment of EdTech tools with the needs of students, institutions should regularly seek out feedback and perspectives from diverse groups of students and faculty. In addition, conducting regular tech audits will allow institutions to identify redundancies, address shortcomings, and incorporate emerging technologies that align with critical student needs. This iterative process helps prevent technology fatigue and underscores the role of technology as a facilitator, not a barrier, to effective learning.

3 LEVERAGE EFFECTIVE EDUCATIONAL TECHNOLOGY SOLUTIONS TO IMPROVE THE QUALITY OF ONLINE LEARNING.

Educational technology, when thoughtfully integrated, can augment conventional teaching methods by creating interactive learning environments, personalizing instructional experiences, and fostering belonging and engagement. Students in our sample overwhelmingly viewed EdTech as adding value to their instructional experiences. To ensure that students learning in all course modalities — including online — have effective experiences, institutions should leverage effective, student-centered educational technology to increase course effectiveness and enhance student learning.
However, we caution that these technologies must be integrated thoughtfully and with ample feedback from students and faculty to ensure they do not create additional technology fatigue. As part of this, it will be critical to ensure that students and faculty are given sufficient support, training, and resources to effectively engage with these technologies. Our research also found that the quality gap between in-person and online learning experiences was smaller among students who reported that their primary modality was online. Future research efforts should examine what makes online learning experiences more effective for these students — are these students more likely to have developed the skills needed to succeed in online learning? Are they opting into institutions and faculty that are more effective at delivering online instruction? Understanding these factors will help identify strategies to improve online learning experiences for all students.

**Rethink Institutional Approaches to Student Resources.**

The transition to tech-enabled instruction will not be successful unless students have access to the wraparound support needed for successful degree completion. Data from this year’s survey make it clear that students are largely not using the resources available to them but online access can help. We found that students overall and first-generation college students, in particular, were more likely to use online resources compared to in-person resources. Institutions should continue to offer resources in a variety of modalities so that students are able to access them in ways that fit their needs. However, while our data suggest that providing resources in multiple modalities is important to creating equal access, the paltry reported use of existing resources suggests that adding online options alone won’t be enough to transform engagement in these resources. Any efforts to modernize the suite of resources need to go beyond tech enablement and consider additional barriers to student engagement, such as lack of student awareness and relevance of available resources.
Conclusion

As higher education continues the transition to technology-enabled learning, understanding how students from diverse backgrounds and identities are experiencing and perceiving the transition is critical. This report offers insights into the critical ways that this transition is impacting students — and offers recommendations to improve their experiences moving forward.

Students in our sample — and first-generation college students in particular — are excited about the integration of technology in the learning environment. Moreover, students’ responses showed that many of the levers of a successful tech-engaged higher-ed sector are in place. However, institutions must continue to expand access to new AI technologies, address increasing levels of technology fatigue, and provide effective online instruction and support services. Without addressing these challenges, tech-enabled instruction has the potential to, once again, leave underserved students behind.
SURVEY APPROACH AND METHODOLOGY

In April of 2023, the CIN research team emailed surveys to more than 30,000 students across nine CIN member institutions. These post-secondary institutions included community colleges, private and public four-year institutions, and primarily online, not-for-profit colleges. The survey contained 54 questions about students’ experiences with educational technologies and online learning. Specific topics included attitudes toward the future of higher education, attitudes toward tech-enabled learning, technology fatigue, sense of belonging, access to in-person and online student support resources, and experiences with new generative AI technologies. The survey also included several demographic questions, which are shown in Figures 21-26. Students were compensated $15 for participating in the survey. Our final sample consisted of 3,143 students. Sixty-eight percent of respondents were enrolled at a four-year college or university, 19% were enrolled at a community college, and 14% were enrolled at a primarily online college.

SURVEYED SCHOOL POPULATIONS

Figure 19
WHO TOOK OUR SURVEY?

We compared the demographic characteristics of our sample with the overall populations of students at each participating institution, according to available Integrated Postsecondary Education Data System (IPEDS) data. This comparison allows us to determine how representative our sample of students were of the larger populations of students at participating CIN institutions. These comparisons revealed that women were overrepresented in our sample compared to IPEDS data, while men were underrepresented (see Figure 21). White students were also overrepresented in our sample compared to available IPEDS data, whereas Black, Hispanic or Latinx, and Asian students were underrepresented.

SURVEYED STUDENT GENDERS

![Figure 21](image-url)
Although racial diversity in our sample was limited compared to the broader populations in participating schools, our student sample included diverse representation in terms of age, social class, academic standing, and a variety of other factors (see Figures 23-26). Nearly 40% of students in our sample were first-generation college students (i.e., neither of their parents had attended college).
Students were also diverse in terms of academic standing, with the sample roughly evenly divided across levels of current academic credits:

**SURVEYED STUDENT ACADEMIC STANDING**

<table>
<thead>
<tr>
<th>Statement</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not provided</td>
<td>2.7%</td>
</tr>
<tr>
<td>One or both my parents/guardians attended (but did not graduate from) a 4-year university/institution</td>
<td>10.4%</td>
</tr>
<tr>
<td>Neither of my parents/guardians attended a 4-year university/institution</td>
<td>38.8%</td>
</tr>
<tr>
<td>One or both of my parents/guardians graduated from a 4-year university/institution</td>
<td>48.1%</td>
</tr>
</tbody>
</table>

The mean age of respondents was 25.99, and the median age was 22. The oldest participant was 79, and the youngest participant was 18.

**SURVEYED STUDENT AGES**

The chart shows the distribution of ages among the surveyed students. The modal age range is 20-29 years old, with a peak count of approximately 1000. The oldest age in the data is 79, and the youngest is 18.
The majority of participants in our sample were working at least part-time while completing their studies: 42% were working part-time and 26% were working full-time. Thirty percent of the sample was not currently working.

**SURVEYED STUDENT EMPLOYMENT**

![Bar chart showing the distribution of current employment status among surveyed students.](image)

- **Not provided**: 2.3%
- **Full-time**: 25.8%
- **Not currently working**: 30.0%
- **Part-time**: 41.9%

*Figure 26*
About Our Work

WGU Labs is the nonprofit EdTech consulting, incubation, research, and design arm of Western Governors University (WGU), where our mission is to identify and support scalable solutions that address the biggest challenges in education today.

ABOUT THE COLLEGE INNOVATION NETWORK

The College Innovation Network (CIN) at WGU Labs is a network of higher education institutions committed to navigating uncertainty in an increasingly tech-enabled world. We leverage technology and community to promote belonging and engagement in the modern higher education environment, building highly engaged learning communities from enrollment through graduation - and beyond.

ABOUT THE CIN EDTECH SURVEY SERIES

CIN is in a unique position to learn about the student, faculty, and administrator experience with EdTech by leveraging the diversity of institutions within the Network. The CIN EdTech Survey Series is administered across the Network three times a year with the goal of generating valuable insights to help institutions understand how faculty and students experience EdTech. These insights can be applied to improve faculty and student experiences, and ultimately bolster the impact of EdTech across the sector. As CIN continues to grow, so will the impact of the CIN EdTech Survey Series.

Queries about CIN can be addressed to cin@wgulabs.org
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The support of generous donors who believe in the mission of CIN make this work possible. If you are interested in learning more, please contact us at cin@wgulabs.org.

REPORT CONTRIBUTIONS

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This report was designed, analyzed, and written by Stephanie Reeves, Betheny Gross, and Omid Fotuhi, with editing support from Holly Wallace, Natalie Berkey, and Erika Wandsneider, visual design by CallyAnn Hamilton, and project management by Stacee Pratt.