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COVID19 Student Survey Spring 2020: Access to Technology/Digital Access

Research Brief #205

College of the Canyons

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COLLEGE OF THE CANYONS

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Introduction & Background

As part of the adjustment to, and assessment of the impact of the shift to remote/online operations due to COVID19, the office of Institutional Research, Planning and Institutional Effectiveness administered a student survey to examine experiences and needs of students' in light of this drastic change in college operations and instruction. One component of the survey was to assess the technological needs and digital access experiences of students and this report (#205), as one in the series of research briefs on the COVID19 student survey (#203 thru #209), presents the results pertaining to these topics. *Digital access* is described as the ability to fully participate in digital society and serves as an indicator for assessing students' learning and academic performance (Ribble & Bailey, 2007). This includes access to tools and technologies, such as the nternet and computers that allow for full participation.

Method

Survey Instrument

The online survey consisted of technology-related questions on:

- Devices (access to a device, type of device used for coursework, and effectiveness of device in completing coursework)
- Internet (access before and after, reliability of internet connection, and awareness of discounted internet service)
- Comfort with technology

Responses to questions related to these topics from 3,697 students were analyzed and disaggregated by various factors. Some of the questions provided students the option to further expand on their responses in open-responses. These responses were coded into themes and where relevant, when an open-response aligned with a given response alternative, it was included in the frequency count for that response alternative.

Results

Technological Devices

Several questions on students' access to devices were asked on the survey. Most students indicated that they had access to a working device (98%), this included whether the device was personally owned (86%), shared with others (10%) or was college-provided (2%). The 98% who reported owning a device is consistent with nationwide polls where 96% of 18-29 year olds report owning a smartphone (PEW 2019 Mobile Fact Sheet).

Those who indicated that they did not have access to a device (2%) further explained by providing comments. A total of 43 students' open-responses were coded and the most common theme was that the device was slow/unreliable/outdated (15 students) followed by those who referred to issues related to internet access and reliability (14 students). Table 1 below provides additional themes found in the open-responses.

Table 1. Comments for not having access to a device

Themes	N
Device is slow/not working/ unreliable/outdated/broken	15
Internet/Wifi problems	14
Borrowed Device/Use work computer	6
COC computer loan did not work out	5
Using cell phone	5
Computer can't run special programs/not compatible	2
Other	10

The type of device used to do most classwork was most commonly reported to be a personal computer (87%), followed by a Tablet/iPad (5%, 144 students) and Cell Phone (4%, 113 students). Latinx students and African American/Black students are overrepresented among students who use their cell-phone for most classwork (Latinx, 48% among cell-phone users and 33% of respondents; African American/Black, 6% among cell-phone users and 3% among respondents). A total of 72 students (2%) indicated that they were using a college-provided device. Figure 1 provides the distribution of having access to a device and the type of device most often used.

Figure 1. Access to Device and Device used for classwork.
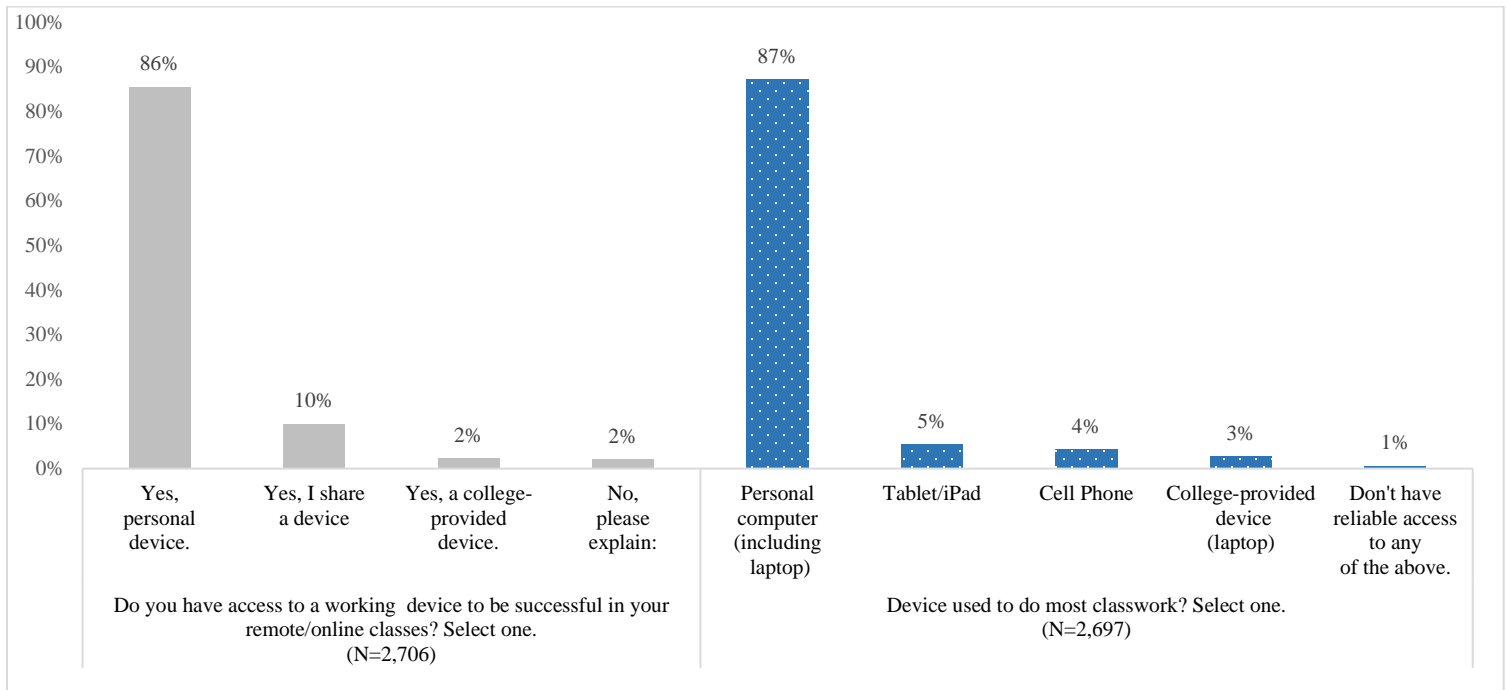
Overall 91% of the respondents indicated that the device they mostly used for classwork allowed students to participate effectively in online courses. When disaggregated by type of device, those who used a cell-phone for most of their classwork were the least likely to indicate that their device allowed for effective participation (65%) followed by Tablet/iPad (87%) and college-provided laptop (88%). Those who use a personal computer had the highest rate for indicating that they were able to effectively participate.

Table 2. Device used for classwork by whether the device allows for effective participation in classes

	Effective Participation: Yes	Effective Participation: No	Total
Personal computer (including laptop)	2,168 (93%)	165 (7%)	2,333
College-provided device (laptop)	63 (88%)	9 (13%)	72
Tablet/iPad	123 (87%)	18 (13%)	141
Cell Phone	72 (**65%**)	39 (35%)	111
Total	2,426 (91%)	231 (9%)	2,657

*excludes 'don't have reliable access to any of the above'
Bolded text indicates the type of device that is least likely to provide for effective participation
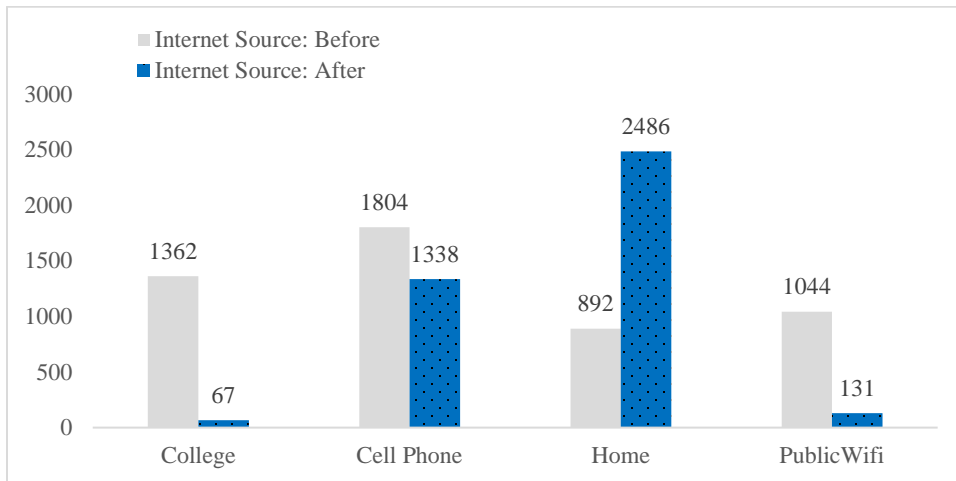
Internet

In addition to questions regarding device access, digital access includes the ability to connect to the internet. Students were asked to indicate their sources of internet access, assess the reliability of their internet service, and awareness of discounted internet services. The most commonly selected source of internet for all respondents before and after was cell phone.

Where respondents could select more than one option, prior to the transition students selected their cell phone as the most common source of internet, followed by the college and public Wi-Fi. After the transition, most students selected their home as the source of internet followed by cell phone.

When limited to students who only selected one source, prior to the transition, 574 students indicated that they used their cell phone, 374 students indicated using their home internet, and 196 students indicated that they used the internet at the college only. After the transition for students who selected only one option, most indicated using their home service (1,260 students), followed by cell phone (166 students).

Figure 2. Internet source before and after transition to online. Mark all that apply. (N=2,706)

With regard to the reliability of their internet service, most students indicated that their internet service was reliable (83%) however, 17% (458 students) indicated that their internet was not reliable. When disaggregated by demographics, Latinx students had the highest rate (21%) indicating that their internet was not reliable and Filipinx students had the lowest rate (10%) for *unreliable* internet service. Age group was also correlated with whether students indicated having *unreliable* internet service (19% among 19-25 year olds; 15% among 26-35 year olds; and 10% among students older than 35). Moreover, students who reported not living in Santa Clarita were slightly more likely to report having *unreliable* internet service (19%, compared to 16% for those living in Santa Clarita). Being a first-generation college student did not make a difference in reporting of reliable internet service.

Figure 3. Internet Reliability by Race/Ethnicity*
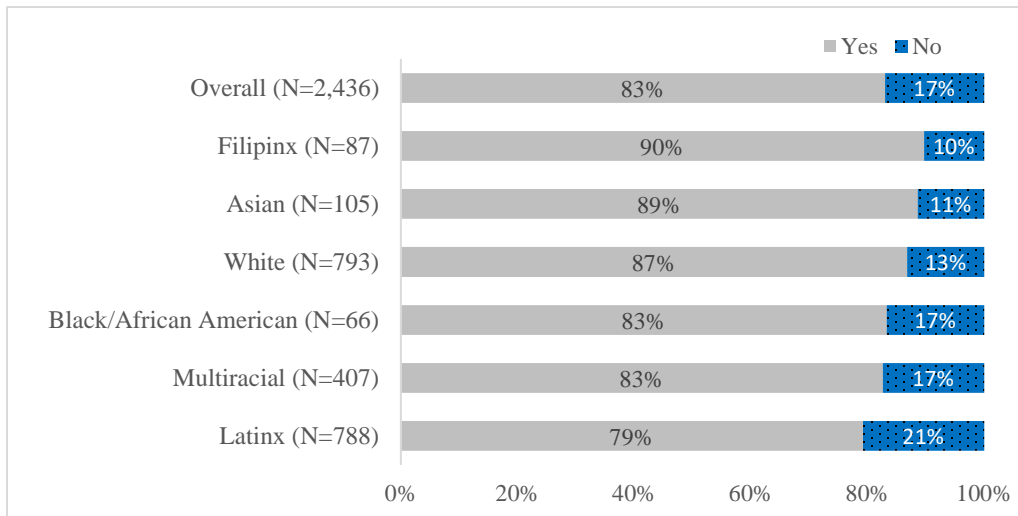
*excludes small group sizes (i.e. Native American, Hawaiian Pacific Islander, Other) and Unknowns.

Additionally, a follow-up question on awareness of discounted internet services through local providers was asked of students who indicated using their cell phone or the college for internet services *after* the transition (N=1,410). Majority of the respondents (69%) indicated being unaware of this option through local providers.

Figure 4. Awareness of discounted Internet services
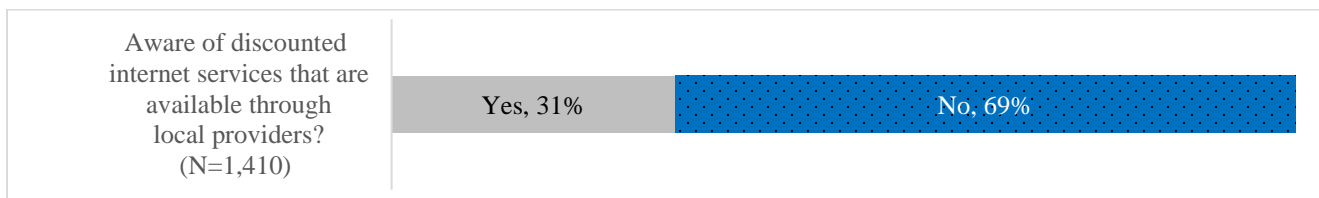
Comfort with Technology

Students also reported on whether they were comfortable with the technology they were required to use for their classes. Overall, out of the 2,699 respondents to this question, 86% indicated that they were comfortable with using technology required for their courses. Of those who reported not being comfortable, a follow-up question was asked of students to specify which type of technology they were not comfortable using. The most commonly selected option was Zoom/CCC Confer followed by skype and Google hangouts (Figure 6). In addition, 80 students selected 'other' and provided comments on their comfort with technology.

Figure 5. Type of Technology Students are not comfortable using. Mark all that apply
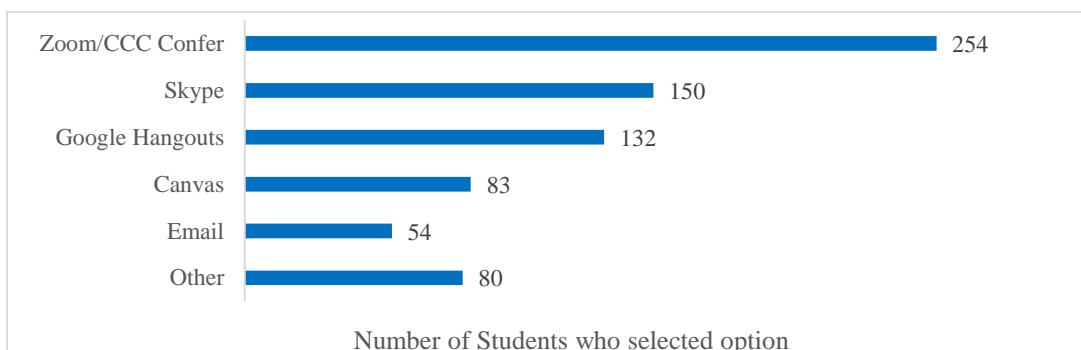
The 80 responses that were written in were code into themes (Table 3) and ranged from listing specific software programs/add-ons for courses (e.g. lab simulation software, SPSS, etc.) to testing/proctoring technology such as Proctorio or lock-down browser tools. Some students interpreted the question differently and indicated that they were not comfortable turning on their camera for courses.

Table 3. Comments on Comfort with Technology: Other (N=80)

Themes	N		N
Software/Add-ons	30	Simulation SPSS Adobe programs	7 5 3
Proctoring/Testing	22	Proctorio Security/ lock-down browsers	14 5
Online Course Format	9		
Camera/Video	7		
Device/hardware	7		
Other	9		

Recommendations

Based on the results of the COVID19 student survey items related to digital access (technology and internet), the following are recommended.

- Based on the findings that students' internet reliability varied by race/ethnicity, and a large number of students reported relying on the college's internet prior to the transition, consider the following as these have implications for equitizing digital access.

  o Wider promotion of the availability of internet access from campus parking lots
  o Providing information on available discounted internet service providers.

- Consider continued training and orientation on platforms used for synchronous learning in courses (e.g. zoom/ccc confer, google hangouts, skype etc.).

References

Pew Research Center. (June 12, 2019). *Mobile Fact Sheet.* Washington, D.C.

https://www.pewresearch.org/internet/fact-sheet/mobile/

Ribble, M.& Bailey, G. (2007). *Digital Citizenship in Schools.* Washington, DC: ISTE. ISBN: 978-1-56484-232-9.

For questions about this research brief, please contact Preeta Saxena, Ph.D., Senior Research Analyst (661)362-3072, or Daylene Meuschke, Ed.D., Associate V.P. Institutional Research, Planning and Institutional Effectiveness at 661.362.5329.

APPENDIX A: Open-ended Responses to Comfort with Technology

Please select the type of technologies/platforms you are not comfortable using for courses. Check all that apply.	Software/ Add ons	Proctored Exams/ Testing	Online Course Format	Device/ hardware	Camera/ Video	Other
add ons professors use to do class work and homework	X					
Adobe Premiere Pro	X					
adobe programs	X					
Adobe suite	X					
As previously stated the simulation software being required for labs	X					
Cengage	X					
course specific material that requires a solid connection of which I do not have.	X					
Flipgrid	X					
Google docs	X					
Loggerpro	X					
Microsoft Office	X					
Microsoft office such as excel and spreadsheets	X					
New tools like drawing pads and other things needed for my class that they were supposed to teach us to use in class, instead we were never taught what to do or how to use it, and I'm still expected to know how.	X					
Online lab simulations	X					
pearson mathlab	X					
Pro Tools	X					
SAM computer program	X					
SPSS	X					
SPSS (for Psych 104)	X					
SPSS for Psych 104 is a huge software that not everyone can download due to having an old computer.	X					
spss software for behavior stats class; it crashes my computer & its the only 1 I have	X					
SSPS or EXECEL	X					
The online lab programs for physics	X					
the virtual simulator for the labs because I have to download certain software apps and it glitches too much.	X					
Thinkwell	X					
Turnitin.com	X					
Virtual lab	X					
Virtual Simulations	X					
websites needed for my electrical engineering lab classes, takes getting used to	X					
Exam proctoring browser extensions that have access to your computer screen, microphone, and camera.		X				
Lock Down Browsers and the Forcing of the Use of a Camera		X			X	
LockDown Browser/privacy invasive software		X				
New test proctoring software		X				
Online class work & testing through any program		X	X			
Procterio		X				

Please select the type of technologies/platforms you are not comfortable using for courses. Check all that apply.	Software/ Add ons	Proctored Exams/ Testing	Online Course Format	Device/ hardware	Camera/ Video	Other
Procterio and any courses they prerecord on slide shows I can not get the audio to work on these and therefore miss out on lecture having to rely solely on my own study techniques		X		X		
Proctor		X				
Proctor		X				
Proctor		X				
Proctor add ons that scan the room		X				
Proctorio		X				
Proctorio		X				
Proctorio		X				
Proctorio		X				
Proctorio		X				
Proctorio		X				
Proctorio		X				
Proctorio		X				
Proctorio. This app was not mentioned to be utilized in any syllabus. I had no chance to learn how to use it and our teacher expected us to use it perfectly the first time.		X				
proctur chrome attachment because it doesn't let me take my tests.		X		X		
Secure Exam Proctor		X				
Although canvas has been great, ive had issues submitting work at times						X
Canvas is insufficient for learning how to assemble and use circuits. Zoom office hours are far too minimal and difficult to engage in.						X
Data leaks and easily obtainable personal data						X
Due to working at front line and being deployed is difficult to use. The service is not always reliable. The teachers expect you to sit still the entire time. It's too long to sit still for more than 1 hour half			X			
I am not good at technology. It is overwhelming the amount of apps and websites. Now, I have to open emails, canvas, zoom, goreact..too many. I have more homework now than when I was going to class.			X			
I can't get my school email on my phone so it makes it hard to check if it's not on canvas and zoom is to hard to use also I have very bad internet and it's by the only internet provider that is where I live				X		
ICOE						X
Im familiar with all its just difficult to figure out all the little tricks to get the full access of the software						X
I'm learning how to use technology as I go along.						X
it's just too overwhelming			X			
Messages						X
Net beans						X
On line sucks			X			
PC that I borrowed from a college. I previously had a Mac, but it died. I really am having difficulties with learning the PC.				X		
Resources that are not adroid applicable				X		
There have been quite a few miscommunications that I have experienced since the online transition that have affected the learning experience and grades.						X

Please select the type of technologies/platforms you are not comfortable using for courses. Check all that apply.	Software/ Add ons	Proctored Exams/ Testing	Online Course Format	Device/ hardware	Camera/ Video	Other
Any camera					X	
I do not like how zoom can videotape the session when some students are not comfortable being videotaped. Especially on remotely proctored exams i do not like having my video taken and not knowing who gets access to it. My teachers are not understanding.					X	
I do not like video chat type of situations. They make me very uncomfortable					X	
i hate turning on my camera					X	
I need to use a manual camera for class					X	
If any type of formatting to submit assignment is a little difficult for me.			X			
In a sound class so I'm not comfortable with knowing how to download protools at home or using it.						
In general, I'm not used to spending time in front of a screen for so long; for classes, assignments, and tests/quizzes.			X			
Its hard to have a class with 20 students looking at someone elses computer			X			
My phone , it gets really hard				X		
Online books and videos in place of lectures			X			
Printer				X		
Video conferencing					X	
Zoom is trash						X