

Office of the President

TO MEMBERS OF THE ACADEMIC AND STUDENT AFFAIRS COMMITTEE:

DISCUSSION ITEM

For Meeting of September 16, 2020

PLANNING AND EVALUATION OF COVID-19 ACADEMIC AND STUDENT IMPACTS

EXECUTIVE SUMMARY

This item provides an update on data collected and ongoing and planned research about UC remote instruction activities, including initial findings and how this information has supported fall instruction efforts. In addition, this item will reference examples of UC research that may provide greater insight into what educational activities require a residential experience, where there are opportunities to change the educational delivery model and expand access, and how these activities promote student success.

BACKGROUND

The COVID-19 update to the Academic and Student Affairs Committee (ASAC) in May 2020 provided initial information on the rapid transition of UC campuses to remote instruction. At that time, quarter campuses were in the middle of the spring term and semester campuses were just completing exams. Campus perspectives about the transition, along with preliminary systemwide faculty and undergraduate survey data, was the primary information available. ASAC members requested additional and nuanced data to understand the impact of remote instruction on course offerings and disciplinary differences, any differential impact on segments of the student population, and how insight from the spring term was supporting fall planning efforts.



In addition, Regents raised questions in May about what UC was learning through this remote instruction period—were there ways to restructure the residential experience and leverage technology to expand access, and expand it in an equitable manner, without damaging the learning experience or amplifying inequity? What does UC understand about different modalities that align best in promoting student success? How might the cost structure, and investments, and space planning change?

This item provides spring 2020 data on course offerings, student enrollments, and grades, along with results from numerous systemwide and campus surveys providing student and faculty perspectives about remote instruction. This information was used to inform fall 2020 planning around instruction, housing priorities, and student support.

Other data collected but not included in this item is content from campus learning management systems (LMS). LMS data can provide detailed information on student interactions and performance in courses, including discussion forum, clickstream, assignment and quiz data. For example, UC Berkeley is analyzing spring 2020 LMS data to understand how the LMS interactions of first-generation and underrepresented students changed as the remote instruction policy took effect.

Some UC campuses have launched or modified existing research efforts to collect information on the remote instruction period. One such study that will be discussed as part of this item is UC Irvine's Next Generation Undergraduate Success Measurement Project. This project seeks to understand the value of undergraduate educational experiences and promote evidence-based models of undergraduate success. It is using administrative, student survey, performance assessments, and LMS data on a subset of incoming freshman and junior transfers, along with continuing juniors (around 1,250 students). Researchers adapted their approach to collect information on spring 2020 remote instruction to inform fall 2020 planning.

The written item will share the way UC Irvine's project, along with other UC research, can inform discussions on how the University may be able to adapt educational delivery to preserve quality, support student success, and expand access.

SPRING 2020 CURRICULAR OUTCOMES

Spring 2020 course offerings declined slightly, but students took more units

The UC Office of the President (UCOP) does not have a way to compare planned to eventual course offerings in a term. To estimate the impact of remote instruction on course offerings, UCOP compared the number of credit bearing course offerings (e.g., lectures, laboratory courses, studio courses) with enrollments as of the third week in spring 2019 and spring 2020. Table 1 shows UC offered almost 51,000 undergraduate and graduate courses in spring 2020, representing almost 98 percent of spring 2019 courses delivered.

There were some disciplinary differences, such as a drop in spring 2020 offerings in the arts, education, health sciences, and life sciences. UC campuses indicated that laboratory, field study, internships/practicums, and performance art courses were the most difficult to adapt. Many labs had to cease operations, reducing the number of research opportunities. Furthermore, Schools of Medicine were hit particularly hard, needing to either rethink the timing of curriculum so that laboratory-based classes, along with hands-on research instruction and clinical rotations would be available when in-person instruction returns. A greater proportion of these kinds of classes were cancelled, many of which in disciplines with a decline in spring 2020 offerings compared to spring 2019 offerings.

Table 1: Spring 2019 and 2020 course section counts by course level and broad discipline

| UC | Course Discipline | 2019 | | | | 2020 | | | |
|----|-------------------------|----------------|----------------|---------------|---------------|----------------|----------------|---------------|---------------|
| | | Lower Division | Upper Division | Graduate | Total | Lower Division | Upper Division | Graduate | Total |
| | Grand Total | 10,587 | 17,267 | 24,407 | 52,252 | 10,238 | 16,191 | 24,552 | 50,973 |
| UC | Architecture | 25 | 62 | 151 | 238 | 29 | 62 | 143 | 234 |
| | Arts | 1,032 | 1,637 | 1,491 | 4,160 | 1,000 | 1,523 | 1,367 | 3,890 |
| | Business | 55 | 345 | 998 | 1,398 | 58 | 354 | 975 | 1,387 |
| | Education | 132 | 371 | 764 | 1,263 | 96 | 340 | 755 | 1,190 |
| | Engineering & CS | 539 | 1,686 | 3,748 | 5,973 | 509 | 1,616 | 3,863 | 5,988 |
| | Health Sciences | 258 | 658 | 1,809 | 2,725 | 191 | 501 | 1,732 | 2,424 |
| | Humanities | 3,206 | 2,778 | 2,562 | 8,546 | 3,342 | 2,716 | 2,635 | 8,693 |
| | Interdisciplinary/Other | 604 | 636 | 143 | 1,378 | 531 | 620 | 136 | 1,280 |
| | Legal Studies | 4 | 67 | 986 | 1,057 | 4 | 62 | 1,045 | 1,111 |
| | Life Sciences | 1,023 | 2,888 | 3,882 | 7,793 | 895 | 2,660 | 4,016 | 7,571 |
| | Physical Sciences | 2,518 | 2,871 | 4,534 | 9,923 | 2,380 | 2,619 | 4,539 | 9,538 |
| | Social Sciences | 1,191 | 3,268 | 3,339 | 7,798 | 1,203 | 3,118 | 3,346 | 7,667 |

While there may have been a slight decline in course offerings, course-taking activity increased for undergraduates at the quarter campuses who began the spring term remotely (see Table 2). Systemwide, the number of units attempted increased from 14.7 in spring 2019 to 15.0 in spring 2020. This held true for new generation students—Pell Grant recipient (14.4 to 14.7), first-generation (14.5 to 14.8), and underrepresented (14.3 vs 14.6)..

Table 2: Spring 2019 and 2020 units attempted by campus and demographic groups

| UC | All Undergraduates | | Pell Recipients | | First Generation | | URG | | African American | | Chicano/Latinx | |
|---------------|--------------------|--------|-----------------|--------|------------------|--------|--------|--------|------------------|--------|----------------|--------|
| | Spr 19 | Srp 20 | Spr 19 | Srp 20 | Spr 19 | Srp 20 | Spr 19 | Srp 20 | Spr 19 | Srp 20 | Spr 19 | Srp 20 |
| UC | 14.7 | 15.0 | 14.4 | 14.7 | 14.5 | 14.8 | 14.3 | 14.6 | 14.3 | 14.7 | 14.3 | 14.6 |
| Berkeley | 14.7 | 14.7 | 14.1 | 14.1 | 14.1 | 14.2 | 14.0 | 14.0 | 13.9 | 14.0 | 14.0 | 14.0 |
| Davis | 14.3 | 14.8 | 14.0 | 14.5 | 14.1 | 14.6 | 14.0 | 14.4 | 13.8 | 14.6 | 14.0 | 14.4 |
| Irvine | 14.9 | 15.2 | 14.5 | 14.8 | 14.6 | 14.9 | 14.5 | 14.7 | 14.6 | 15.0 | 14.5 | 14.7 |
| Los Angeles | 14.7 | 15.4 | 14.4 | 15.0 | 14.4 | 15.0 | 14.3 | 14.8 | 14.4 | 14.9 | 14.3 | 14.8 |
| Merced | 14.8 | 14.8 | 14.8 | 14.8 | 14.7 | 14.8 | 14.8 | 14.8 | 14.7 | 14.8 | 14.8 | 14.9 |
| Riverside | 14.3 | 14.5 | 14.3 | 14.5 | 14.3 | 14.5 | 14.2 | 14.4 | 14.3 | 14.5 | 14.2 | 14.4 |
| San Diego | 15.0 | 15.7 | 14.8 | 15.4 | 14.9 | 15.5 | 14.7 | 15.2 | 14.9 | 15.2 | 14.7 | 15.2 |
| Santa Barbara | 14.3 | 14.5 | 14.0 | 14.3 | 14.2 | 14.4 | 13.9 | 14.2 | 13.9 | 14.4 | 13.9 | 14.2 |
| Santa Cruz | 15.0 | 15.3 | 14.9 | 15.2 | 14.9 | 15.2 | 14.8 | 15.1 | 14.9 | 15.1 | 14.8 | 15.1 |

In addition, summer session directors are reporting that summer enrollments are higher than in prior terms. UCOP will receive final summer enrollment data in the fall to measure how much additional enrollment growth occurred during this period. In January, UCOP will also have degree data to determine if this increased course taking activity yielded any increase in graduation rates. This initial information appears to highlight that, with the changes in grading

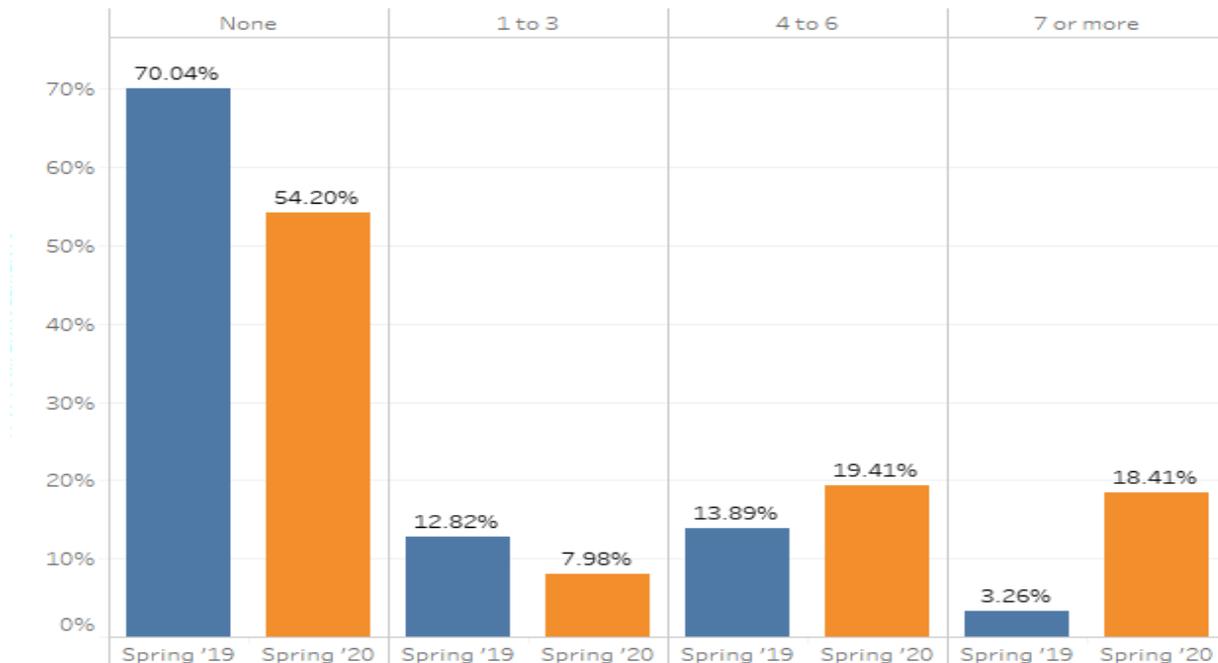
practices and with limited alternatives on other activities (e.g., work, travel) during COVID-19, UC students have taken more courses during this remote instruction period.

Changes to spring 2020 grading practices yielded higher GPAs or more pass/not pass grades

In recognition of the additional stress due to the COVID-19 pandemic and rapid shift to remote instruction, UC campuses provided greater flexibility with grading and drop deadline practices. For example, UC Berkeley adopted pass/not pass as a default grade and most other UC campuses relaxed their pass/not pass policies (e.g., extension of deadlines to opt for a pass/not pass grade). While UCLA continued to have letter grades as the norm, the campus relaxed the policy on when students could withdraw from a course. As a result, there was an increase in GPAs for the term and in the number students taking courses pass/not pass.

At the system, the percentage of undergraduates taking zero units pass/not pass dropped from 70 percent in spring 2019 to 54 percent in spring 2020, while the percent taking seven or more units pass/not pass increased from three percent in spring 2019 to just over 18 percent in spring 2020.

Figure 1: Spring 2019 and 2020 number of units taken pass/not pass



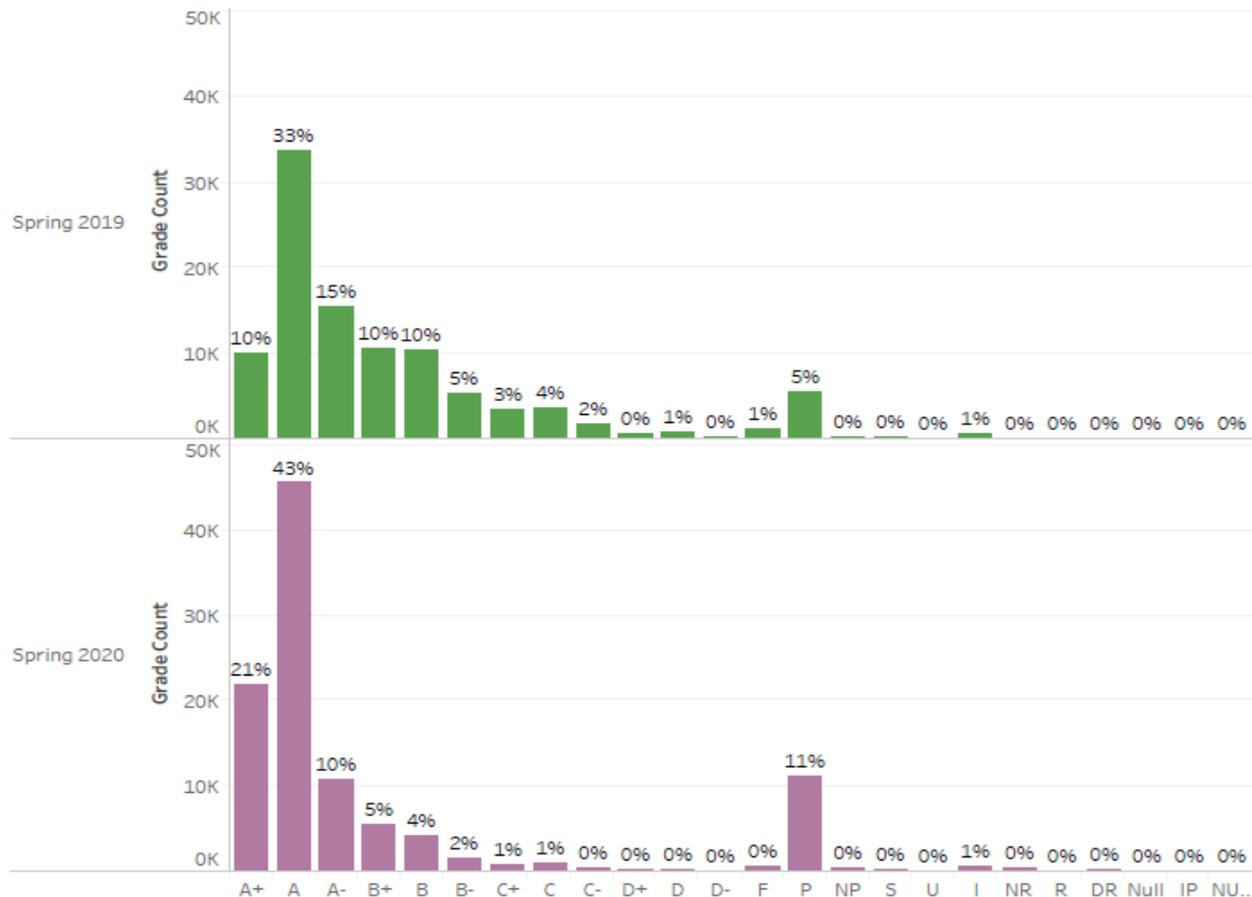
Systemwide, the percentage of students withdrawing from at least one course remained relatively consistent. Figure 2 shows there was some variation on campuses. The percent of students withdrawing from at least one course increased at UC Berkeley from eight to 11 percent, likely because of the shift to remote instruction in the middle of the semester. UCLA and UC Riverside relaxed their policies on when students could withdraw until the end of the term, resulting in a zero percent withdrawal rate in spring 2020.

Figure 2: Percent of students withdrawing from at least one course, spring 2019 and 2020

| | All Students | | Pell Recipients | | First Generation | | African American | | Latinx | |
|---------------|--------------|------|-----------------|------|------------------|------|------------------|------|--------|------|
| UC | 4% | 4% | 4% | 4% | 4% | 3% | 5% | 4% | 4% | 3% |
| Berkeley | 8% | 11% | 8% | 14% | 8% | 13% | 8% | 14% | 8% | 12% |
| Davis | 3% | 4% | 3% | 4% | 3% | 4% | 4% | 5% | 3% | 4% |
| Irvine | 2% | 4% | 2% | 4% | 2% | 4% | 3% | 6% | 2% | 4% |
| Los Angeles | 5% | 0% | 6% | 0% | 6% | 0% | 8% | 0% | 6% | 0% |
| Merced | 6% | 3% | 7% | 3% | 6% | 3% | 7% | 3% | 6% | 3% |
| Riverside | 4% | 0% | 5% | 0% | 4% | 0% | 5% | 0% | 4% | 0% |
| San Diego | 5% | 3% | 6% | 4% | 6% | 4% | 6% | 5% | 5% | 4% |
| Santa Barbara | 1% | 3% | 1% | 3% | 1% | 3% | 2% | 4% | 1% | 3% |
| Santa Cruz | 0% | 1% | 0% | 1% | 0% | 1% | 0% | 1% | 1% | 1% |
| | 2019 | 2020 | 2019 | 2020 | 2019 | 2020 | 2019 | 2020 | 2019 | 2020 |

UCLA created a dashboard to examine grading differences between spring 2019 and spring 2020 overall, by student subpopulations, and by division, departments, and class. As seen in Figure 3, the percentage of courses taken pass/not pass increased from five percent in spring 2019 to 11 percent in spring 2020. In addition, the proportion of A grades provided increased while the proportion of lower grades declined, resulting in an overall increase in average GPA across subpopulations.

Figure 3: UCLA course grade distribution for spring 2019 and spring 2020



UC Davis’s Center for Educational Equity (CEE) also found 11 percent of spring 2020 courses were taken pass/not pass, compared to 4 percent in spring 2019. In Spring 2020, average grades were also higher and withdrawals and incompletes were about the same.

Both campuses are using this data to examine grading equity. For example, UCLA found underrepresented students had lower GPAs than their peers across both terms. While UC Davis found smaller differences in grading based on ethnicity and for first-generation students, the campus found greater differences based on income and for underrepresented groups in STEM fields. These and other UC campuses are using data like this to do a deeper examination of grading practices overall, as well as within key disciplines and introductory courses.

While this flexibility in grading practices was critical to mitigating stress during the COVID-19 pandemic, it also creates an anomaly if one is attempting to use grades to evaluate student performance in courses in 2020 compared to prior terms.

COVID-19 AND REMOTE INSTRUCTION SURVEY RESEARCH

Campuses primarily relied on survey data to collect timely faculty and student perspectives to evaluate remote instruction in spring 2020 and used this information to help prioritize support for

fall 2020 instruction. Appendix 1 provides some examples of these systemwide and campus surveys, with the spring 2020 UC Undergraduate Experience Survey (UCUES) and Systemwide Academic Senate instructor survey providing responses from almost 65,000 members of the UC community. Key findings from these surveys, along with additional information from campus-led survey efforts, are presented below.

Instructors had greater confidence with remote instruction tools than undergraduates

Around 85 percent of instructors responded that they had confidence (okay to very high) using the campuses' learning management system and just over 80 percent responded with a similar level of comfort using remote teaching tools.

Figure 4: Instructor responses to questions about confidence with LMS tools

How confident do you feel using your campuses' learning management system, such as Canvas? (N = 4645)

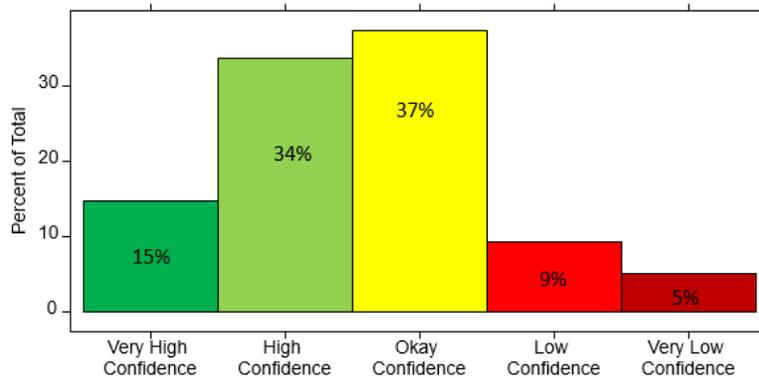
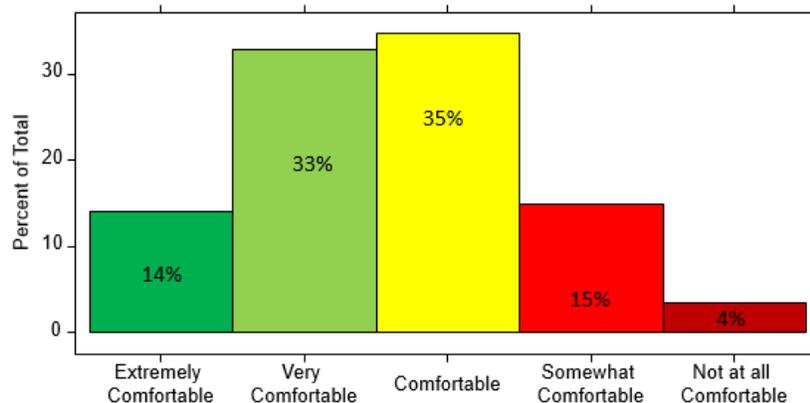


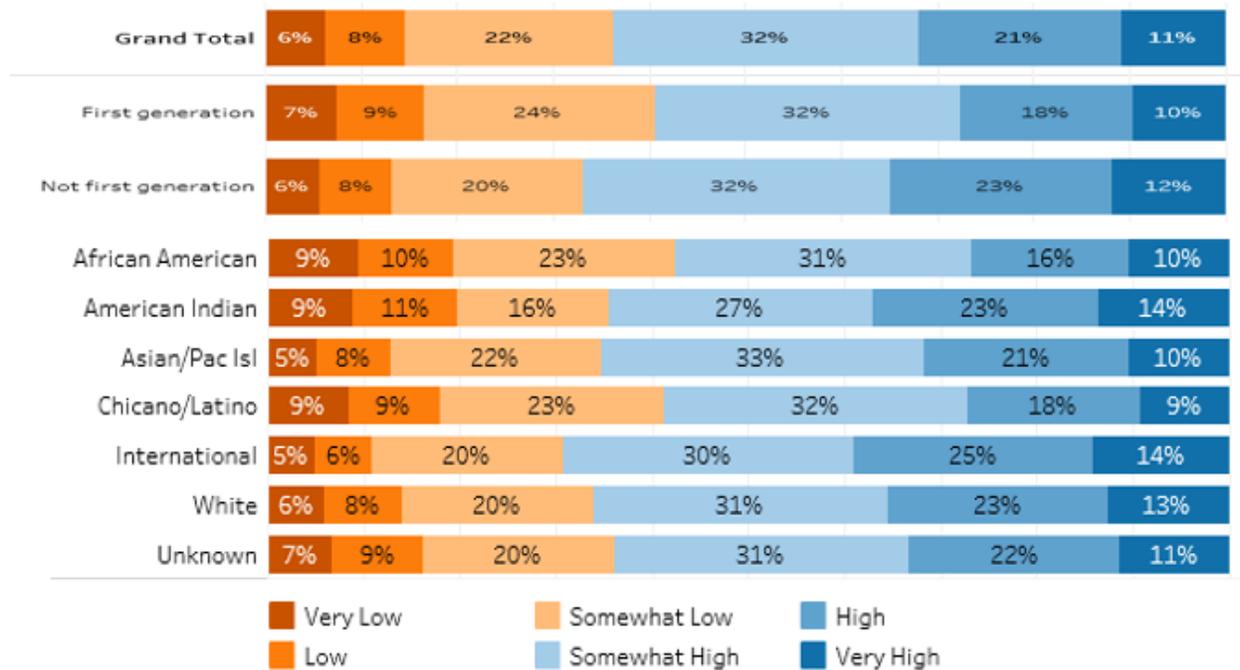
Figure 5: Instructor responses to questions about confidence with remote learning tools

How comfortable are you using remote teaching tools (e.g., Zoom)? (N = 4506)



In comparison, Spring 2020 UCUES results showed 64 percent of undergraduates responding had high confidence (somewhat to very high) about using tools for remote learning, with slightly less confidence for first-generation, African American, and Chicano(a)/Latino(a) students.

Figure 6: Spring 2020 UCUES responses to the statement “my confidence using tools for remote learning is”



This information identified where to prioritize targeted support for existing students. It also emphasized the importance of ensuring incoming students had familiarity and confidence in how to use remote instruction tools and that campus orientation sessions needed to be expanded to meet this need to ensure students had a successful start in the fall.

New generation students were more likely to lack appropriate equipment and study spaces and to have greater family responsibilities due to COVID-19

Access to technology varied in spring 2020. Some faculty purchased additional equipment, like microphones, cameras, and lighting to improve course delivery. Some campuses reported that many of the most sophisticated instructional delivery technologies—ones that required special facilities and classrooms equipped to analyze data and multimedia presentations that instructors could integrate into lectures—could not be accessed with shelter-in-place orders and were therefore not leveraged for remote instruction.

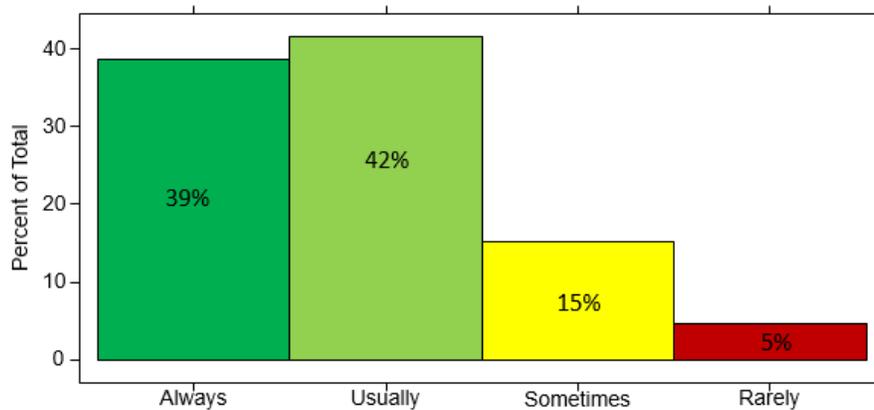
The majority of instructors relied on laptops compared to other devices, and over 85 percent indicated that their laptops, desktops, and tablets were usually or always fast. In addition, more than 80 percent of instructors responded that they always or usually had access to a quiet space to teach, with 20 percent indicating that was sometimes or rarely the case.

Table 3: Instructor Responses to Question “Is Your Device Fast Enough”

| | # | Rarely | Sometimes | Usually | Always |
|------------|-------|--------|-----------|---------|--------|
| Laptop | 4,087 | 2% | 11% | 49% | 37% |
| Desktop | 1,233 | 3% | 8% | 40% | 49% |
| Tablet | 961 | 2% | 9% | 34% | 55% |
| Smartphone | 476 | 4% | 15% | 42% | 38% |

Figure 7: Instructor responses to questions about access to a quiet space to teach

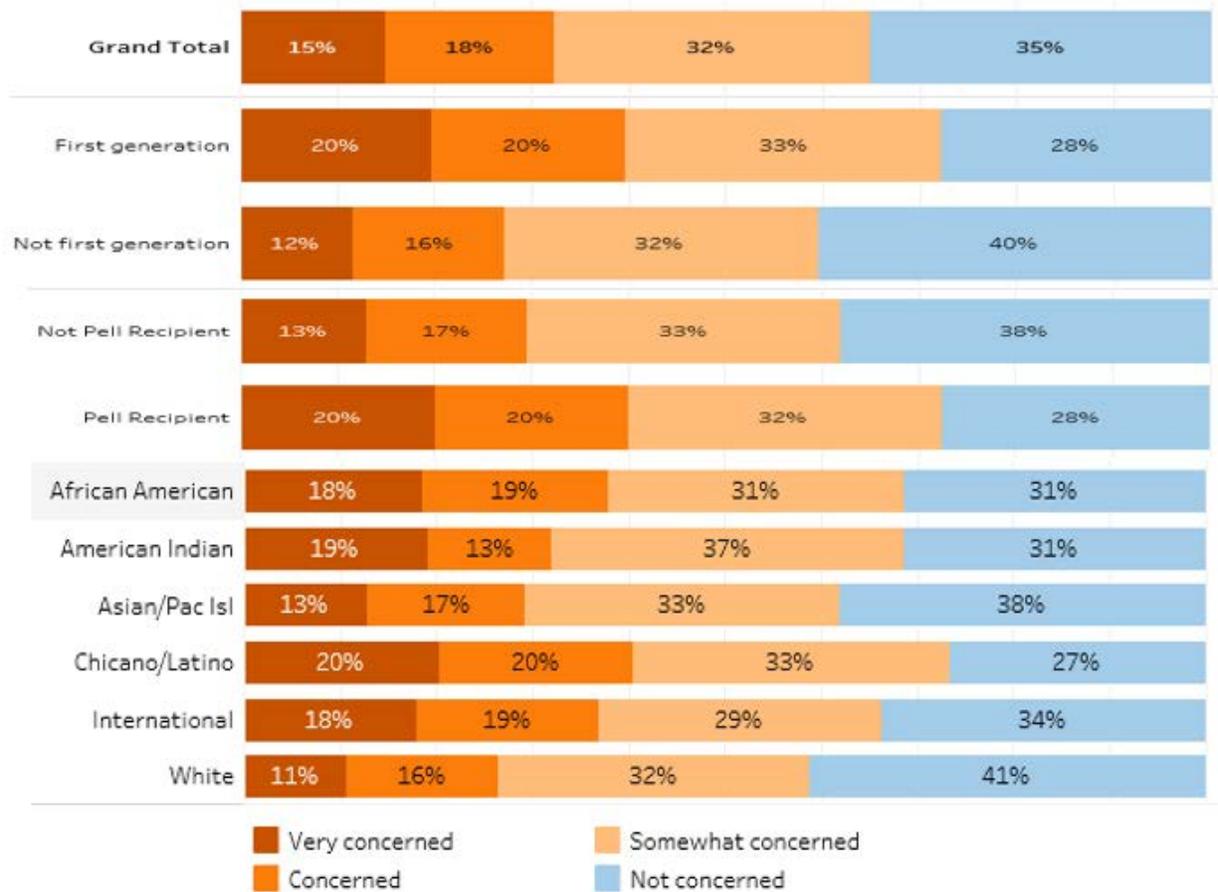
Do you have access to a quiet space to teach? (N = 4807)



With the COVID-19 pandemic, many students returned home. New generation students—first-generation, Pell grant recipients and underrepresented students— were less likely to have both adequate access to the internet and appropriate study space, making remote instruction a greater challenge when compared to peers.

Spring 2020 UCUES data shows 15 percent of undergraduates were very concerned about having reliable access to the internet, but it was five points higher for most new generation students (see figure 8).

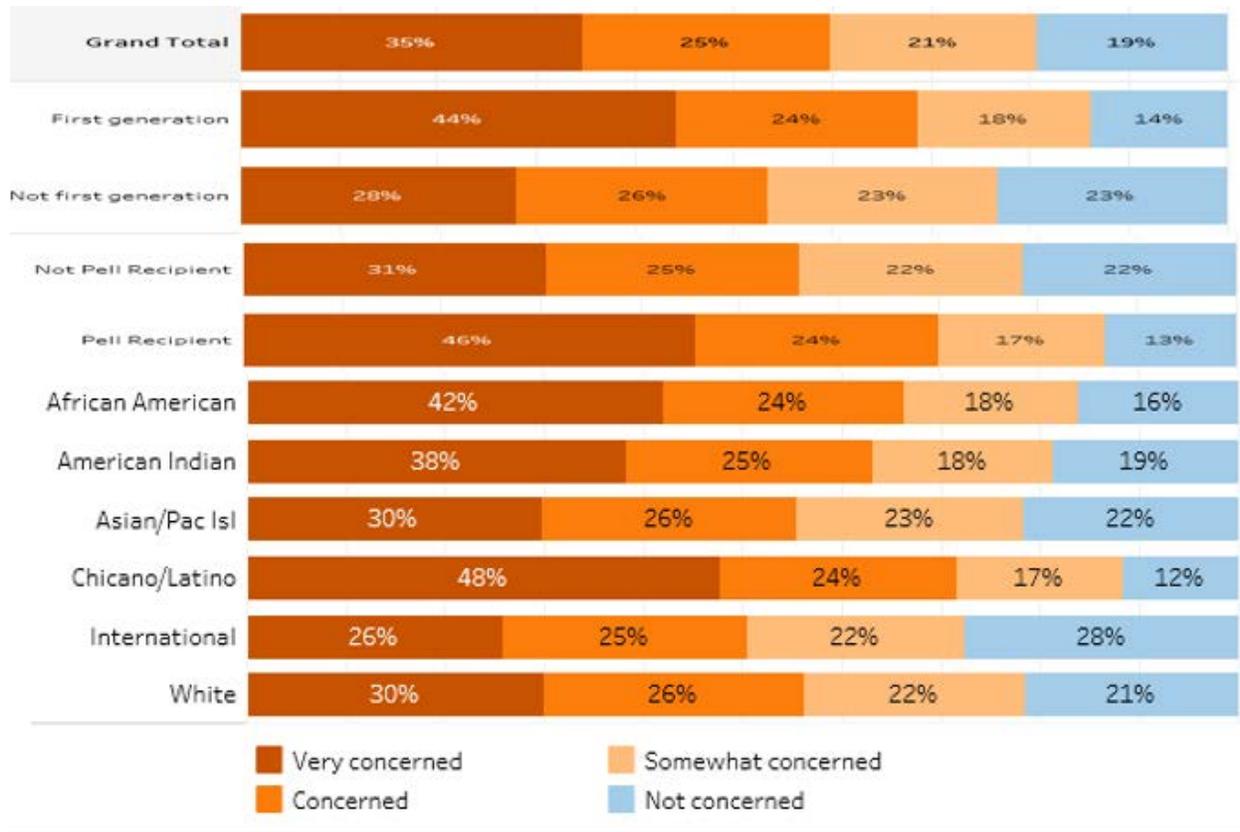
Figure 8: Spring 2020 UCUES responses to the question “how concerned are you about the possible effects of COVID-19 on your learning by having reliable access to the internet?”



UC campuses attempted to assess and meet the technology needs of students by providing laptops and internet hotspots. For example, UC Berkeley conducted a student technology survey to estimate the funds needed to purchase laptops in its Student Technology Equity Program (STEP). Other UC campuses used a range of outreach efforts—communications with deans and department chairs, student service and advising units, and prompts on campus learning management systems—to identify students who needed technology support. Campuses quickly expanded loaner laptop programs and provided financial support to ensure students could get the necessary equipment to support their remote instruction. For graduate students, these equipment needs varied, particularly depending on their disciplinary field, research, or teaching needs.

In addition, 35 percent of all undergraduates were very concerned about having access to an appropriate study space, but it was at least ten points higher for new generation students (see figure 9). These challenges affected students’ ability to fully engage in synchronous remote instruction activities and created greater anxiety when it came to assessment, particularly proctored exams.

Figure 9: Spring 2020 UCUES responses to the question “how concerned are you about the possible effects of COVID-19 on your learning by having access to appropriate study space?”



UC campus and external surveys yielded similar findings. For example, UC Santa Barbara’s remote learning survey found 42 percent of undergraduate respondents lacked a private space to study, 28 percent lacked a reliable internet, and less than 15 percent lacked the necessary equipment—webcam (15 percent), microphone (14 percent) and computer/mobile device (4 percent).

A survey from a UCLA student-led research project found that 27 percent of UCLA undergraduates reported their ability to succeed and participate in remote learning was limited by their access to technology, compared to 31 percent of Program for Excellence in Education and Research in the Sciences (PEERS) which is UCLA’s largest academic support program for science and math majors from underrepresented and underserved backgrounds and 38 percent of Academic Advancement Program (AAP) which is UCLA’s academic support program focused on the success of undergraduates from diverse backgrounds respondents. A UCLA Graduate and Professional Student Survey also found first-generation students and students with disabilities had greater concerns about reliable access to the internet and appropriate study space.

UC is not alone in seeing these differences. Results from the Student Experience at a Research University undergraduate survey of nine non-UC research universities found 23 percent of first-generation students faced more challenges in adapting to remote instruction because of the lack

of necessary technology, compared to 14 percent of peers. In addition, 61 percent of first-generation undergraduates lacked adequate study space, compared to 54 percent of peers.

New generation students were also more likely to face challenges beyond their academic experience. Spring 2020 UCUES results found greater proportions of new generation students were very concerned about the possible effects that COVID-19 would have on their ability to pay bills, meet basic needs, and access healthcare, with:

- 52 percent of Pell Grant recipients very concerned about their ability to pay bills, compared to 32 percent of non-Pell Grant recipients
- 33 percent of Pell Grant recipients very concerned about their ability to meet basic needs, compared to 16 percent of non-Pell Grant recipients
- 37 percent of Pell Grant recipients very concerned about their ability to access health care, compared to 21 percent of non-Pell Grant recipients

Early results from UC Irvine's Next Generation Undergraduate Success Measurement Project also found:

- Many students had new responsibilities related to caring for their families and siblings
- Students' stress related to academic demands increased after the campus moved to remote instruction
- 80 percent of students were concerned the shift to remote instruction will cause disruptions to their academic progress

The UCLA student-led research project found students with diverse backgrounds had greater concerns due to COVID-19 and not being on campus, specifically:

- 69 percent of PEERS and 56 percent of APP participants, compared to 37 percent of UCLA students overall, had more responsibilities assisting siblings with remote learning
- 79 percent of PEERS and 75 percent of APP participants, compared to 67 percent of UCLA students overall, had a harder time balancing school and household responsibilities
- 64 percent of APP and 54 percent of PEERS participants, compared to 49 percent of UCLA students overall, had a family member lose a job
- 70 percent of PEERS and 66 percent of APP participants, compared to 51 percent of UCLA students overall, reported having better healthy food choices when on campus

Students had greater concerns about labs and studio courses being offered remotely compared to live or taped lectures.

It is impossible at this time to decouple an assessment of the remote learning experience from the COVID-19 experience. As one instructor stated, "I think that far less is being learned right now because our students are expected to attend classes that still have typical exams, paper assignments, etc. during a pandemic. We are in a crisis, and no amount of online maneuvering can ease the extreme anxiety and grieving that our students are experiencing."

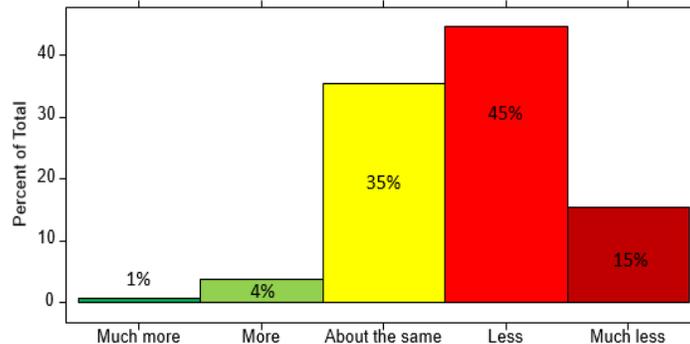
In addition, it is clear that instructors and students prefer in-person instruction to remote delivery. However, this survey data does provide some insight into which courses may need to be prioritized for on-campus delivery when possible.

Instructor and student survey respondents identified strengths and weaknesses associated with synchronous (live) or asynchronous (recorded) lectures. Live lectures could provide timely opportunities for discussions among instructors and students, sometimes with one another. For students with unstable internet access, who lack of a quiet study space, or are in a different time zone, recorded lectures provided less stress and greater flexibility on when to access material. A number of students also appreciated the ability to review taped lectures as needed. But both instructors and students agreed that neither remote modality was better than in-person classes.

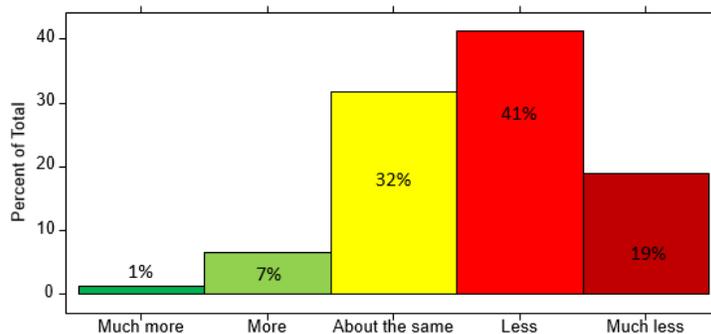
Sixty percent of instructors surveyed felt their students learned less or much less with synchronous and asynchronous lectures compared to in-person classes (figures 10 and 11).

Figures 10 and 11: Instructor responses to questions about amount learned in synchronous and asynchronous remote instruction lectures

Compared to in-person classes, at this stage, do you think your students have learned more or learned less from synchronous lectures delivered remotely? (N = 3832)



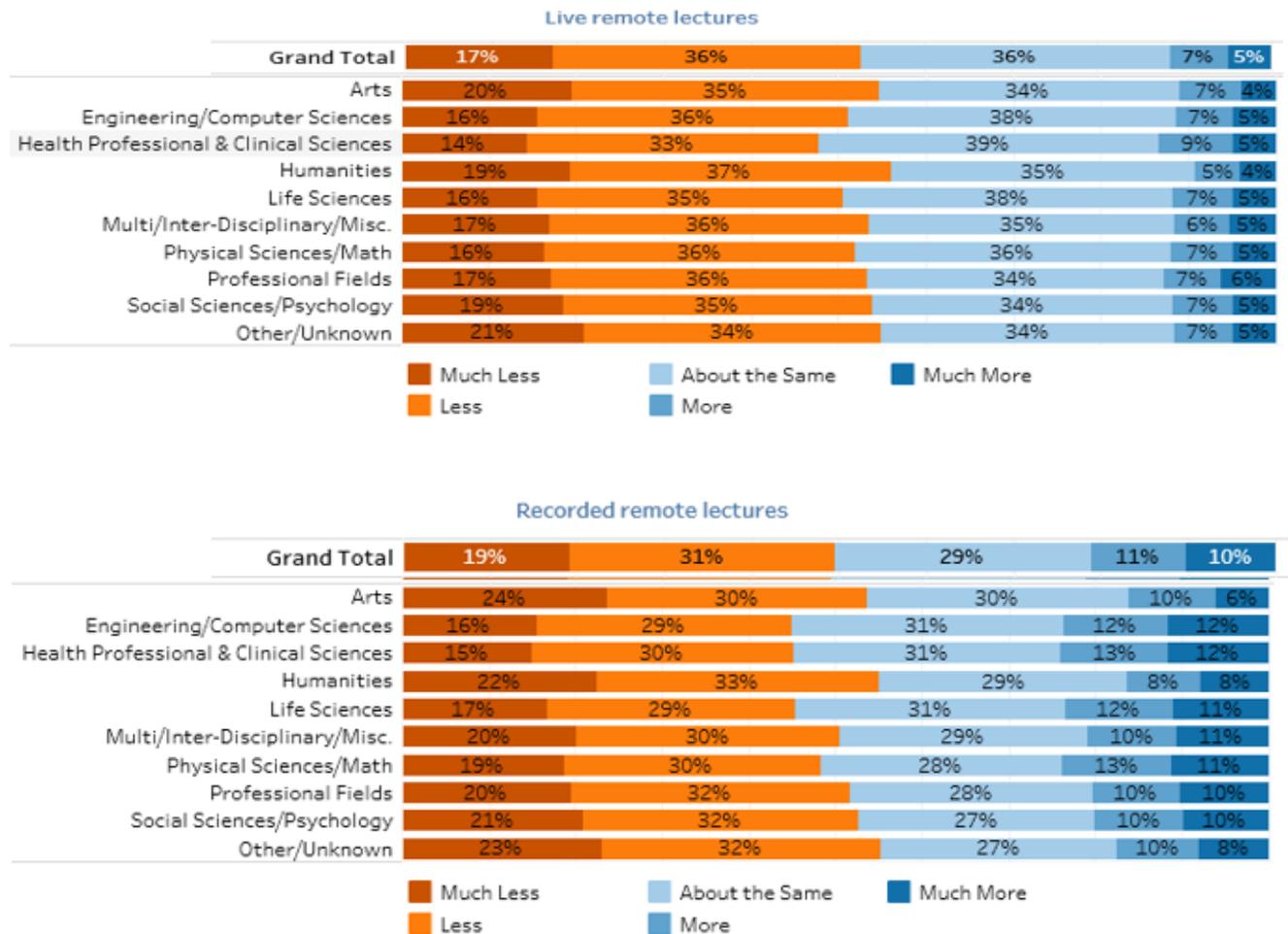
Compared to in-person classes, at this stage, do you think your students have learned more or learned less from asynchronous lectures delivered remotely? (N = 2447)



For undergraduates, 53 percent believed they learned less or much less in live remote lectures (Figure 12), and 50 percent in taped remote lectures (figure 13), than in in-person courses.

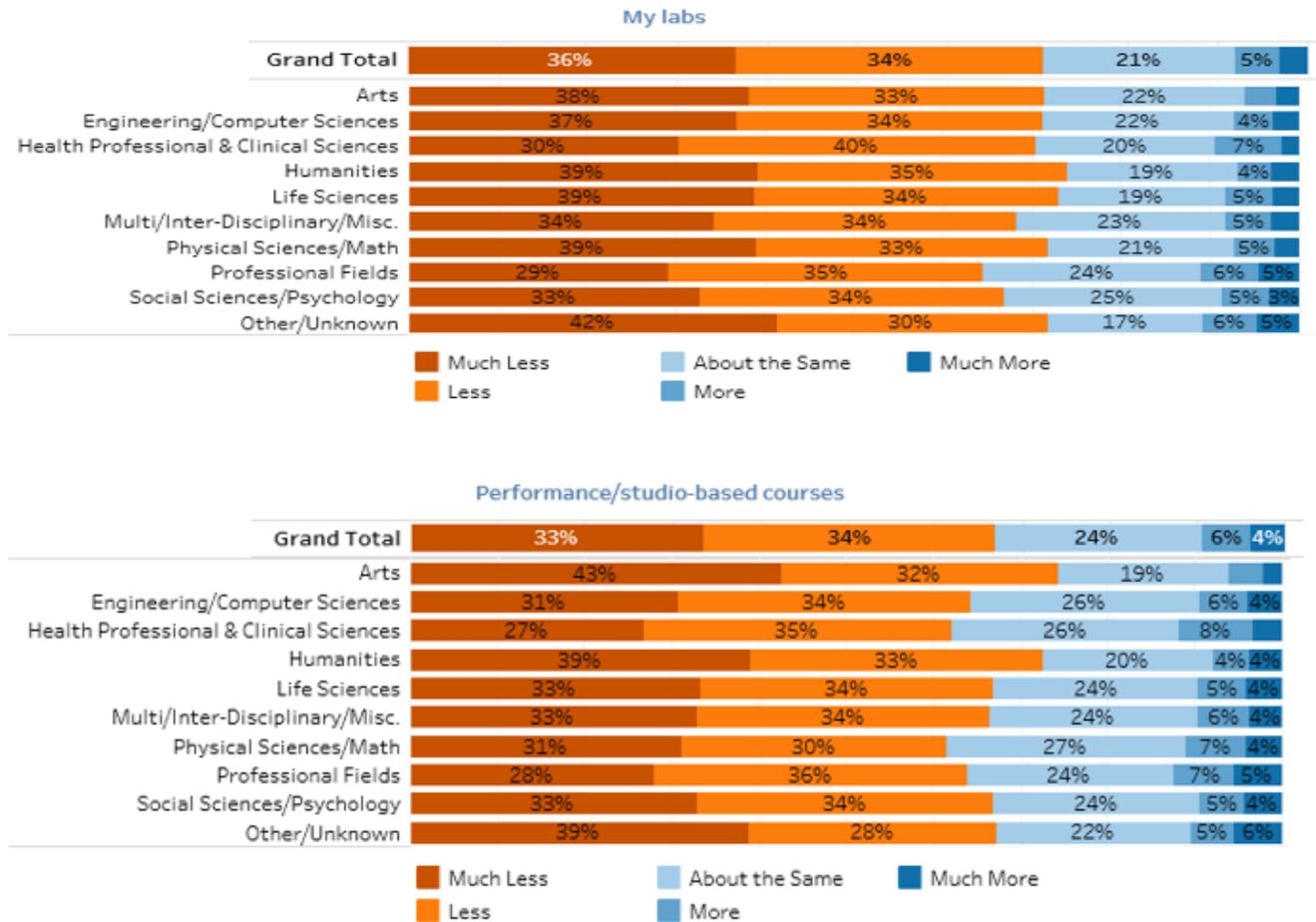
Undergraduates in the arts and humanities expressed greater concern about both types of remote instruction.

Figures 12 and 13: Spring 2020 UCUES responses to the questions “compared to in-person classes, how much have you learned from the following methods of remote instruction?”



However, remote lectures in either format fared better when compared to survey responses about laboratory and studio-based courses. Over 70 percent of spring 2020 UCUES respondents said they learned less or much less in remote laboratory courses (figure 14), and 67 percent said they learned much less in remote studio-based courses (figure 15), than in-person classes, with greater concern regarding remote studio-based courses for those in arts and humanities disciplines.

Figures 14 and 15: Spring 2020 UCUES responses to the questions “compared to in-person classes, how much have you learned from the following methods of remote instruction?”



Emergency remote instruction is different from online instruction

Faculty have been emphatic that remote presentation of an in-person course is very different than a course that has been designed for delivery in an online format. The data bear that out.

Twenty-six percent of instructor respondents had previous experience teaching courses with both face-to-face and remote components (e.g., flipped classrooms or other hybrid designs) and 13 percent of respondents had experience teaching a course entirely online. Of those who had previous online experience, 24 percent indicated the remote teaching experience was better, but 45 percent indicated it was worse (figure 16). For undergraduates who previously took online courses, 64 percent agreed that remote learning was worse than prior online experiences (figure 17).

Figure 16: Instructor responses to question assessing remote teaching experience to prior online teaching experience

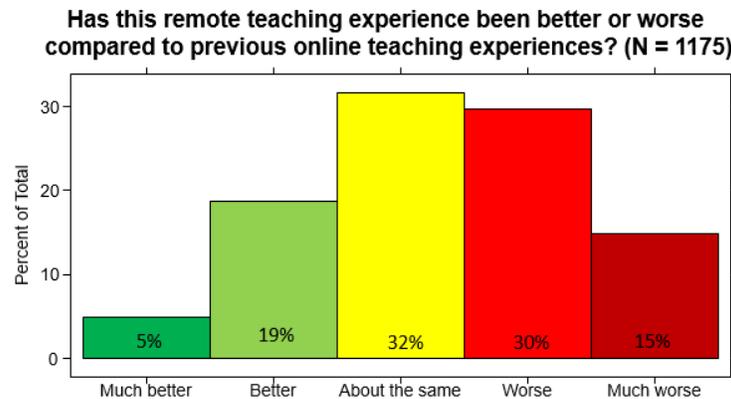
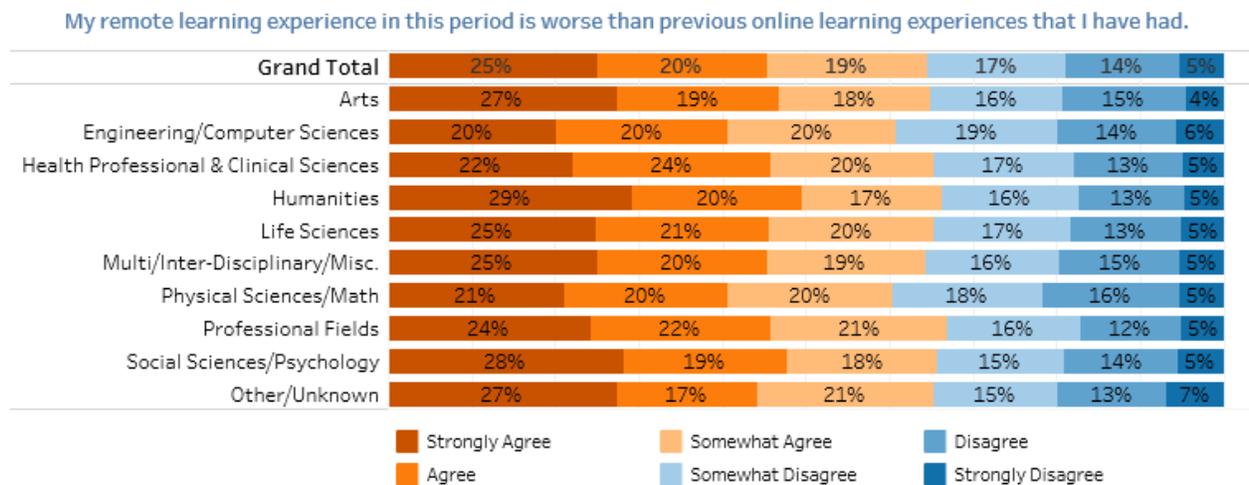


Figure 17: Spring 2020 UCUES response to statement “my remote learning experience in this period is worse than previous online learning experiences that I have had”



These findings reinforce that remote instruction (i.e., an in-person course which is then provided online) is different from online instruction (i.e., a course designed for online teaching using online learning design principles). Both are a challenge in the middle of a pandemic, but there may be greater challenges in laboratories and studios compare to live or recorded lectures.

The quality of faculty and student interactions in remote instruction were of greater concern than course communications

While instructors expressed greater concern about communicating expectations about courses and online instruction, undergraduates had fewer concerns in those areas. Forty percent of instructor respondents indicated it was hard or very hard to communicate course expectations, and 46 percent indicated it was hard or very hard to answer student questions. Spring 2020 UCUES responses revealed that more than half of undergraduates found communication about

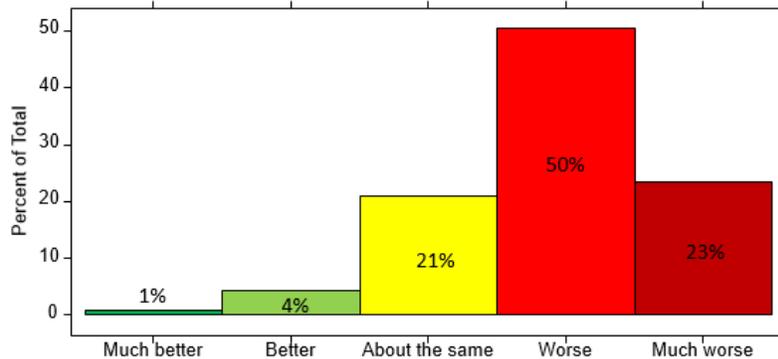
course expectations, along with the quality and timeliness of feedback on courses work, about the same. Thirty-three percent, 36 percent, and 32 percent found communication, quality and timeliness in each area was worse or much worse. There were no significant differences for new generation students or across academic disciplines.

In addition, in UC Santa Barbara’s remote learning survey, almost 50 percent of respondents indicated they always or usually understood the expectations and requirements of course assignments, with another 32 percent responding they sometimes understood course expectations and requirements.

Across the board, faculty, graduate student instructors (GSIs) or teaching assistants (TAs), and students highlighted challenges about the quality of interactions. These included the loss of casual contact before or after class, inability to see social cues or read faces to determine if students are grasping materials, and reluctance to ask questions in recorded lectures. Over 70 percent of instructors believed the quality of interactions with students was worse or much worse when compared to in-person classes.

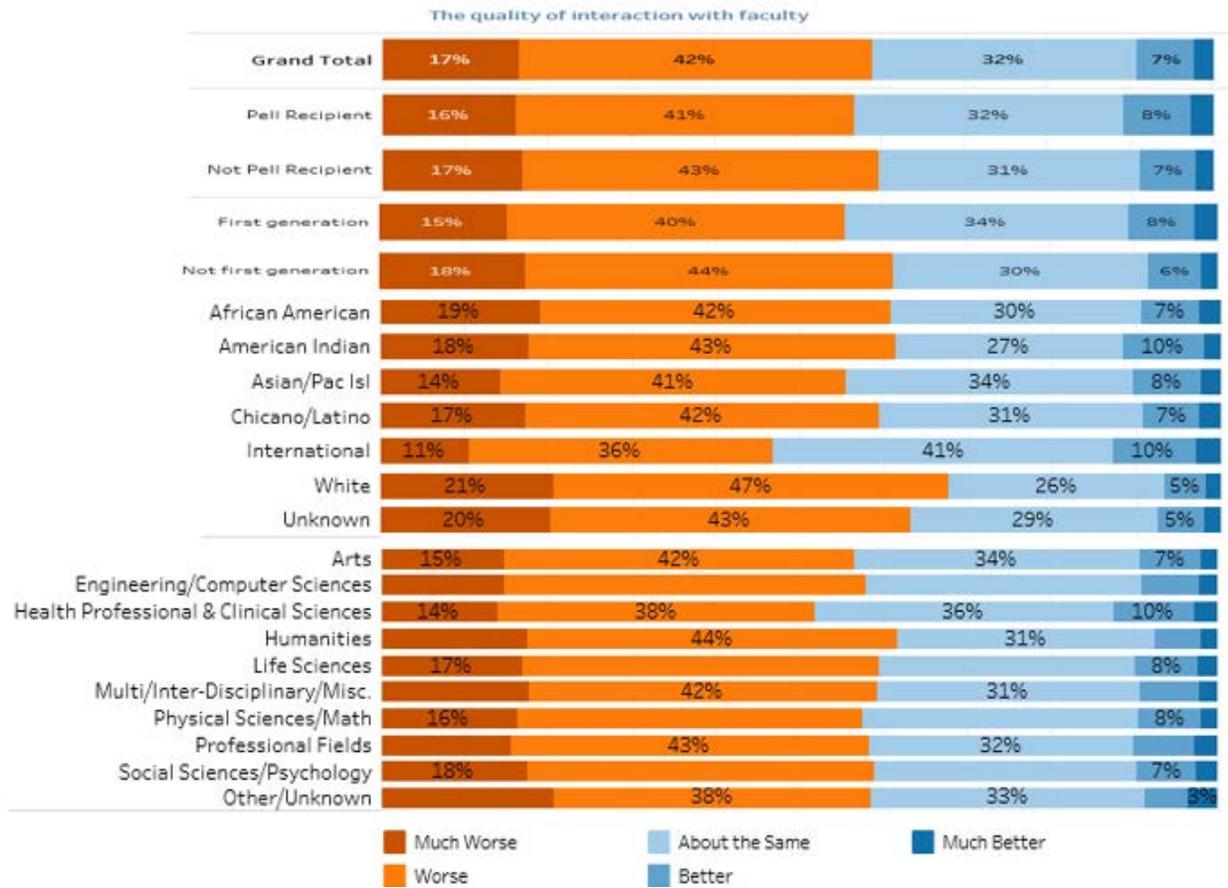
Figure 18: Instructor responses to question assessing the quality of interactions with students

Compared to in-person classes, was the quality of interactions with your students better or worse during this period of remote teaching? (N = 4487)



Spring 2020 UCUES responses show, almost 60 percent of undergraduate respondents found the quality of interaction with faculty worse or much worse when compared to in-person classes (Figure 19). Responses were relatively consistent, with slightly better responses from undergraduates in health professional and clinical sciences discipline and international students. White student expressed greater concerns.

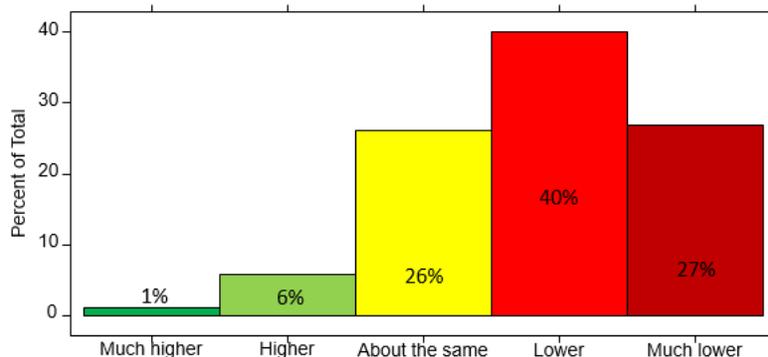
Figure 19: Spring 2020 UCUES response to statement “compared to in-person classes, the quality of interaction with faculty was”



Just under 70 percent of instructors reported they had lower or much lower student participation in synchronous lectures, compared to in-person classes.

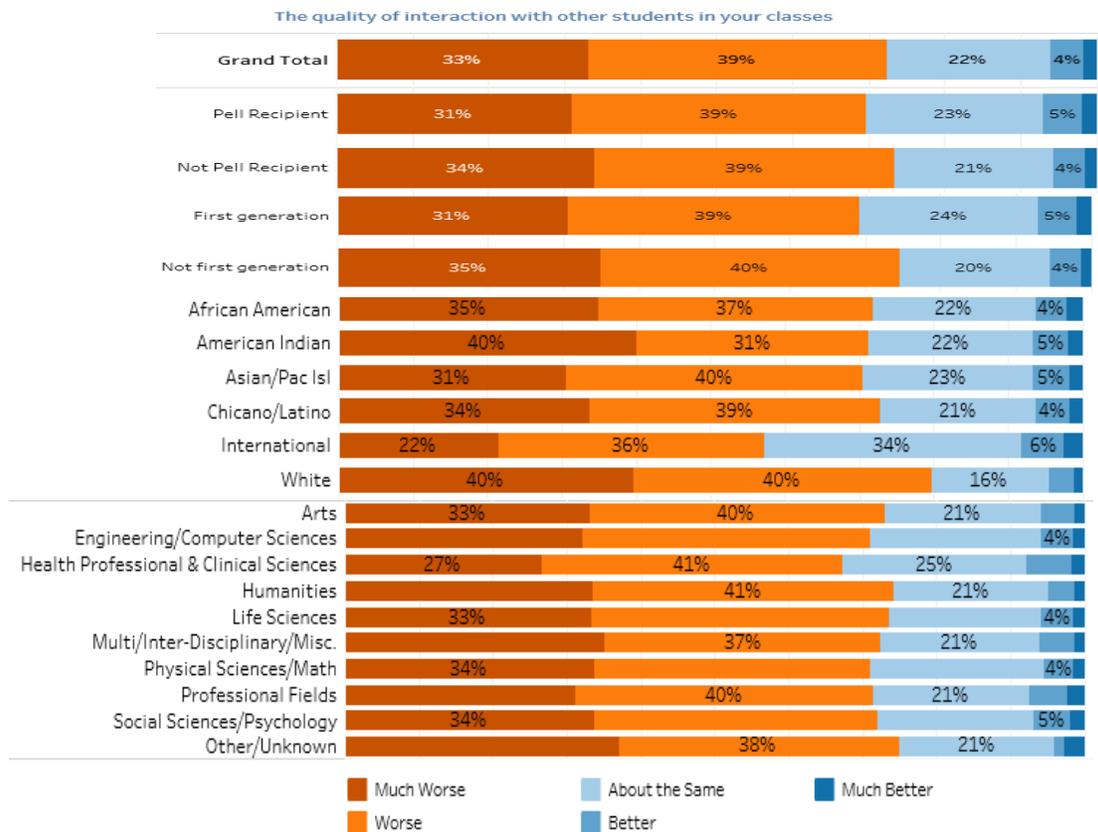
Figure 20: Instructor responses to question assessing the amount of student participation in synchronous lectures

Compared to in-person classes, is the amount of student participation in synchronous lectures higher or lower? (N = 3843)



Of greater concern to students was their interaction with one another. Spring 2020 UCUES responses showed just over 70 percent responded that the quality of interaction with other students in class was worse or much worse (figure 21). Lower percentages of undergraduates in health professional & clinical science discipline, international and first-generation students, and Pell Grant recipients reported that this interaction was worse or much worse.

Figure 21: Spring 2020 UCUES response to statement “compared to in-person classes, the quality of interaction with faculty was”



UC

UC Santa Barbara’s spring 2020 Remote Learning Survey found students had greater clarity on how to communicate with instructors and TAs, compared to peers/classmates. More than 50 percent of undergraduates responding to UCLA’s Course survey disagreed or strongly disagreed with the statement “I felt a sense of connection with my classmates.”

Furthermore, 72 percent of spring 2020 UCUES respondents reported their feelings of loneliness were worse or much worse. These percentages were consistent over most students groups when looking at first-generation or Pell Grant status, race/ethnicity, or academic discipline. These findings not only trigger mental health concerns, but are likely also associated with lesser sense of belonging (a factor that is critical for first-year retention and timely graduation).

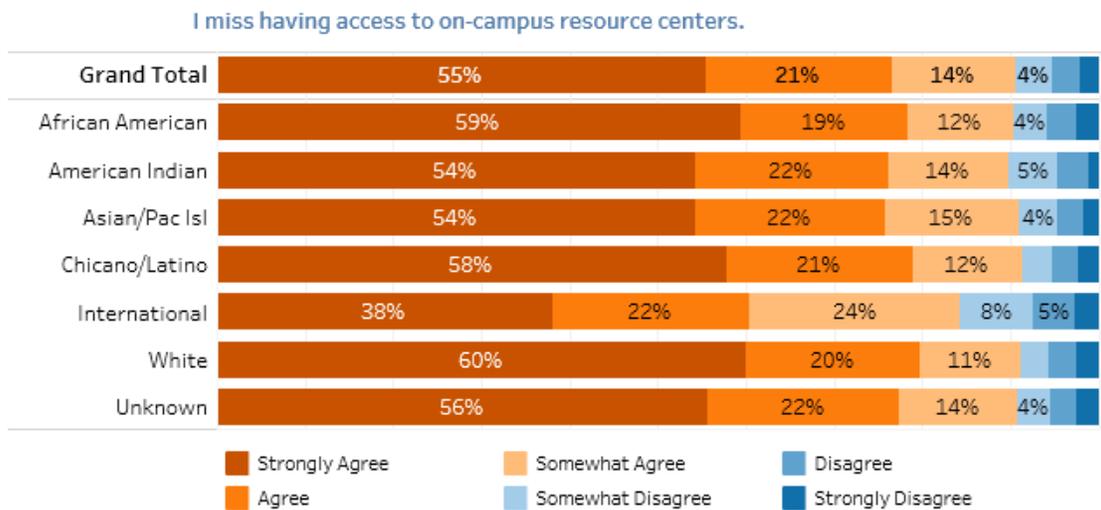
Students missed on-campus support services with fewer using services provided remotely

Some campus surveys identified practices that students thought would be effective or support them in the upcoming term. For example, respondents to UC Santa Barbara’s Remote Learning Survey respondents’ top three areas where they wanted more support for the upcoming term were time management (60 percent), focus/concentration with independent work or studying (57 percent), and focus/concentration with pre-recorded lectures (56 percent).

In addition, the UCLA Course survey compared the frequency of various activities associated with courses and the perceived level of effectiveness. For example, over 60 percent indicated they had watched recorded materials of lectures or class meetings, and almost half found that very effective. In addition, almost 45 percent reported small group meetings with instructors and TAs were very effective, though it was a practice used less frequently.

A majority of spring 2020 UCUES respondents (55 percent) strongly agreed with the statement that they missed having access to on-campus resource centers—almost 60 percent for African American and Chicano(a)/Latino(a) students.

Figure 22: Spring 2020 UCUES response to statement “I miss having access to on-campus resource centers.”



Despite shifting advising and student support services functions to a remote environment, fewer students were leveraging these resources. UC Santa Barbara’s Spring 2020 Remote Learning Survey found 83 percent of respondents had used academic advising in the past, but only 38 percent had done so since moving to remote instruction. Some of the top reasons they had not used these services included being too busy with schoolwork (55 percent), not needing the support (39 percent), not being aware it was available now (34 percent), not liking meetings by phone or video (34 percent), being too busy with household/family obligations (33 percent), and not having sufficient privacy (26 percent).

RETURN TO LEARN PREPARATIONS

UCOP and campuses broadly disseminated institutional and survey data to support planning for fall instructional activities. UCOP's Institutional Research & Academic Planning (IRAP) created a dashboard to report rolling, preliminary spring 2020 UCUES results at the system and campus level to support executive vice chancellors, undergraduate deans, and others facilitating return to learn activities in the fall. UC Davis is producing a dashboard with its campus UCUES results by major so that departments can better understand the most pressing needs for students. The campus is also incorporating survey findings about student needs into its "know your student" dashboards that help instructors' understand and better support students in their courses. Systemwide and campus survey findings were presented to work groups tasked with planning for the fall, centers for teaching and learning and instructors redesigning courses, and the campus community as a whole. UC Santa Barbara hosted a webinar to discuss findings from its spring 2020 Remote Instruction Survey.

To address instructor and student concerns about the quality of remote instruction classes, campuses increased investments and support to improve courses that would be offered in the fall. Instructors also had access to course development technology and time over the summer to transfer fall 2020 courses to remote instruction. Some campuses made major investments in the most popular courses taken by incoming students to leverage technology better and improve instructional quality. For example, UC Berkeley and UC Davis made a full term of the most popular courses taken by entering students accessible via cloud servers. UC Riverside is also investing in a campuswide digital infrastructure that will greatly improve how classes are delivered. Campuses are also identifying courses that should be prioritized for on-campus instruction, like laboratory and studio-based courses, which either were cancelled in spring 2020 or about which instructors and students expressed greater concerns with the remote instruction delivery.

UC campuses created Keep Teaching and Keep Learning websites in spring 2020 to provide a "one-stop-shop" with support for instructors and students. Campuses updated these sites to include best practices identified in spring 2020 to address challenges raised by students and faculty. For example, faculty and students expressed concerns over the quality of interactions in courses and ability to focus on course content. In response, UC Merced encouraged faculty to use learning analytics in their learning management systems (LMS) to monitor student performance and engagement. If students were not responsive, instructors were directed to reach out to the campus Student Response Team, whose function had expanded to help connect students in potential academic difficulty with resources and support.

Survey results also highlighted a need to ensure students understood remote learning tools and how to access academic support like advisors. It also emphasized a need to create community and promote a sense of belonging during this remote instruction period. Campuses needed to think about how to incorporate this information into new student orientation, summer bridge and transfer edge activities which are primarily, if not entirely, being provided online. UC Riverside promoted crossover collaborations with undergraduate education and the student affairs office around orientation efforts and ways to support critical gaps in students' academic and community needs.

A number of campuses increased investments to support technology needs for students. UC Berkeley's multi-million dollar investment in its Student Technology Equity Program provides access to laptops and internet hotspots to students in need. UC San Diego's technology loaner programs provide support to graduate students, sometimes facilitating individual needs for equipment to continue research.

Furthermore, with limited residential housing opportunities available, many campuses are prioritizing access to students who have a greater need for on-campus resources (e.g., reliable internet, study spaces, food security).

Finally, a number of campuses are examining ways to promote grade equity, with UCLA using its grading dashboard to discuss equitable versus inequitable course grading practices (e.g., criterion vs. norm-referenced grading). UC Irvine is also rethinking methods of assessment, from closed-book proctored exams to numerous open book assessments and group assignments that encourage collaboration while learning content.

PLANNED AND ONGOING DATA COLLECTION AND RESEARCH

UC efforts to collect and analyze data regarding remote instruction, along with student outcomes and experience will continue. UCOP will be able to examine systemwide summer and fall enrollment data in December 2020 and first-year retention and graduation data in January 2021. Not only will this year's analysis examine who does not return, but when they dropped out (i.e., in the fall when instruction was on-campus or in the spring when instruction was remote). It will also examine whether the increase in the average number of units taken per student in spring and summer terms affects graduation rates.

Campus research will also provide deeper insight into the impact of remote instruction, along with possible opportunities to rethink UC's educational delivery.

Because of changes in grading policies and practices during the spring term, GPA and course grades will not provide the same insight into student performance as it has in the past. A UC Berkeley research project may address that issue in its evaluation of the impact of remote instruction on learning in spring 2020. The research design focuses on measuring the difference in performance of courses taken in fall 2020 between Berkeley students who satisfied prerequisites during the impacted semester (i.e., spring 2020), versus those who satisfied prerequisites during a non-impacted semester. This aspect of the research is under way and will be finalized by spring 2021.

As a part of its accreditation effort, UCLA's Division of Undergraduate Education is arranging an assessment of student work to compare students' attainment of capstone-type outcomes when taught remotely to their attainment when taught in person. Capstone papers submitted in spring 2020 will be compared to prior ones submitted; student poster and recorded presentations from this year's virtual UG Research Week will be compared to those from prior UG Research Weeks done in person. The campus will examine the amount and type of student contact with faculty in the development of that work, pedagogy used when students were taught remotely, and specific measures of student performance. These results will be included in the campus's WASC Senior

College and University Commission (WSCUC) departmental self-study report to be submitted as part of the accreditation process.

Some campuses are ramping up efforts to better assess educational outcomes during fall 2020 remote instruction. UCLA’s School of Education and Information Science is developing various survey instruments to capture fall experience through a variety of measures, and UC Merced is engaging in assessment planning to support ongoing, formative data collection in the fall. UC Berkeley will be conducting research in fall 2020 to assess the impact of its Semester in the Cloud training on student learning outcomes. The campus is also hiring a data scientist who will work with its Center for Teaching and Learning to assess the impact of remote learning.

At the September ASAC meeting, the UC Irvine Next Generation Undergraduate Success Measurement Project’s lead researcher will discuss this work. The project is planning to add another cohort of students starting in fall 2020 who will have begun with remote instruction. Existing study participants will have started with on-campus instruction and then transitioned to remote instruction with some study participants remaining on campus and many returning home. In addition, UC Irvine already offered a number of courses online before COVID-19. This research team is in a unique position to not only assess the experience of on-campus, remote instruction, and online courses for incoming freshman, junior transfers, and continuing juniors, but also do so for those who live on-campus or off-campus (e.g., at home). As a result, these researchers will be able to provide insight into the impact of the pandemic on academic outcomes, the effectiveness of online or remote instruction for student learning, and the relative costs and benefits of different student residential options (on-campus, around-campus, commuting from familial home)—all areas which may address some of the longer-term questions about educational delivery at UC.

CONCLUSION

This COVID-19 update provides additional data on the spring 2020 remote instruction period, along with how this information informed decisions and support for fall instruction. UCOP and campuses will continue to collect data and conduct research that can help us better understand the impact of remote instruction, along with identifying opportunities to rethink UC’s educational delivery model.

Key to Acronyms

| | |
|-------|--|
| APP | Academic Advancement Program |
| CEE | Center for Educational Effectiveness |
| IRAP | Institutional Research and Academic Planning |
| PEERS | Program for Excellence in Education and Research in the Sciences |
| SERU | Student Experience at a Research University |
| STEP | Student Technology Equity Program |
| UCOP | UC Office of the President |
| UCUES | UC Undergraduate Experience Survey |

Appendix 1

Examples of spring 2020 systemwide and campus surveys on remote instruction

UC Undergraduate Experience Survey (UCUES) with over 60,000 responses

UC Systemwide Academic Senate instructor survey with over 4,300 responses

UC Berkeley conducted numerous surveys, including a student technology survey used to determine funding levels for the Student Technology Equity Program (STEP)

UC Davis's Center for Educational Effectiveness (CEE) remote instruction student and faculty experience surveys, along with a spring technology readiness survey

UCLA-HHMI Health Disparities Program student research project that surveyed fellow UCLA students, including those participating in the Academic Advancement Program (AAP) and Program for Excellence in Education and Research in the Sciences (PEERS)

UCLA course survey with almost 2,100 unique student and 5,000 total course responses

UCLA Graduate and Professional Student Survey with over 2,100 respondents

UC Merced People First COVID-19 Experience survey of faculty and graduate students

UC Riverside's learning center (XCITE) departmental and instructor surveys

UC Santa Barbara remote learning survey of over 1,640 undergraduate respondents