To: Institutions using the HEDS Fall 2020 COVID-19 Student Survey
From: Charlie Blaich and Kathy Wise
Re: Data Byte #2 – Review of students' fall 2020 online learning environments
Date: 2/9/2021

Introduction

This is the second in a series of short memos summarizing the responses of roughly 21,500 students from 29 institutions to the Fall 2020 HEDS COVID-19 Student Survey. In our last memo, we summarized data on where students were living and how they were taking their classes. We noted the exceptional range of variation at many institutions in the extent to which students were experiencing face-to-face, online, hybrid, and other class formats.

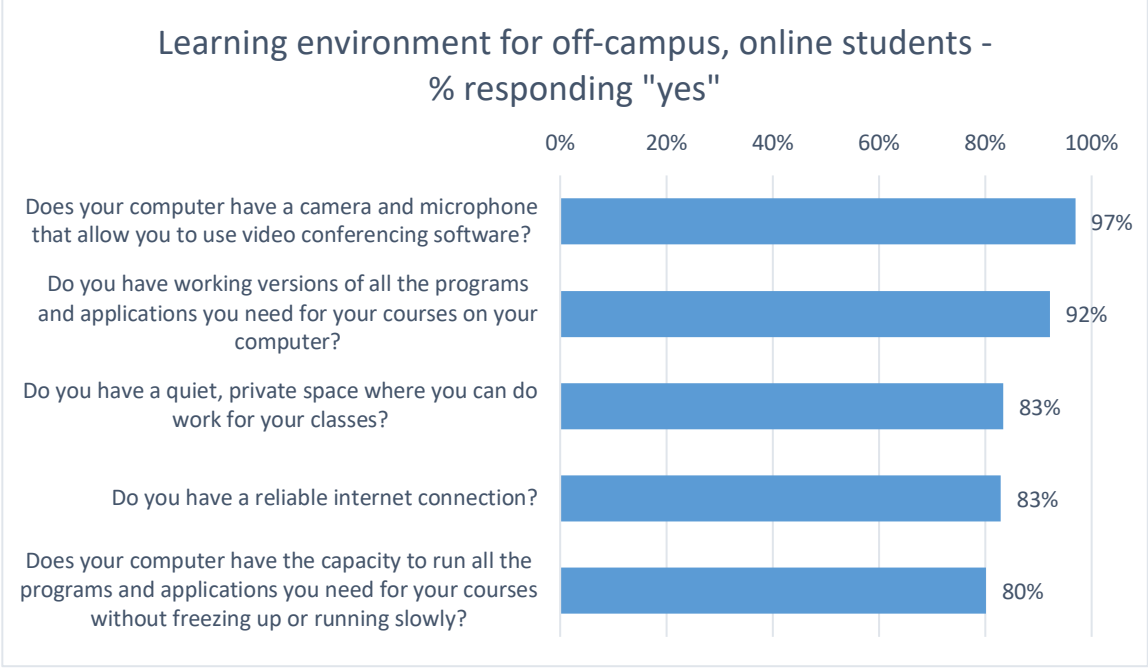
In this short memo, we look at the learning environment, focusing mostly on technology, for students who were living off campus and taking most or all of their courses online in the fall.

Data

Early in the survey, we asked students to give a "yes" or "no" answer to each of the following questions about the environment in which they were doing work for their classes:

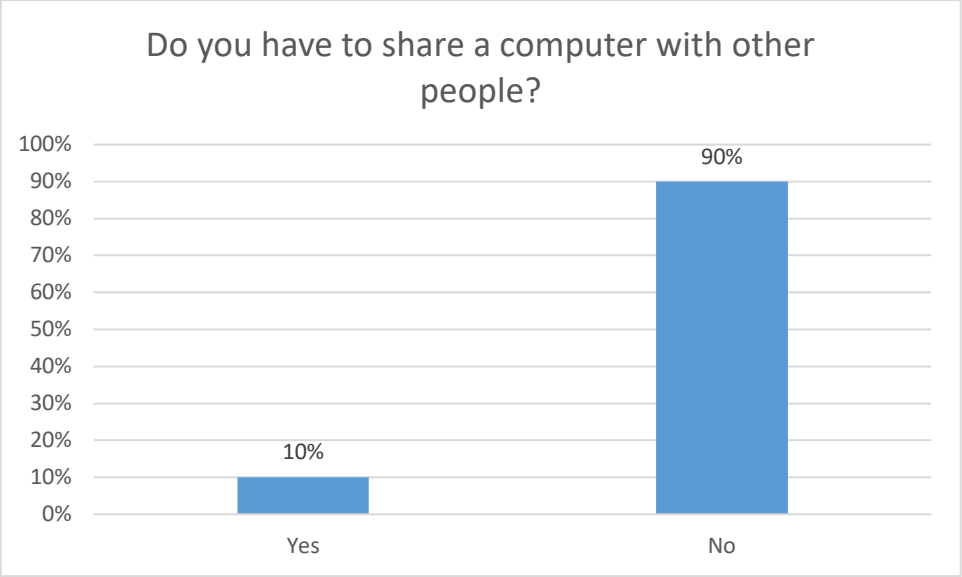
1. Do you have a quiet, private space where you can do work for your classes?
2. Do you have working versions of all the programs and applications you need for your courses on your computer?
3. Do you have a reliable internet connection?
4. Does your computer have a camera and microphone that allow you to use video conferencing software?
5. Does your computer have the capacity to run all the programs and applications you need for your courses without freezing up or running slowly?
6. Do you have to share a computer with other people?

The graph below shows the proportion of students who responded "yes" to the first *five* of these six questions.



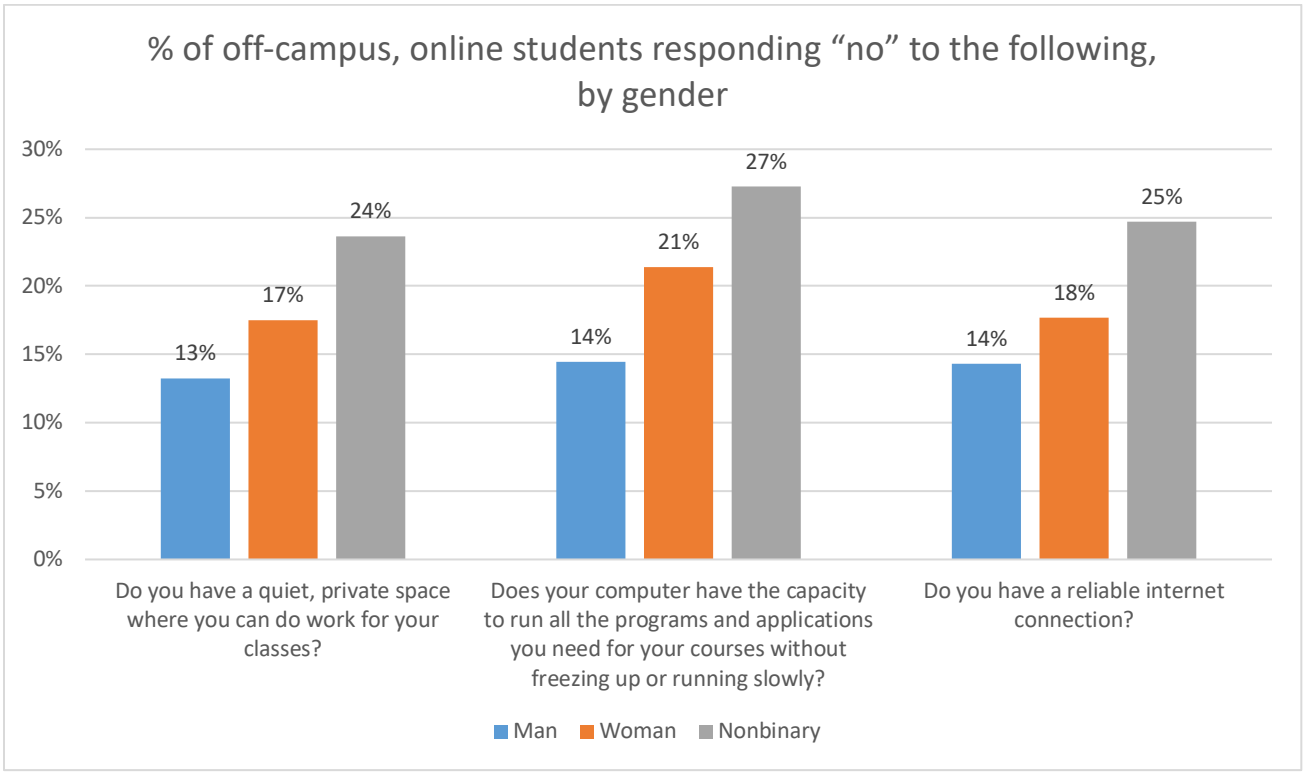
Maybe because we're unaccustomed to seeing data with such high percentages, our initial reaction to these data was, "Excellent!" Most students appeared to have the technology equipment that they needed to take online courses. But after stepping back, we saw that these data were more complicated. Nearly a fifth of students didn't have a quiet place to work, a reliable internet connection, or a computer that could run the programs that they needed. Another way of thinking of this is that, on average, for every 1,000 students, 170 to 200 students may not have had an adequate set-up for online classes.

Below we show students' responses to the question of whether they had to share a computer with someone else in order to do their course work.

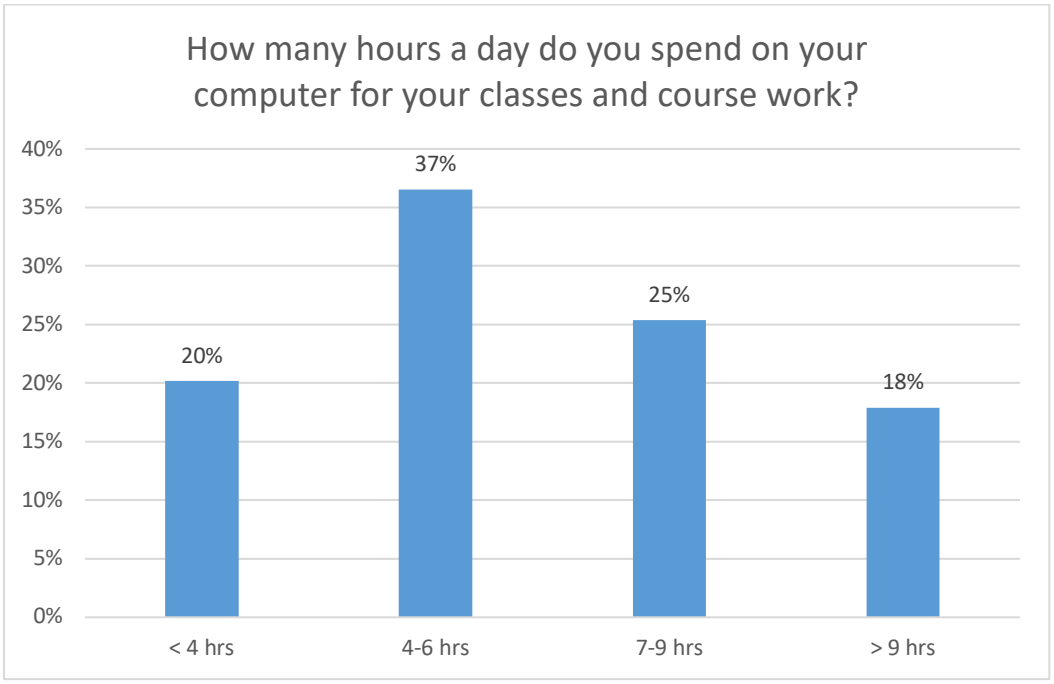


Again, the good news is that the vast majority of students didn't have to share their computer. But 10% of them did. What impact did that have on their ability to participate in classes or complete assignments? As you might have guessed, students who had to share their computers were less likely to have a private space to work (35% versus 14%), a good internet connection (29% versus 16%), or a computer that could run the programs and applications they needed (39% versus 18%). In essence, a significant number of online students were suffering from a cluster of technical and environmental obstacles to succeeding in their remote learning environment.

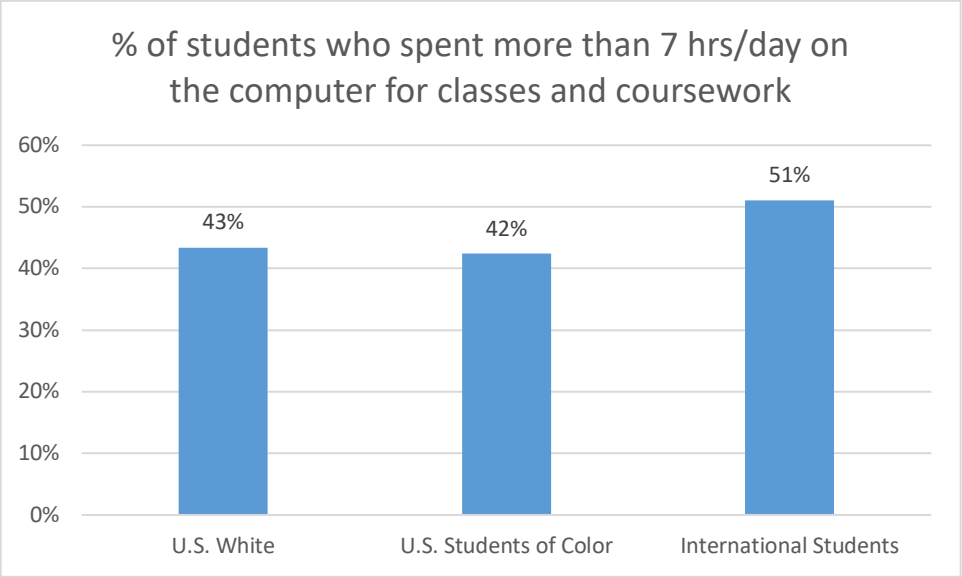
Students of color and international students were a little more likely than white students to report that their computer wasn't powerful enough to run the programs they were using (22% versus 18%) or that their internet connection wasn't reliable (22% versus 15%). Interestingly, gender identity had a stronger impact than race/ethnicity on the learning environment that off-campus students had for their online courses. Women and non-binary students were more likely to report that they didn't have a quiet place to work, an adequate computer, or a reliable internet connection (see figure on next page).



Consistent with what we've heard from students in their open-ended responses, off-campus students who were taking most of their courses online spent many hours a day on their computers. Over 40% of the students reported that they spent at least seven hours a day online for their classes and course work (see figure below).



The amount of time that students spent on their computers varied with their identity. International students spent more time on their computers than U.S. students (see figure on next page).



Finally, the environmental and technical obstacles we summarized above may have forced some students to spend more time on their computers. Students who reported spending more hours per day on their computers for their classes were less likely to have a private place to work, more likely to report internet connectivity issues, and more likely to have computers that had problems running the applications that they needed.

Conclusion

In our first Data Byte, we highlighted the varied learning environments of students who were living on campus in fall 2020. We noted significant variation within and across institutions in the proportion of residential students who took their courses fully online, fully face-to-face, or some combination of those things. We also noted students whose classes shifted across these different modes during a term. Finally, we highlighted the importance of getting a handle on the range of educational experiences that your residential students had during this unusual term. [You can find Data Byte #1 at https://www.hedsconsortium.org/wp-content/uploads/2021.01.13-HEDS-COVID-Student-Survey-Data-Byte-1-Living-Class-Environments.pdf.]

In this, our second Data Byte, we focus on students who were living off campus and taking their courses online. Overall, we see that most online students had a private space to work and the basic technology they needed for online learning. That's the good news. The bad news is that there were a significant number of students who did not. And many of these were students who already face addition educational burdens because of their identity. Like many crises, a pandemic can exacerbate the equity gaps that already exist at our institutions. It is important that institutions with online students probe whatever data they have on hand to identify existing technology obstacles and find ways to help students overcome them. And in digging into these data, it is also important to keep in mind that small statistical effects loom large for students who experience the conditions behind those effects, especially when those students are confronted with other obstacles to their education.

Both our first and second Data Bytes point to the importance of getting granular, high-resolution pictures that focus on the variation in what your students are experiencing at your institution, not just overall metrics. In our next report, we will focus on how happy students were with their choices, and their institution's choices, about living on campus in fall 2020.