Deciphering a New Generation of Learners

High-school and college students' expectations of their educational experience during and after Covid-19

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After a year of attending at least most of their classes remotely, high-school and college students appear to be more likely now to accept online learning as a part of their education going forward. They also believe that colleges will help them become digitally skilled workers once they have completed a degree.

A *Chronicle* survey of 401 high-school students and 400 college students in the United States asked several questions about the students' preferred ways of learning, their college plans, and how the Covid-era preponderance of online education has affected their attitudes on learning. It also asked whether they believe a college education will prepare them for the high-tech jobs of the future.

A relatively high percentage of students — 28 percent of high-school students and 27 percent of those in college — say they prefer online learning to other types of education. That level of preference is a good bit higher than research conducted by other entities prior to and early on during the pandemic.

More than half of students say they are now taking classes virtually, while only 14 percent of high-school students and 12 percent of college students report receiving in-person instruction. Around one in three in each group reported receiving a combination of both: hybrid education.

In-person education remains the most popular learning method. Forty-three percent of college students and 41 percent of high schoolers prefer it, and 95 percent of both groups report that they view learning face to face at least somewhat positively. But online education, the least desirable of the three major groups in several previous studies, has inched up to become the second choice for

high-school students, with hybrid learning tying online education for second place among college students.

A vast majority of students — around 70 percent over all — say that virtual learning is a positive or somewhat positive experience. Nearly two in three say they would take courses online, post-pandemic, if they had the opportunity — another sign that online education is becoming an accepted part of the higher-ed landscape.

Six in 10 high-school students say that a college's decision to offer remote-only classes during the semester next fall would not be likely or would be less likely to impact their probability of attending that institution. While other studies have found that Covid-19 may have caused many students to postpone or waylay college plans, 80 percent of the high schoolers in the *Chronicle* study reported plans to attend college. Only 5 percent said they do not plan to college, while nearly six in 10 say they plan to attend college immediately after graduating high school.

Student responses demonstrate a high degree of confidence in colleges' ability to provide them with high-quality remote-learning opportunities: 82 percent of high-school students and 74 percent of college students say institutions are somewhat prepared or well prepared to do so. College instructors also receive a vote of confidence. Three in four high schoolers and 64 percent of college students say that college instructors are somewhat prepared or well prepared to teach high-quality online courses.

In a series of answers to questions on digital-skills training, students say that colleges will be instrumental in the acquisition of high-tech competency. More than two-thirds of students in each group say they expect to learn tech skills in college. Nine in 10 high-school students and 83 percent of those in college believe that

institutions are capable of imparting digital-technology proficiency, while 84 percent of the former and 73 percent of the latter say that college instructors are prepared to teach those skills.

This survey was commissioned by *The Chronicle* and conducted by Harris Insights & Analytics in February. It was underwritten by Adobe. All respondents are ages 16 to 22. (For more information on student demographics, see Methodology on page 22.)

The vast majority of students surveyed — 88 percent of high schoolers and 72 percent of those attending higher-ed institutions — attend public schools. Of the college respondents, 73 percent are from four-year institutions and 27 percent are from two-year colleges, which is roughly representative of U.S. college students.

n spring of 2020, the threat of Covid-19 arrived on campuses mid-semester, before many colleges had developed a wide array of quality online offerings. Forced to react to the pandemic, colleges began converting courses at an astonishing rate, working feverishly toward what many experts believe to be the curriculum to come: virtual learning offered whenever students need or want it.

As colleges began to make that switch under pressure, they ran up against some age-old notions of what the college experience should be, how higher education could be delivered, and how they could best attract and retain students.

The results of the *Chronicle* survey show that the landscape of student expectations is changing in favor of more remote learning, and against some old assumptions about college life. Though students remain concerned about the cost of college during the financially stressful pandemic era, as well as the quality of their lives once they graduate, survey respondents believe that colleges can prepare them for a high-tech future, offer more courses online, and deliver high-quality remote course options.

Though online learning remains the lowest preference for students among the three choices the survey offered — online learning, face-to-face learning, or a hybrid of the two — a year of enforced online learning may be having an effect on student attitudes.

"Even amidst a pandemic, most learners in your survey had very or somewhat positive experiences with virtual learning," says Penelope Adams Moon, director of digital learning and engagement at the University of Washington at Bothell. "It's pretty remarkable, given how quickly faculty had to move to remote teaching."

More than half of high schoolers and college students say they prefer either an all-virtual (28 percent and 27 percent, respectively) learning experience or a hybrid situation (24 percent and 27 percent). In 2019, only 9 percent of students preferred learning environments that were mostly or completely online, according to a study of undergrads by Educause, a research organization that explores the intersection of IT and higher education.

"The pandemic is serving as a catalyst to changing student attitudes toward online learning," says D. Christopher Brooks, director of research at Educause.

"The survey results are a reflection of what we're hearing on campus," adds Evie Cummings, director of UF Online, the remote-education service at the University of Florida. "This survey says colleges need to be modern, multifaceted institutions that offer the flexibility of several types of learning. And results show that students have a high expectation that colleges are capable of delivering on that."

Colleges have their own set of anxieties, including declining enrollment and financial viability. The number of high-school graduates who immediately enrolled in colleges last year declined by nearly 7 percent, according to a study by the National Student Clearinghouse Research Center — a reminder of the challenges Covid-19 has posed to colleges.

Survey results likely won't smooth those anxieties. Though eight in 10 high schoolers say they plan to attend college, 22 percent say they will wait one or more years to enroll.

Still, many respondents evince a belief that college is important and that institutions are very capable of helping them achieve the future they have envisioned. More than two-thirds of both high school and college students say they expect to learn digital skills while at college. More than 80 percent say colleges are prepared to teach them those skills.

> ## "The pandemic is serving as a catalyst to changing student attitudes toward online learning."

A similar percentage believe that colleges are ready to create and offer high-quality virtual courses.

"What this points to is that learners' experiences over the past year, while by no means ideal, have led them to perceive value in learning online and in asynchronous course materials," says Moon. "That rebuts the popular notion that everyone wants to return to a time when all we had to offer was face-to-face learning."
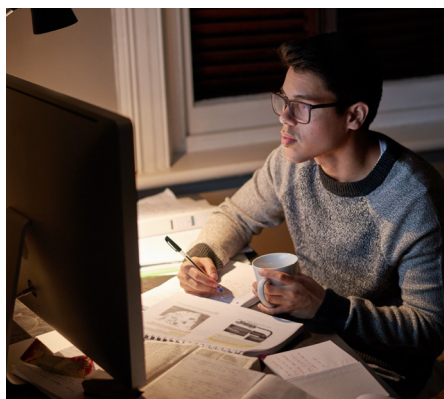
Online Learning: A Growing Acceptance

A year of learning remotely appears to be increasing students' acceptance of online education. While in-person learning remains the favorite for both high-school and college students, a strong majority now view virtual education in a positive light. A sizable majority say that colleges and their instructors are prepared to offer and teach high-quality online courses. High-school juniors and college freshmen and sophomores report more acceptance of online education than high-school seniors and college juniors.

Changing Views of the College Experience

The pandemic — and the prospect of more online learning — has had an effect on students' college plans. While four in five high-school students say that college is part of their future, 22 percent of the total say they will take at least one year off after graduating. The cost of online education is an issue for some students and their parents and may also be having an effect on student-enrollment decisions. More than half of students surveyed say that a college's decision to teach remote-only classes this coming fall would be less likely or not likely to be a determining factor in their decision to attend that institution.

Colleges' Role in Teaching Tech Skills

Students overwhelmingly say that colleges will play a major role in preparing them for the high-tech skills they will need to take part in tomorrow's workforce. A vast majority expect to be well equipped with tech skills upon college graduation. Still, students may not be as digitally adept as many colleges have come to believe. To get students up to speed and close the digital divide, institutions may need to help students purchase tech devices and offer them more training on how to use computers and basic software.
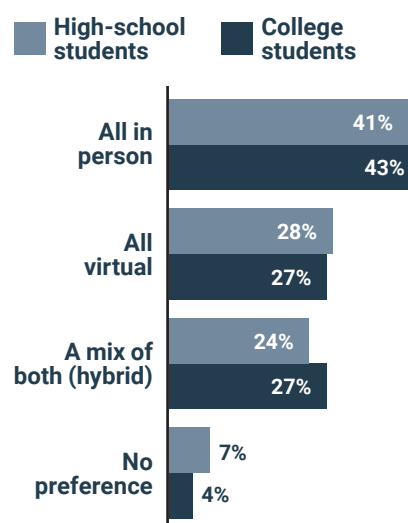
Online Learning: A Growing Acceptance

Student attitudes toward virtual education have changed during the Covid year. More students see online learning as a viable part of their education, and most report seeing some positive aspects in taking courses remotely.

With nearly 90 percent of high-school and college students reporting that they are now receiving hybrid or virtual education, the tide is now turning more in favor of courses that are not taught in person.

But not entirely. Students still prefer face-to-face learning situations over all others, with 95 percent of all respondents seeing in-person instruction as at least a somewhat positive experience. Eighty percent of

Which is your most preferred format for taking classes?

High-school students   **College students**

	High-school students	College students
All in person	41%	43%
All virtual	28%	27%
A mix of both (hybrid)	24%	27%
No preference	7%	4%

Source: *Chronicle*/Harris Insights & Analytics survey of 801 high-school and college students.

students saw hybrid learning positively, and virtual-learning-only experiences were cited positively by around 70 percent of all students.

Experts say that the numbers for remote learning are higher than they had expected. Even as survey respondents in a separate comments section voiced concerns about the cost of education, as well as its value to their future, the survey makes clear that they see colleges as a vehicle for learning remotely. More than seven in 10 respondents say that colleges are at least somewhat ready to offer quality online courses. And three in four high-school students say that college instructors are prepared to teach those courses.

"There's a greater familiarity now with online education and maybe an idea that colleges can do this right, or at least better than high school," says Cummings, from the University of Florida.
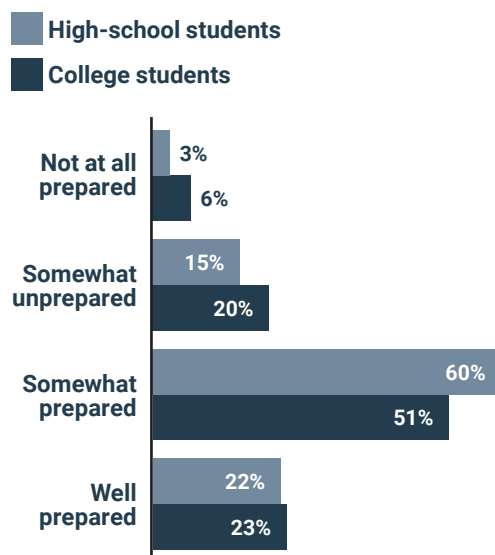
Students and some faculty members are starting to see some benefits to virtual education, she adds. They spend less time commuting, parking, traveling from class to class, and navigating various on-campus exigencies. Students who can't afford to live on campus are spared financial worry — something expressed often in the student comments section of the survey — by taking many, if not all, courses online.
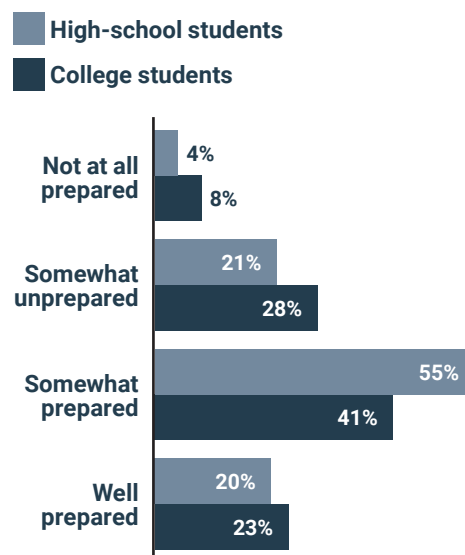
Virtual education can often fit a student's style of learning. That preference may have changed during the past year.

"I had definitely imagined that my college experience would be face to face," says Maddie Mueller, a high-school senior at Carver Center for Arts and Technology, a public arts school in the Baltimore suburbs. (Mueller, as with the other students quoted in this report, did not take part in the survey.) "But by going to school remotely this past year, I've seen how it makes it easier for me to go at my own pace. Sometimes, I'd get bored or frustrated with in-person classes. I see now that I can make friends at school online as well."

How prepared do you think **colleges** are to create and offer high-quality virtual options?

■ High-school students
■ College students

	High-school students	College students
Not at all prepared	3%	6%
Somewhat unprepared	15%	20%
Somewhat prepared	60%	51%
Well prepared	22%	23%

How prepared do you think **college instructors** are to teach high-quality virtual courses?

■ High-school students
■ College students

	High-school students	College students
Not at all prepared	4%	8%
Somewhat unprepared	21%	28%
Somewhat prepared	55%	41%
Well prepared	20%	23%

Source: *Chronicle*/Harris Insights & Analytics survey of 801 high-school and college students.

Mueller plans to enter a local community college to study English in the fall. She'd prefer in-person classes "for subjects I struggle with" and online experiences for the rest. "I'm definitely looking forward to the flexibility," she adds.

Younger survey respondents at both the high-school and college level tend to have a more sanguine view of online and hybrid education, with 75 percent of 11th graders and 77 percent of college freshman seeing virtual learning at least somewhat positively, compared with 65 percent of high-school seniors and 64 percent of college juniors who view remote experiences in the same light.

> ## "There's a greater familiarity now with online education and maybe an idea that colleges can do this right, or at least better than high school."

"As a freshman and sophomore, I liked the idea of waking up in my dorm room and starting a class on my computer," says Millicent Auma, a senior at Bryn Mawr College. "But now that I've had a year when I was forced to learn online, I feel the need to see people and learn with them." Auma prefers a hybrid situation, one in which she can meet with classmates to collaborate and be social, while tapping some online courses for the sake of convenience.

"The survey shows that the longer a student has been on campus, the less they think of online," says Kevin Gannon, director of the Center for Excellence in Teaching and Learning at Grand View University. "Many of them have had to experience the emergency pivot from primarily face-to-face learning to online" in spring 2020. "They haven't had the college experience they had sought out or become used to."

Though more students say that colleges are capable of delivering quality education online, they may be grading colleges on the curve. Institutions' ability to deliver remote-learning opportunities during Covid-19 might make it appear as though they are up to the task. But as expectations of students increase, will they maintain that view?

While some studies show that grades over all have held steady or improved during an era marked by increasing reliance on virtual learning, some say those results may be skewed by the relaxed requirements found in many Covid-era classes.

"I wonder if student expectations will change once faculty ask more of them and of their coursework, post-pandemic," says Joshua Smith, dean of the College of Education at Loyola University Maryland. "Their thinking regarding virtual learning might change once they're expected to do a normal amount of work online during a more normal year."

If that hypothesis proves true, it could reverse the apparent gains in popularity virtual learning has made among students.

"We could see a regression of the survey's numbers once face-to-face learning becomes widely available again," says D. Christopher Brooks, from Educause. "Some of our own results in the past have shown that student preference is often tied to their prior exposure. It's possible that students might want to 'return to normal' rather than face more online learning."

Changing Views of the College Experience

A top student at her high school, Beatrice Irwin envisioned leaving her home near Baltimore for college right after graduating. Then Covid-19 hit, putting some dents in her best-laid plans to study film in 2021-22. Faced with the prospect of taking her freshman classes online, Irwin demurred, deciding to take a gap year instead.

"I was in [high] school online for the last couple of months, and I didn't get much out of it," says Irwin, who graduated with her class virtually in May of 2020. "For me, in-person classes work best — the community, being surrounded by my fellow students, working

Four in five high-school students say that college is part of their future, while 22 percent of the total plan to take at least one year off after graduating.

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toward a common goal. All that is very important to me."

The gap year has given her time to think about what she wants to do with her college education. She has changed her prospective major to sociology, realizing that her interest in people would likely sate her curiosity for longer than a film program would.

"The situation definitely made me reassess my priorities. I had taken for granted how hard institutions work to create a community and how they can become disjointed when that community is disrupted," she says.

Irwin's story echoes a concern of college leaders and parents: potential students who, when faced with the prospect of taking courses exclusively online, won't be as likely to enroll immediately for college classes.

The *Chronicle* survey quantifies those concerns. While four in five high-school students say that college is part of their future, 22 percent of the total plan to take at least one year off after graduating.

"Online learning has clearly played a role in enrollment decline," says Doug Shapiro, executive director of the National Student Clearinghouse Research Center. Shapiro's organization found that 2020 fall enrollment was down around 7 percent from previous years. That number was considerably higher for low-income students and ones from minority groups.

> **"Unfortunately, students don't know enough to discriminate when it comes to the quality of remote education, and most high-school and college classes are just average."**

Beyond a student's preferred style of learning, the financial considerations of gearing up for online learning play a role, too. A Barnes & Noble College Insights study in February found that 94 percent of college students believe they should be charged less tuition for online courses.

"Families must pay more in bandwidth, the cost of devices, and other tech — especially if they have multiple college students in a single household," says Shapiro. "Online learning costs more."

Colleges often feel as though they are in thrall to a parent's view of what college education should look like, which might include exclusively face-to-face learning, on-campus housing, and a surfeit of college activities outside of class, experts say. Yet, as the survey results show, many of their children are open to some different ideas, such as learning more online. Many now see remote learning as a large part of college life now and in the future.

While this may be good news now that higher ed has begun to ramp up its online-education programs in earnest,

Since the pandemic, remote learning has become more prevalent. Once the pandemic ends, how likely would you be to take virtual courses in the future (in college and beyond) if you had the opportunity to do so?
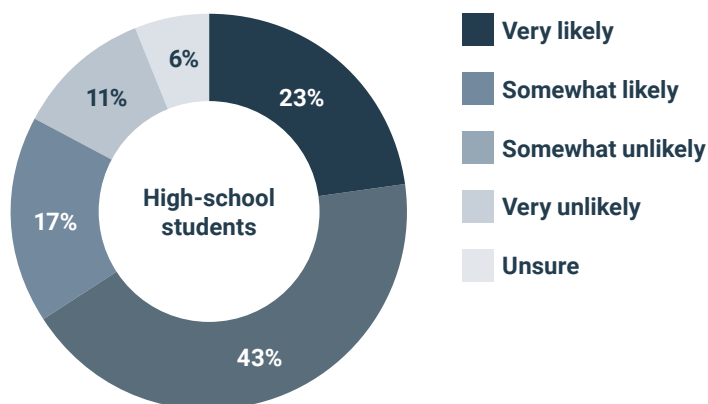
High-school students

- Very likely — 23%
- Somewhat likely — 43%
- Somewhat unlikely — 17%
- Very unlikely — 11%
- Unsure — 6%

66% of high-school students said they were at least somewhat likely to take virtual classes in college.

Source: *Chronicle*/Harris Insights & Analytics survey of 801 high-school and college students.
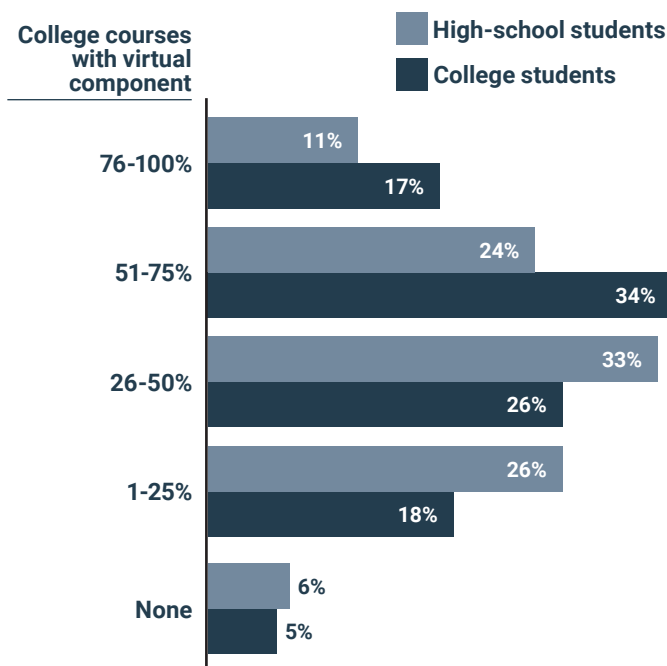
college leaders shouldn't take too much solace in students' ratings of their online experiences, some experts say.

"Unfortunately, students don't know enough to discriminate when it comes to the quality of remote education, and most high-school and college classes are just average," says Smith, the Loyola Maryland dean. Many students he talks with are "lukewarm" about online education about taking so many courses online, he adds.

"A lot of online education out there is not very good," agrees Kevin Gannon, from Grand View University. "Many of those classes are being taught by under-resourced adjuncts who don't get the support of their institutions."

Still, more than half of students surveyed say that a college's decision to teach remote-only classes this coming fall would be less likely or not likely a determining factor in their decision to attend that institution.

After the pandemic ends, what percentage of college courses would you expect to have a virtual component?

College courses with virtual component

■ High-school students
■ College students

College courses with virtual component	High-school students	College students
76-100%	11%	17%
51-75%	24%	34%
26-50%	33%	26%
1-25%	26%	18%
None	6%	5%

Source: *Chronicle*/Harris Insights & Analytics survey of 801 high-school and college students.

"Even if students are forced to remotely learn, they'll still go ahead and enroll. That aspect of the survey was surprising to me," says Shapiro. "That shows us that they're willing to swap some level of learning for safety and that they're still scared of the virus."
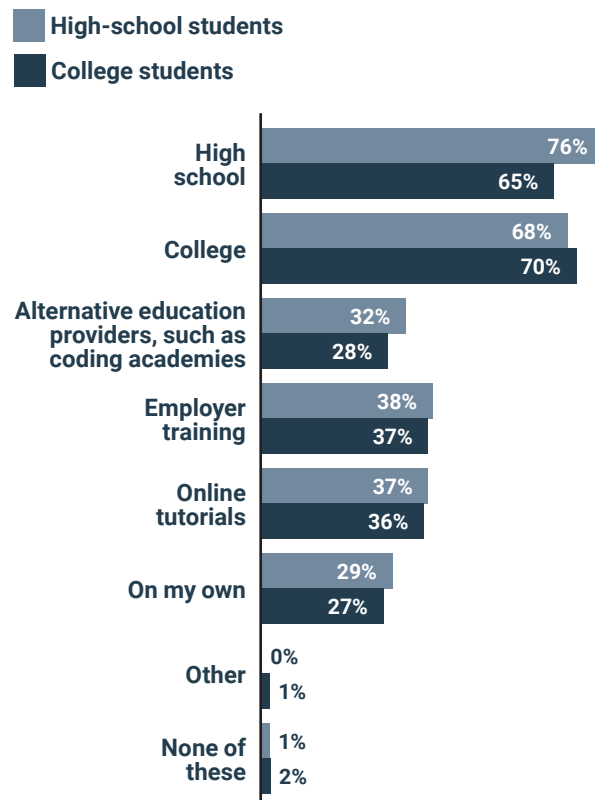
Colleges' Role in Teaching Tech Skills

Students believe strongly that digital-tech skills will be central to the jobs they will take as adults, according to survey results. An overwhelming number of high schoolers — 86 percent — say that high-tech skills will be more important to the jobs of tomorrow than they already are in today's work world. Most college students (82 percent) agree.

Roughly seven in 10 respondents say they will learn those skills in college, more so than via employer training, online tutorials, or learning them on their own. A very high number — 89 percent of high schoolers and 83 percent of college students — say that colleges are at least somewhat prepared to

Where do you expect students to learn the digital-technology skills they will need in the future? Select all that apply.

■ High-school students
■ College students

	High-school students	College students
High school	76%	65%
College	68%	70%
Alternative education providers, such as coding academies	32%	28%
Employer training	38%	37%
Online tutorials	37%	36%
On my own	29%	27%
Other	0%	1%
None of these	1%	2%

Source: *Chronicle*/Harris Insights & Analytics survey of 801 high-school and college students.

teach digital skills. A smaller majority of students in each group believe that college instructors are prepared to teach them.

"It's good to see that students think they can learn those things at college instead of going off to a Google bootcamp," says Evie Cummings, from the University of Florida.

When the time comes for work, about nine in 10 students say they will be at least somewhat prepared for those high-tech jobs.

At the same time, there is a growing need for colleges to keep up with the ever-accelerating pace of technology. Students will be expected to as well, though they may enter college unprepared to use existing tools.

A section of the survey asked students to write their thoughts about technology in the classroom and the digital skills they'd like to learn. In that section, many student responses centered on older tools, such as Microsoft Excel or Word. For some experts,

those responses show a gulf between what colleges think students' digital-competency levels are and reality.

"Our assumptions about where students are regarding technology are often wrong. They aren't as digitally native as we think, just as faculty aren't as out of it as we assume. Individual faculty need to be able to work with students so they can learn how to use those tools," says D. Christopher Brooks, from Educause.

As colleges locked down during the pandemic, many on-campus services — tech labs, libraries, access to high-speed internet — also closed, were subject to fewer hours of availability, or were made totally inaccessible. Students' tech skills may be suffering as a result. "The question is, how are we teaching these critical digital skills? I worry that in an online-only era, we may not be doing it as well," says Kevin Gannon, from Grand View. Colleges should also consider gathering more data on students' tech-readiness, he adds.

Others say that colleges should do even more. To close the digital divide and make sure that all students can learn remotely, colleges should offer stipends so students can buy the technology they need to study.

"We hear way too many horror stories about students going to school on their cellphones," says Doug Shapiro, from the National Student Clearinghouse.

When it comes to the technologies used to teach courses or the digital skills you wish to learn, what would you like college leaders to know about what you expect from a college education?

- "How to better do presentations."

- "A college education should teach technology skills to all students regardless of their major. Acquiring good technology skills are important for the future."

- "I expect a good education virtually asynchronous and mostly go on campus just for labs. I expect the asynchronous virtual learning to be top quality and much better than in-person classes."

- "Teach how to use a computer."

- "How to fix the computer when it freezes."

- "How to use Excel like a pro."

- "How to use Microsoft because it is very important."

- "I expect more information on Microsoft programs such as PowerPoint, Excel, and Word. More information on how to share content and export into PDFs."

Source: *Chronicle*/Harris Insights & Analytics survey of 801 high-school and college students.

The *Chronicle* survey found that a growing number of high-school and college students see online learning in a favorable light. Though the highest percentage of students still prefer face-to-face learning, nearly three-fourths of students say that virtual learning is a positive or somewhat positive experience.

Students also believe that colleges and faculty are prepared to help them develop the high-tech skills they will need to do the jobs of the future.

The pandemic has caused many students to rethink their college plans. Yet four in five high-school students plan to attend college in the future. And more than half of students surveyed say that a college's decision to teach remote-only classes this coming fall would be less likely or not likely to be a determining factor in their decision to attend that institution.

One takeaway for the *Chronicle*'s panel of experts is that colleges need to continue the online-ed upgrade that the pandemic forced them to start. Institutions should channel that momentum toward creating high-quality remote courses and programs to ramp them up even further.

At the same time, colleges should become even more mindful of students' increasing need for flexible learning models and help them obtain tech tools and the tech expertise with which to use them.

Students' changing attitudes toward learning represent an opportunity for colleges to deliver more of what they need.

"All in all, it is nice to see a great openness and even a positive response to virtual learning," says Evie Cummings, from the University of Florida. "Students expect a lot from college, and they believe we can deliver. To me, that's another indication that colleges need to up their game when it comes to offering quality in their online classes. We can't let our curriculum get stale."

METHODOLOGY

This survey was commissioned by *The Chronicle* and conducted by Harris Insights & Analytics in February. It was underwritten by Adobe. All respondents are ages 16 to 22.

The vast majority of students — 88 percent of high schoolers and 72 percent of those attending higher-ed institutions — attend public schools. The rest attend private high schools, colleges and universities. Of the college respondents, 73 percent are from four-year institutions and 27 percent are from two-year colleges, which is roughly representative of U.S. college students.

The *Chronicle* survey included 401 high-school students. Fifty-seven percent are seniors and 43 percent were juniors.

Of the 400 college students surveyed, 30 percent are sophomores; 27 percent, freshmen; 22 percent, juniors; and 21 percent, seniors.

A majority of high schoolers (73 percent) and college students (66 percent) surveyed are white. Of the total group surveyed (including whites), 23 percent of high-school students and 20 percent of college students identify as Hispanic people.

Seventeen percent of college students surveyed are Black, as are 16 percent of the high-school students surveyed. The rest of the respondents identify as Native American or Alaskan Native, Arab, Asian, Chinese, Filipino, Japanese, Korean, Pacific Islander, South Asian, Vietnamese, or "other."

Among U.S. geographical regions, the South is best represented in the survey, with 38 percent of high-school students and 37 percent of college students.

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