SUDDENLY ONLINE

A NATIONAL SURVEY OF UNDERGRADUATES DURING THE COVID-19 PANDEMIC

Digital Promise
Accelerating Innovation in Education

every**learner**
everywhere

Tyton PARTNERS

TABLE OF CONTENTS

College students' satisfaction dropped sharply after schools shifted to all-online courses during the COVID-19 pandemic. Undergraduate students struggled to stay motivated and missed receiving feedback from instructors and collaborating with fellow students. Significant numbers of students had problems with their internet connections, software, or computing devices—serious enough to impede their participation in their courses. Still, most students did not attribute their struggles to poor instructor preparation or limitations inherent in online learning. Moreover, online courses that used a larger array of recommended online teaching practices had much higher student satisfaction levels than the courses that used fewer of them. This report describes these and other results from Digital Promise's national, random-sample survey of more than 1,000 college students whose coursework moved from in-person to completely online this spring.

THE COVID-19 "EXPERIMENT"

Colleges and universities responded to the COVID-19 pandemic by moving their courses online. Large numbers of faculty who had never taught (or even learned) online before were suddenly responsible for teaching this way to students, many of whom had not learned online before and who had not been expecting to do so when they signed up for their course. Additionally, low-income students are more likely to have aged or limited computing devices and poorer home internet access, putting them at a potential disadvantage relative to peers from more affluent backgrounds. Moreover, prior research on online learning suggests that students with weaker academic backgrounds learn better in face-to-face classes than in fully online courses.

Colleges, instructors, and students had to operate in "triage mode" in spring 2020. There was not time to build online courses using research-based practices for effective learning online. In addition, out of equity concerns around putting some students at an unfair disadvantage, some colleges and universities discouraged their faculty from using learning technologies and online learning practices requiring fixed-time participation in class activities or broadband internet.

No one would have chosen to move postsecondary courses completely online in spring 2020, but we can at least extract insights from this crisis, which revealed the magnitude of underlying equity gaps as well as strengths and weaknesses in higher education's preparation for delivering instruction online. Gathering and synthesizing these lessons can inform efforts to improve plans for continuity of instruction in the wake of ongoing and future disruptions, as well as the allocation of resources to support a resilient and equitable infrastructure for learning online.

SURVEY SAMPLE & METHOD

Digital Promise and Langer Research Associates (https://langerresearch.com) developed the "Survey of Student Perceptions of Remote Teaching and Learning" to capture the experiences of undergraduates taking courses that transitioned to online instruction in response to the COVID-19 pandemic. The survey explores the nature of college courses as they were taught during the COVID-19 outbreak, the pervasiveness of various challenges undergraduates faced after the transition to remote instruction, and course features associated with higher levels

of student satisfaction. Data analyses compared experiences of students from low-income, underrepresented, or rural backgrounds to those of students with none of these characteristics.

This survey was administered to a random national sample of 1,008 undergraduates, age 18 and older, who were taking college courses for credit that included in-person class sessions when the COVID-19 pandemic hit and had to finish the course by learning at a distance. The sample included 717 students attending four-year colleges and 271 students attending two-year colleges. Results have a margin of sampling error of 3.6 points for the full sample.

Data were collected between May 13 and June 1, 2020, with sampling and data collection by Ipsos Public Affairs via its online, probability-based KnowledgePanel®, which administers internet-based surveys to randomly recruited participants. Because STEM courses are typically the most challenging for students, respondents were asked to answer the survey questions for a STEM course if they were taking one. Students who were taking more than one STEM course were asked to respond for the one they thought was most important for their future goals. Similarly, students who were not taking any STEM courses were asked to respond for the non-STEM course they considered most important for their future goals.

ONLINE INSTRUCTION, DISTANCE LEARNING, OR REMOTE INSTRUCTION?

"Well-planned online learning experiences are meaningfully different from courses offered online in response to a crisis or disaster. Colleges and universities working to maintain instruction during the COVID-19 pandemic should understand those differences when evaluating this emergency remote teaching."

— Hodges et al., *"The Difference Between Emergency Remote Teaching and Online Learning"* in EDUCAUSE Review, March 27, 2020.

Online instruction is often defined simply as instruction offered via the internet to students using their own computers. This definition is broad, but not as broad as "distance learning" or "remote instruction," which includes not only internet-based instruction but also that delivered via digital technologies without internet connections, print materials sent through the mail, radio, or television.

Charles Hodges and colleagues writing in the *EDUCAUSE* Review point out that the instruction delivered with very little preparation in the wake of COVID-19 had very little resemblance to intentionally designed online instruction as understood and practiced today. To avoid stigmatizing online teaching and learning on the basis of less than ideal experiences in spring 2020, Hodges and co-authors recommend calling instruction this spring "emergency remote teaching."

We appreciate the importance of the argument made by Hodges and co-authors, but chose to use the term "online instruction" in the student survey because of its greater familiarity to undergraduates. This report predominantly uses the term "online" with occasional reference to learning remotely or at a distance to refer to the instruction and learning experiences during the COVID-19 pandemic and without intending a distinction among the terms.

FINDINGS

CONTEXT

Prior Online Learning Experience

Online courses have become a much more prominent part of education over the past two decades, but the majority of students taking courses that included in-person classes this spring had limited prior experience with online courses: 43 percent had not taken any online course before and 21 percent had previously taken only one online course. The remaining 35 percent of survey respondents had taken two or more online courses in the past.

Subject Area

The subject matter in the focal courses respondents chose to describe varied widely. Sixty-three percent of students responded for a STEM course. The most common subjects for the courses students described were biology (11 percent), mathematics (10 percent), computer science or technology (8 percent), engineering or engineering technology (8 percent), chemistry (7 percent), health profession (7 percent), business (5 percent), and accounting (5 percent).

Class Size

The college courses students described had fairly small classes. Fifty-six percent of students reported that their course had fewer than 35 students, 26 percent said it had 35-75 students, and just 17 percent said it had more than 75 students. Students may have been reporting for the enrollment in their section of a course that had a larger total enrollment.

COURSES AFTER COVID-19

Online Course Components

After courses moved to remote instruction post-COVID-19, 67 percent held "live" (synchronous) sessions during which students could ask questions. Other common features of online college courses this spring were recorded lectures (65 percent of courses) and frequent quizzes and assessments (64 percent).

TABLE 1. FEATURES OF ONLINE COURSES AFTER COVID-19

| Course Feature	Percentage of Students Reporting
Live sessions to ask questions and discuss	67
Recorded lectures	65
Frequent quizzes/assessments	64
Live lectures	60
Pre-recorded video	55
Breakout groups during a live class	25

Grading

Another major change after COVID-19 concerned course grading policies. Many colleges and universities extended the time period for choosing to take a course pass/fail or credit/no credit rather than for a letter grade to late in the academic term. Some institutions even mandated that all courses use credit/no credit grading out of concern that differences in technology access or ability to participate in course activities would make grading unfair. Of the survey respondents who were taking their course for a grade before COVID-19 (92 percent of the sample), 60 percent reported being given the option of taking it either for a grade or pass/fail after COVID-19. Another six percent reported that the course became mandatory pass/fail. Only 34 percent reported that they had no option but to continue taking their course for a letter grade after COVID-19.

HOW GOING ONLINE IMPACTED STUDENT SATISFACTION WITH THEIR COURSES

About half of the students in the survey (51 percent) said they were very satisfied with their course before it went fully online. Students' ratings of their satisfaction with their courses after moving fully online were dramatically lower, with only 19 percent of students being very satisfied with their online course experience.

Nevertheless, even with this large decrease in the proportion of very satisfied students, the majority of students (59 percent) were at least somewhat satisfied with their courses after the shift to remote instruction.

FIGURE 1. STUDENTS' SATISFACTION WITH THEIR COURSE BEFORE AND AFTER THE MOVE TO REMOTE INSTRUCTION
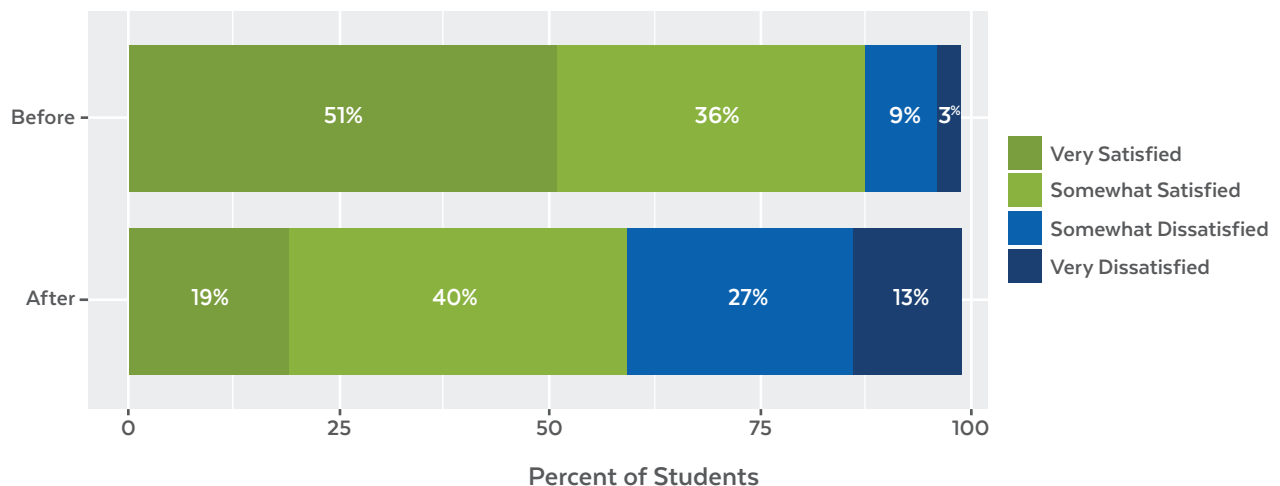

The survey also asked students to rate their satisfaction with multiple aspects of their course after it went online, as shown in Figure 2. When asked about their satisfaction with their instructor's preparation for teaching the course after it moved online, most students did not blame their instructors for what they perceived as a drop in course quality. More than a third of students (37 percent) said they were very

Fewer than half of students expressed dissatisfaction with their learning after their course went online.

satisfied, and 39 percent said they were somewhat satisfied with their instructor's preparation for teaching the course post-COVID-19. The area in which satisfaction suffered most after COVID was how well students thought they were learning: Only 17 percent of respondents said they were very satisfied with how well they were learning post-COVID-19. Even so, fewer than half of students expressed dissatisfaction with their learning after their course went online.

FIGURE 2. STUDENT SATISFACTION WITH QUALITY OF VARIOUS ASPECTS OF THEIR ONLINE COURSE
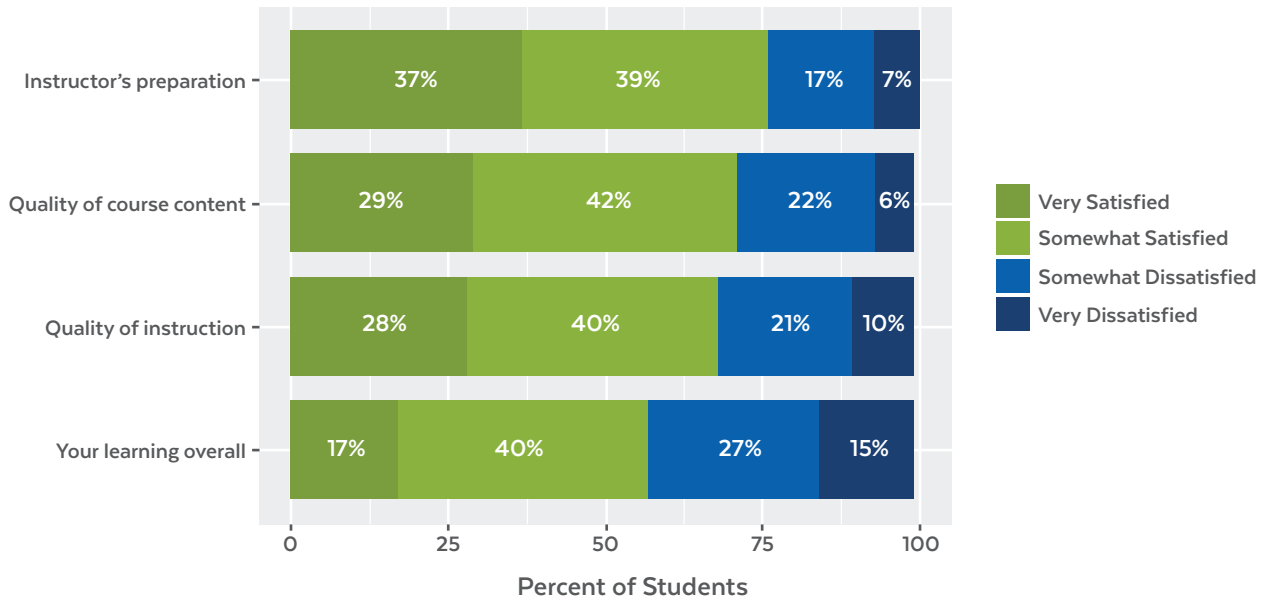
Asked to choose between the unplanned move to online instruction and inherent limitations of online learning as the source of problems with the course as it was implemented after the pandemic, more students attributed problems to the former (45 percent compared to 37 percent) with about one in six students (16 percent) saying they didn't experience any problems with the course after it moved online.
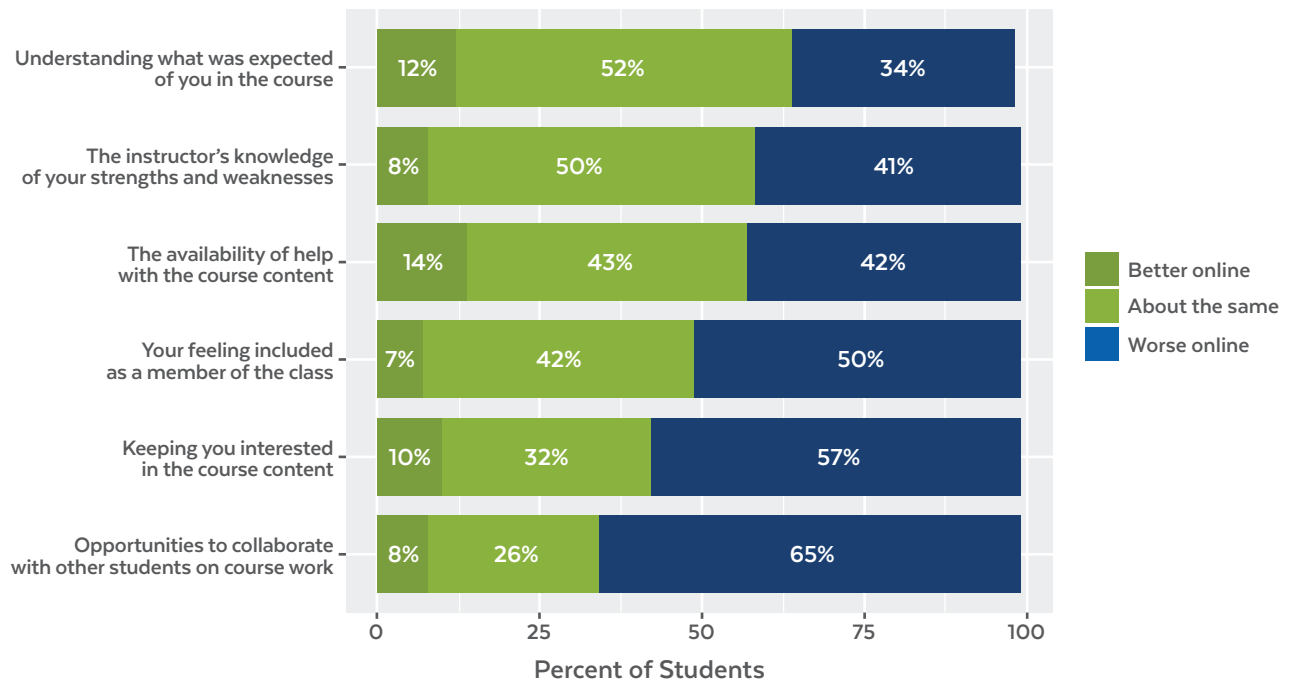
Specific aspects of the course that half or more of the students perceived to suffer after moving to remote instruction were:

- opportunities to collaborate with other students on course work (65 percent thought opportunities were worse or much worse online),
- keeping students interested in the course content (57 percent thought worse or much worse), and
- making students feel included as a member of the class (50 percent thought worse or much worse).

On the other hand, a majority of students thought the course was about the same, better, or much better after going online in terms of:

- understanding what was expected in the course (64 percent),
- the instructor's knowledge of their strengths and weaknesses (58 percent), and
- the availability of help with the course (57 percent).

FIGURE 3. COMPARISON OF STUDENT EXPERIENCES IN THEIR COURSE BEFORE AND AFTER THE SHIFT TO REMOTE INSTRUCTION

Understanding what was expected of you in the course: 12% Better online, 52% About the same, 34% Worse online

The instructor's knowledge of your strengths and weaknesses: 8% Better online, 50% About the same, 41% Worse online

The availability of help with the course content: 14% Better online, 43% About the same, 42% Worse online

Your feeling included as a member of the class: 7% Better online, 42% About the same, 50% Worse online

Keeping you interested in the course content: 10% Better online, 32% About the same, 57% Worse online

Opportunities to collaborate with other students on course work: 8% Better online, 26% About the same, 65% Worse online

Percent of Students

Legend:
- Better online
- About the same
- Worse online

## TECHNOLOGY ACCESS

Internet Connectivity

The majority of students (95 percent) accessed their online courses through an internet connection they already had at home. Internet access at their school, or near their home at another place arranged by their school, was used by just three percent of students. Another one percent relied on internet access in another public place for their course.

Not all internet access is sufficient for digital learning activities, however. Videoconferencing, which was used in many courses, requires high bandwidth, for example. And even households with high bandwidth internet may experience connectivity problems when multiple people are online at the same time. Internet connectivity issues were serious enough to interfere with students' ability to attend or participate in their course at least occasionally for 44 percent of students, with 16 percent of students experiencing such problems often or very often.

> *"I don't have wifi, so at first I couldn't even get online, but then my phone company chose to give out free unlimited data so then I could participate in class again."*
>
> *- Student*

FIGURE 4. FREQUENCY OF INTERNET CONNECTIVITY ISSUES THAT INTERFERED WITH COURSE PARTICIPATION

| | Very often |
	Often
6% 10% 29% 36% 20%	Occasionally
	Rarely
	Never

Percent of Students
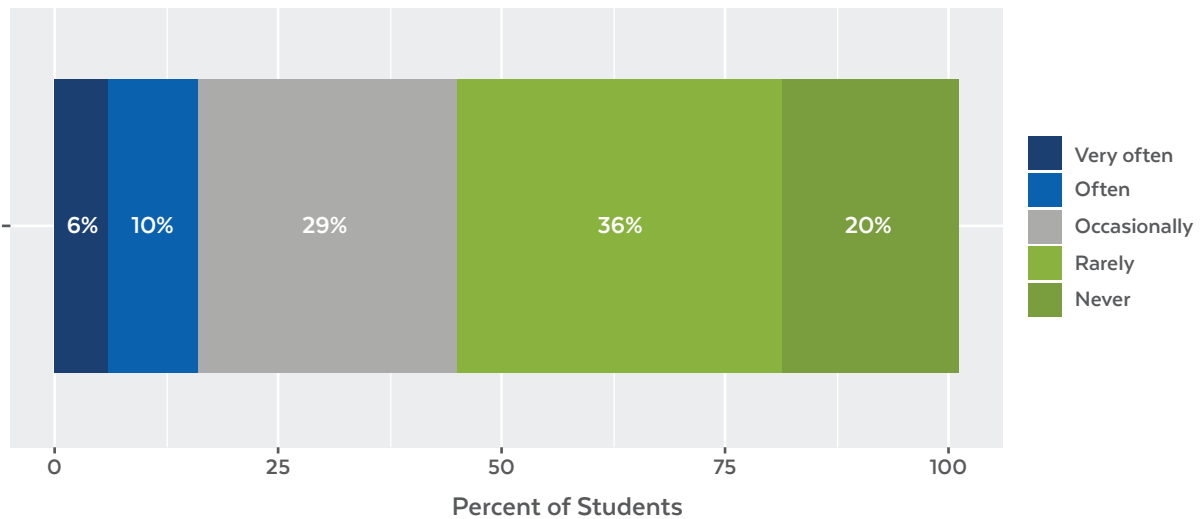
Device

Nearly four out of five students (79 percent) used a laptop computer to access their course after COVID-19. A desktop computer was used by 15 percent, a tablet by 3 percent, and a smartphone by 2 percent. Ten percent of students had to share the device they were using to access the course with other users. These included one percent of the sample using a computing device in a public place as their main way to access the course. A number of colleges and universities were active in distributing computing devices to students who did not have them this spring, and three percent of survey respondents said they accessed their course through a device provided by their college.

> *"I had to do most of work on my phone while sending various emails for help and accessible technology - and nothing."*
> *- Student*

Almost a quarter of students (23 percent) experienced hardware or software problems serious enough to impact their ability to attend or participate in their course at least occasionally.

FIGURE 5. FREQUENCY OF HARDWARE AND SOFTWARE PROBLEMS THAT INTERFERED WITH COURSE PARTICIPATION
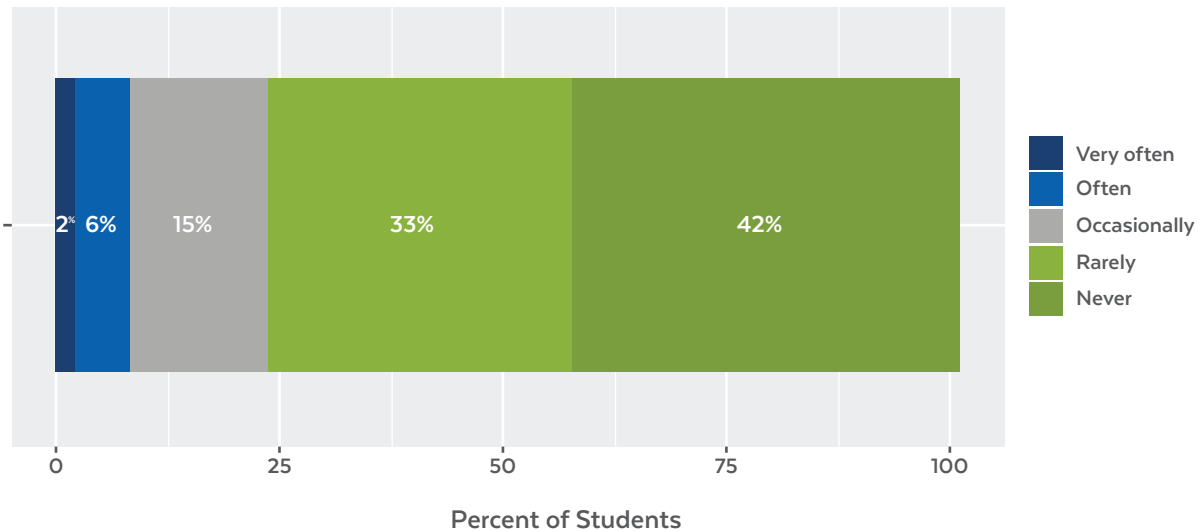
Hardware and software problems were more frequent for the 16 percent of students who had frequent internet connectivity issues than for students who rarely or never had problems with their internet connection.

CHALLENGES STUDENTS FACED IN LEARNING REMOTELY

Students were asked to describe their greatest challenge in learning from their course after it moved online. Many responses to this open-ended question focused on staying motivated when they did not have the structure of regular class routines and were subject to many kinds of distractions.

> "Self-motivation. With the world in chaos, it was hard to stay focused and motivated to mentally show up for class."

> "The greatest challenge was finding the motivation to get out of bed and complete assignments. It's not the same as getting up, getting ready, driving to class, then sitting in class to learn."

> "Being motivated to actually do it. When it was in person, I had a set time and place to do my work, but at home I never set up a schedule."

Another theme found in many of the open-ended responses was missing the presence of the instructor and peers while they learned. Students pointed to the lost opportunity to get immediate feedback from their instructor concerning their understanding or performance. They also missed the chance to deepen their understanding by discussing course content with peers.

> "Not being able to ask questions during the lecture (since it was pre-recorded). That being said, my teacher was very available to help at any time so I took advantage of that."

"During in-person lectures I was able to ask my peers and my teacher for help with something I was struggling with and they would be able to show me how to do it. When class went online I was no longer able to ask for help the same way I could before, and it was harder to teach myself the class."

"Not being able to discuss topics with my classmates. Not being able to hear their questions on the subjects we were learning that could have helped me learn more."

Many students also highlighted the loss of authentic, hands-on experiences that helped to develop understanding in the particular subject they were studying.

"Part of the class was a lab where students could do experiments and see results. After the class went online all of the labs were cut out of the curriculum. I had a harder time understanding the theory and relating it to the practical."

"Doing the practical hands-on stuff—we had to video ourselves doing it."

"My work needed to be in person with kids. The online portion was nothing like what the course was supposed to be."

In response to the question about their greatest challenge, a small proportion of students answered that they had not experienced challenges when the course moved online.
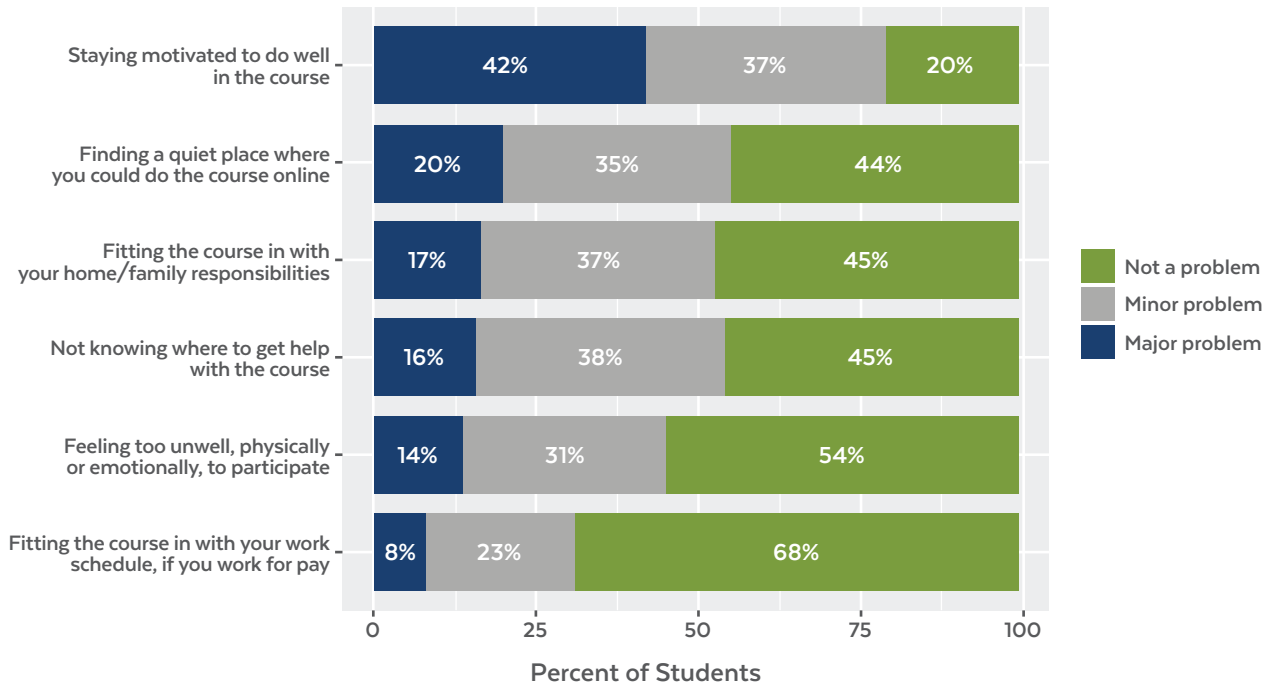
"I adapted very quickly."

"It gave me more time to do the work."

"Nothing. I saved money on parking. It would have been harder if it were science or math; but English is easy. Just read at home and take some tests online."

The survey also included structured-response items that asked students to rate their experiences with a specific set of problems they may have faced in trying to continue with their courses after COVID-19. Similar to the responses to the open-ended question about their single greatest challenge, the most pervasive problem reported by students was staying motivated to do well in the course after it went online: 79 percent of students cited this as a problem (42 percent said it was a major problem, and another 37 percent said it was a minor problem). As shown in Figure 6, other problems were less prevalent than motivation issues but still considered at least a minor problem for a substantial portion of students. Finding a quiet place to work on the course online was cited by 55 percent; fitting the course in with family/home responsibilities by 54 percent; not knowing where to go for help with the course by 54 percent; feeling too unwell to participate by 45 percent; and fitting the course in with a work schedule by 31 percent.

FIGURE 6. SEVERITY OF VARIOUS PROBLEMS WITH ONLINE COURSE PARTICIPATION

Staying motivated to do well in the course: 42% Major problem, 37% Minor problem, 20% Not a problem

Finding a quiet place where you could do the course online: 20% Major problem, 35% Minor problem, 44% Not a problem

Fitting the course in with your home/family responsibilities: 17% Major problem, 37% Minor problem, 45% Not a problem

Not knowing where to get help with the course: 16% Major problem, 38% Minor problem, 45% Not a problem

Feeling too unwell, physically or emotionally, to participate: 14% Major problem, 31% Minor problem, 54% Not a problem

Fitting the course in with your work schedule, if you work for pay: 8% Major problem, 23% Minor problem, 68% Not a problem

Legend: Not a problem, Minor problem, Major problem

Percent of Students

EXPERIENCES OF LOW-INCOME, UNDERREPRESENTED, AND RURAL STUDENTS

The challenges associated with the unplanned transition to remote instruction during COVID-19 were not uniformly distributed across college students.

Students self-identified in terms of race/ethnicity when they joined the Ipsos survey panel. For survey data analysis, response codes were aggregated into four groups; this report focuses on comparing the experiences of non-Hispanic White students to those of Hispanic and Black students to better understand the disparate impacts of the transition to remote instruction. (There were too few students in other race/ethnicity categories to support reliable statistical estimates.)

> *Hispanic students reported a greater number of challenges to their continued course participation after instruction went online.*

Group comparisons found that Hispanic students reported a greater number of challenges to their continued course participation after instruction went online. Fitting the course in with home/family responsibilities, for example, was a major problem for 27 percent of Hispanic students, compared to just 12 percent of non-Hispanic White students. Similarly, 27 percent of Hispanic students said finding a quiet place to work on the course was a major problem for them, compared to 16 percent of non-Hispanic Whites. Feeling too unwell, physically or emotionally, to participate in the course was another challenge more prevalent among Hispanic students: 21 percent reported this as a major problem, compared to 12 percent of non-Hispanic Whites. More Hispanic students (24 percent) than non-Hispanic White students (14 percent) also reported having a major problem knowing where to get help with the course after it went online. The pervasiveness of challenges for Black students was generally in

between that for Hispanic students and that for non-Hispanic White students, with percentages experiencing a challenge as a major problem that did not differ statistically from those for either of the other two student groups.

Staying motivated to do well in the course, which was the most prevalent challenge overall, was similarly challenging for Hispanic students (45 percent) and non-Hispanic White students (42 percent) but less likely to be perceived as a major problem by Black students (31 percent).

FIGURE 7. PERCENT OF STUDENTS EXPERIENCING PROBLEMS AS "MAJOR," BY RACE/ETHNICITY
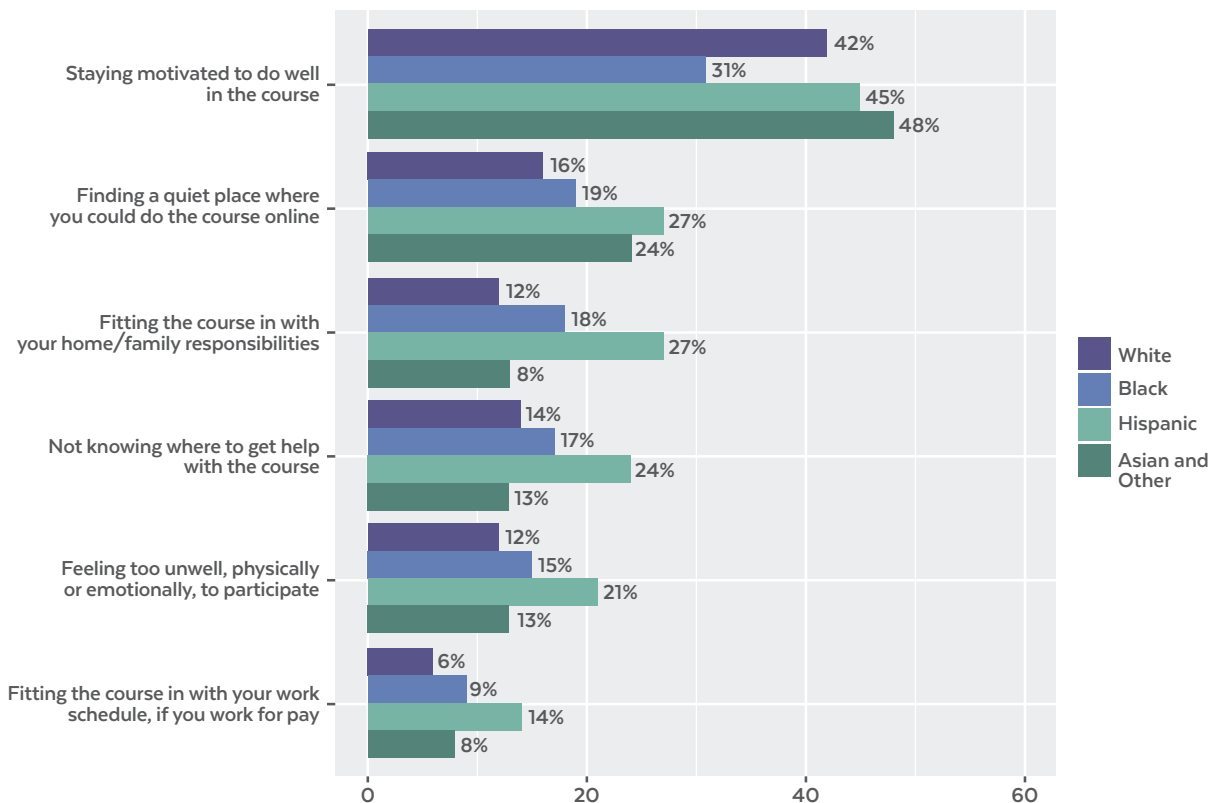
In terms of technology access, Hispanic students were more likely to experience internet connectivity problems often or very often (23 percent) compared to non-Hispanic White students (12 percent), with the frequency for Black students falling in between (17 percent). Students from low-income households (annual incomes under $50,000) were also more likely to experience internet connectivity problems often or very often (20 percent) compared to students from high-income households earning $100,000 or more (12 percent). Surprisingly, students with homes in rural communities were not more likely than those in urban or suburban communities to report experiencing internet connectivity problems often or very often (14 percent versus 16 percent for the other two location types).

Hardware or software issues were less prevalent than internet connectivity problems for the survey respondents overall, but showed a similar pattern of differences among race/ethnicity groups. Frequency of hardware and software problems was lower for non-Hispanic White

Hardware and software issues varied dramatically by household income.

students (6 percent experiencing them often or very often) than for underrepresented minority students (10 percent for Hispanic students and 15 percent for Black students).

Hardware and software issues varied also by household income. Just 4 percent of students from high-income households reported having these problems often or very often, compared to 11 percent of students from low-income households and 8 percent of students from middle-income households (annual incomes of $50,000-$100,000).

PREDICTORS OF STUDENT SATISFACTION WITH THEIR ONLINE COURSE

The survey asked students whether their course after COVID-19 included each of eight instructional practices identified through past research as contributing to more effective online teaching and learning:

RECOMMENDED PRACTICES FOR ONLINE INSTRUCTION

* Assignments that ask students to express what they have learned and what they still need to learn

* Breaking up class activities into shorter pieces than in an in-person course

* Frequent quizzes or other assessments

* Live sessions in which students can ask questions and participate in discussions

* Meeting in "breakout groups" during a live class

* Personal messages to individual students about how they are doing in the course or to make sure they can access course materials

* Using real world examples to illustrate course content

* Work on group projects separately from the course meetings

Student responses indicating the number of these practices in their course were tabulated. The number of these online instructional practices incorporated in the course predicted students' satisfaction with their course after COVID-19. Net satisfaction (the proportion of students very or somewhat satisfied) for courses employing 0-2 of the recommended online instructional practices was 43 percent compared to 61 percent for courses using 3-5 of the practices, and 74 percent for courses using 6-8 of the practices.

> *Net satisfaction for courses employing 0-2 of the recommended online instructional practices was 43 percent compared to 61 percent for courses using 3-5 of the practices, and 74 percent for courses using 6-8 of the practices.*

FIGURE 8. SATISFACTION WITH POST-COVID-19 COURSE BY NUMBER OF RECOMMENDED ONLINE PRACTICES USED
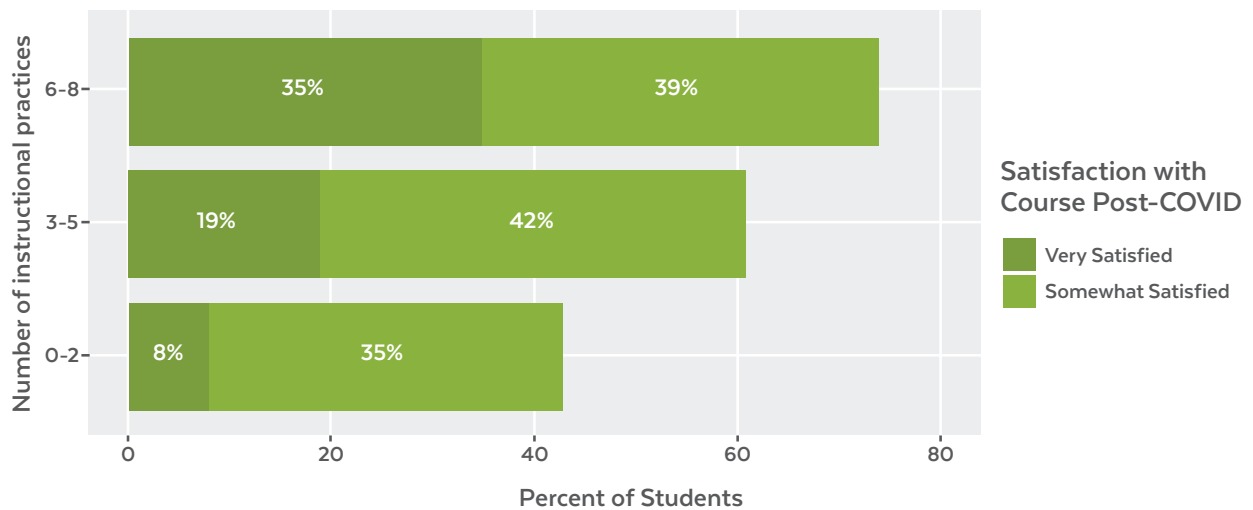
Instructional practices with the largest individual effects on students' overall course satisfaction were:

- **_Personal messages from the instructor on how the student was doing or to make sure they could access course materials._** Sixty-eight percent of those who received messages of this type were satisfied with the course overall, compared to 47 percent of those who did not.

- **_The instructor's use of real-world examples to illustrate course content._** Among students whose instructor did this in the online course, 67 percent were satisfied overall, compared to a 42 percent satisfaction level among those whose instructor did not use real-world examples.

- **_Assignments requiring students to express what they had learned and what they still needed to learn._** Satisfaction with online courses that included such assignments reached 68 percent compared to 50 percent for courses without this feature.

These same three instructional practices were closely related to students' satisfaction with how well they were learning in their course after COVID-19. For example, 70 percent of students whose instructors sent personal messages were satisfied with their learning compared to 41 percent of students in courses without such messages.

A number of other variables also predicted students' level of satisfaction with their course post-COVID-19. As one would expect, students who were very satisfied with their course before COVID-19 were more likely to be at least somewhat satisfied with it afterward: 69 percent of those who were very satisfied before were very or somewhat satisfied after, compared to 58 percent of those who were just somewhat satisfied before COVID-19 and 16 percent for those who were somewhat dissatisfied or dissatisfied with their course before it went online.

Before COVID-19, class size predicted the proportion of students very satisfied with their course but not net satisfaction (the aggregate of very and somewhat satisfied). After COVID-19, when

the course went entirely online, class size was a strong predictor of net satisfaction, as illustrated in Figure 9. Sixty-five percent of students in small classes (fewer than 35 students) were somewhat or very satisfied with the course after it went fully online, compared to 53 percent for medium classes (35-75 students) and just 48 percent for large classes (76 or more students).

FIGURE 9. SATISFACTION WITH COURSE BY CLASS SIZE
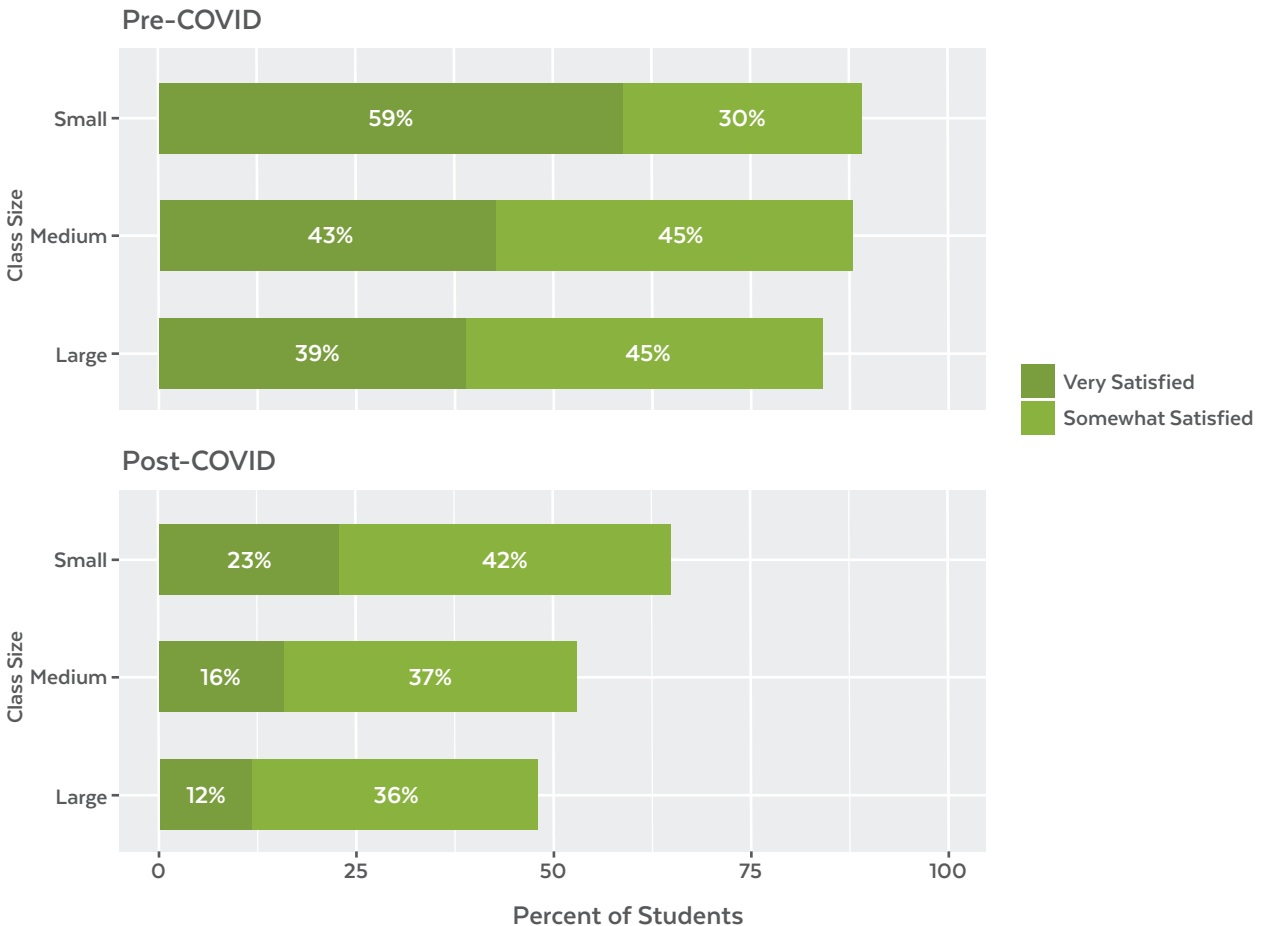
Not surprisingly, the number of challenges and frequency of technology problems a student experienced was associated with course satisfaction after the course moved online. Analysts created a nine-point scale for the sum of the number of problems listed in Figure 6 a student reported as "major," plus one point for frequent internet connectivity problems and another one for hardware/software problems. The relationship between number of challenges experienced and satisfaction with the course is shown in Figure 10. For the 40 percent of students who did not report experiencing any challenges to completing their course after COVID-19, the level of satisfaction with the course was 81 percent (32 percent as very satisfied and 49 percent somewhat satisfied). For students who experienced four or more challenges, the corresponding satisfaction level was 32 percent (12 percent as very satisfied and 20 percent somewhat satisfied).

FIGURE 10. SATISFACTION WITH ONLINE COURSE BY NUMBER OF CHALLENGES EXPERIENCED
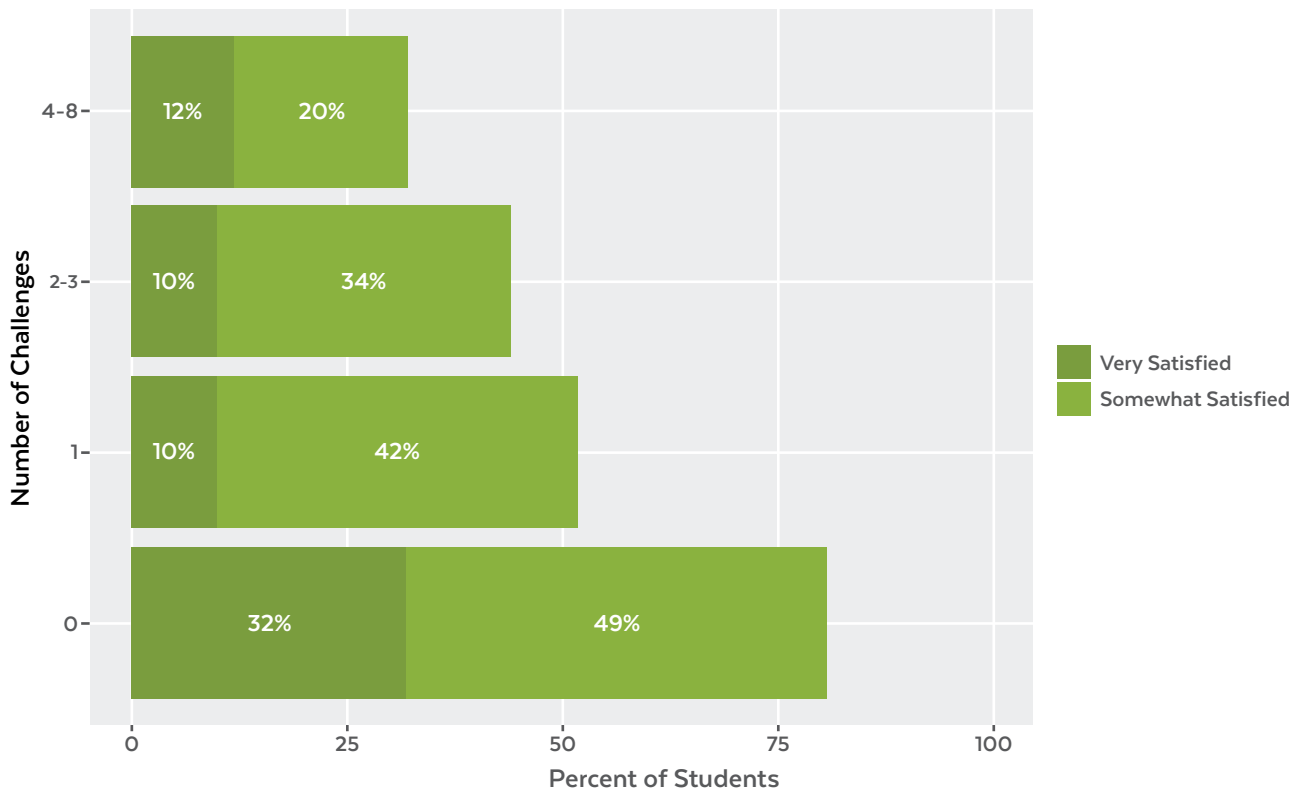
Having difficulty maintaining motivation to do well in the course, not knowing where to find help with the course, and feeling too unwell physically or emotionally to participate were the specific challenges most closely related to overall course satisfaction. Satisfaction (very or somewhat) fell to 37 percent for those who cited motivation as a major problem, compared to 82 percent among those who said motivation was not a problem for them. The corresponding satisfaction rates were 30 percent for those who said they had a major problem finding where to get course help online compared to 74 percent among those who didn't see this as a problem, and 27 percent for those feeling too unwell to participate compared to 69 percent among those not having a wellness problem.

There also appeared to be some association between the number of online courses a student had taken previously and satisfaction with their course after COVID-19 (17 percent very satisfied among those who had taken zero or one online course before compared to 23 percent for those who had taken two or more online courses), but this association fell short of statistical significance.

LOOKING FORWARD

IMPLICATIONS FOR FUTURE INSTRUCTION

Despite the overall sharp drop in students' satisfaction with their courses after they went entirely online in response to the COVID-19 pandemic, there are positives in our survey data. First, some aspects of courses did not get significantly worse after shifting instruction online. Students were just as confident they knew what was expected of them in the course, knew where to get help in the course if they needed it, and thought their instructors were as aware of their individual strengths and weaknesses as they were when the course included face-to-face classes. Moreover, the use of a varied set of online teaching practices recommended in the literature resulted in higher student satisfaction with the course post-COVID-19. In courses incorporating six or more of the recommended online teaching practices, 35 percent of students were very satisfied and 39 percent somewhat satisfied after COVID-19. Courses incorporating fewer of the recommended practices had lower satisfaction ratings, as described above.

Of the 8 recommended online teaching practices covered in the survey, the two with the most impact on student satisfaction were the inclusion of personal messages to students about how well they were doing in the course (courses including this practice had 28 percent of students very satisfied compared to just 8 percent very satisfied for those without) and course activities that asked students to reflect on what they had learned and what they still needed to learn (27 percent of students in courses with this feature were very satisfied compared to 11 percent in courses without). Moreover, even the most pervasive challenge cited by students—maintaining motivation to do well in the course once it moved online—was mitigated significantly by the practice of sending students personalized messages about how they were doing (53 percent of students in courses that did not include personal messages found staying motivated to be a major problem, compared to only 33 percent of students in courses that used personal messages).

Colleges and universities are using the summer to help faculty deepen their understanding of how to improve online learning and how to teach in multiple modalities to keep students and faculty safe and healthy. A significant portion of the training is likely to focus on how to develop better strategies for dealing with inequities across student populations. In addition to the continuing need to improve teaching and learning in ways that diminish student achievement gaps for low-income students and students of color, institutions will need to take into account the challenges that learning online can pose for these students as well as other students. Instructional designs and course policies and practices need to work for students with poor internet connectivity, limited access to appropriate devices, family and job responsibilities, and no designated place at home for doing coursework. As institutions and faculty strive to adjust to changing public safety conditions that will require social distancing and more reliance on digital learning, they will be looking for concrete guidance around what works for different kinds of learning, students, and conditions. The practices that students in this survey identified as contributing to their learning, motivation, and course satisfaction are a good starting point.

Moreover, research suggests that involving teams of faculty, instructional designers, and faculty development staff in redesigning curriculum and instruction not only results in a better course but is also a very effective form of professional learning. It allows for faculty to gain insights from each other as well as from their instructional design and faculty development colleagues.

Everyone hopes that college courses rolling out in fall 2020 and beyond will benefit from having some time to shore up their IT infrastructure, design instruction for online delivery, and enhance instructors' online teaching skills. There's an opportunity to do better by students, and seizing that opportunity is both essential for the survival of many higher education institutions and a moral imperative.

DELIVERING HIGH-QUALITY INSTRUCTION ONLINE IN RESPONSE TO COVID-19: A FACULTY PLAYBOOK

This playbook is a concise guide to addressing faculty needs for online course design, teaching, and continuous improvement. Produced through a collaboration between the Online Learning Consortium (OLC), the Association of Public and Land-grant Universities (APLU), and the Every Learner Everywhere Network, this guide discusses characteristics of online learning and remote teaching, equity issues in course design, institutional concerns related to COVID, instructional design principles, course management, and continuous improvement evaluation practices.

https://www.everylearnereverywhere.org/resources/delivering-high-quality-instruction-online-in-response-to-covid-19/

APPENDIX: SURVEY METHODOLOGY

The survey for Digital Promise's report, "Suddenly Online: A National Survey of Undergraduates During the COVID-19 Pandemic," was conducted using the nationally representative Ipsos KnowledgePanel®, for which participants were randomly recruited via address-based sampling to participate in survey research projects online.

The Digital Promise survey was designed to include approximately 1,000 adults studying at a two- or four-year college or university at the undergraduate level, either part- or full-time, who had a class change from including in-person class sessions to instruction completely online because of the COVID-19 pandemic.

Field work was conducted between May 13 and June 1, 2020. Starting May 15, email reminders were sent to non-responders every two days; those who did not respond by May 29 also received a reminder by telephone, and incentives (panel "points" that can redeemed for prizes in future sweepstakes) were increased, first on May 27 and then again on May 29.

Of the 1,709 panelists initially responding, 1,014 were qualified undergraduates taking for-credit college courses that started with in-person classes and later went fully online in spring 2020. The median completion time of the survey was 10 minutes. Quality control flagged respondents who completed the survey in less than one-third of the median time, removing six cases, for a final sample size of 1,008.

Data were weighted via iterative proportional fitting to the following benchmark distributions of adult undergraduate students with less than a bachelor's degree from the 2018 American Community Survey:

- Gender (male, female) by age (18-20, 21-22, 23-29, 30+)
- Race/ethnicity (White, Black, Other, Hispanic, 2+ races)
- Census region (Northeast, Midwest, South, West)
- Education (high school, some college, associate's degree)
- Household income (less than $25,000, $25,000-$49,999, $50,000-$74,999, $75,000-$99,999, $100,000-$149,999, $150,000+)
- Language proficiency (English-proficient Hispanic, bilingual or Spanish-proficient Hispanic, non-Hispanic)
- Hispanic nativity (U.S.-born, not-U.S.-born, non-Hispanic)
- School type (public, private)

Weights were trimmed at 0.23 percent and 99.77 percent and then rescaled to match the sample size of all respondents. The final weights for qualified respondents (i.e., those who had a class change from in-person to completely online) were extracted from the above weights and re-scaled to sum to the sample size of qualified respondents. The average design effect for the final weight is 1.35, for a margin of error of 3.6 percentage points for the full sample. Error margins are larger for subgroups.

A table of unweighted, weighted and benchmark distributions follows.

TABLE A.1. SURVEY SAMPLE AND POPULATION BENCHMARKS

	Unweighted	Weighted	Benchmark
Male	34.0	45.3	45.7
Female	66.0	54.7	54.3
18-20	26.3	33.9	34.4
21-22	28.2	22.7	22.5
23-29	24.8	23.1	22.9
30+	20.7	20.3	20.2
18-20 Male	8.4	15.4	16.1
18-20 Female	17.9	18.5	18.3
21-22 Male	10.3	10.8	10.7
21-22 Female	17.9	11.9	11.8
23-29 Male	8.7	10.8	10.8
23-29 Female	16.1	12.3	12.2
30+ Male	6.6	8.3	8.2
30+ Female	14.1	12.0	12.0
White, non-Hispanic	58.5	51.5	51.2
Black, non-Hispanic	10.5	14.9	14.8
Other, non-Hispanic	4.2	7.6	8.2
Hispanic	22.6	22.7	22.5
2+ race, Non-Hispanic	4.1	3.2	3.2
Northeast	17.6	15.5	15.3
Midwest	23.5	19.3	19.1
South	33.0	37.0	37.4
West	25.8	28.2	28.1
High school diploma/GED	11.1	15.7	15.6
Some college, no degree	64.6	67.3	67.5
Associate degree	24.4	17.0	16.9

	Unweighted	Weighted	Benchmark
Less than $25,000	24.6	18.2	18.1
$25,000-$49,999	20.8	19.1	18.9
$50,000-$74,999	15.8	16.4	16.3
$75,000-$99,999	14.1	13.5	13.4
$100,000-$149,999	13.3	16.7	17.3
$150,000 or more	11.5	16.1	16.0
English-proficient Hispanic	8.2	7.4	7.3
Bilingual Hispanic	14.3	15.1	14.6
Spanish-proficient Hispanic	0.2	0.3	0.6
Non-Hispanic	77.4	77.3	77.5
US-born Hispanic	17.6	17.2	17.1
Not US-born Hispanic	5.0	5.5	5.4
Non-Hispanic	77.4	77.3	77.5
Public school	75.1	83.2	83.3
Private school	24.9	16.8	16.7

ACKNOWLEDGEMENTS

SUGGESTED CITATION

Means, B., and Neisler, J., with Langer Research Associates. (2020). *Suddenly Online: A National Survey of Undergraduates During the COVID-19 Pandemic.* San Mateo, CA: Digital Promise.