

# CSUN Device Loaner Program: User Characteristics And Academic Outcomes

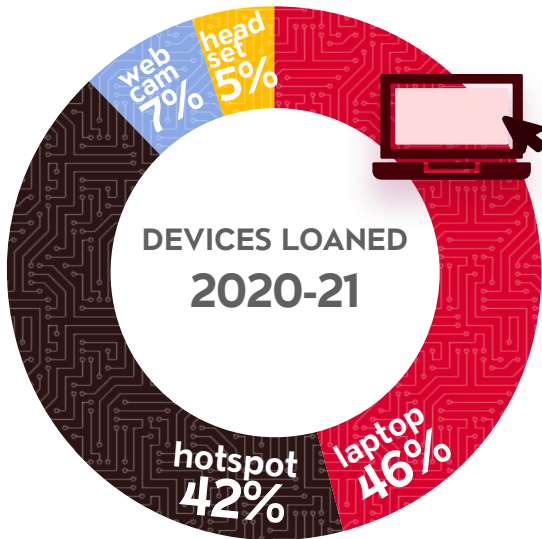
## Purpose

Given the expansion of online learning in the past few years, it has become increasingly important that colleges and universities provide students with the resources necessary to learn.<sup>1</sup> The [Device Loaner Program](#) at CSUN gives students the opportunity to borrow a device (laptop, headset, internet hotspot, webcam) to use throughout the semester. The current study seeks to examine the following questions about the program:

1. Which devices do students utilize from CSUN's Device Loaner Program?
2. Which students are more likely to borrow devices?
3. Is borrowing a device associated with improved academic outcomes?

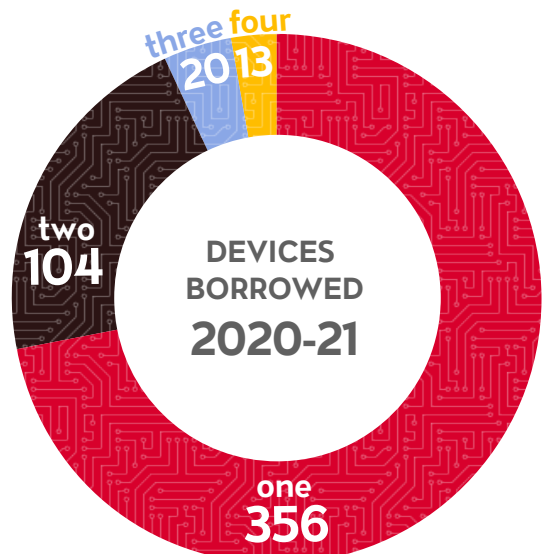
## Data

This study examines the device borrowing habits of 10,722 students from the Fall 2020 cohort, utilizing data compiled by Division of Information Technology on program utilization, as well as data on students and outcomes from the Office of Institutional Research.



## Which Devices Do Students Utilize From The Loaner Program?

Overall, 4% of students in the Fall 2020 cohort borrowed one or more devices. Of these participants, students most commonly borrowed Internet hotspots and laptops.



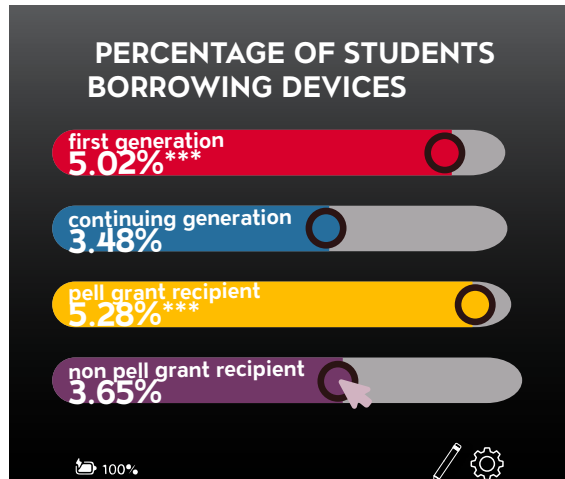
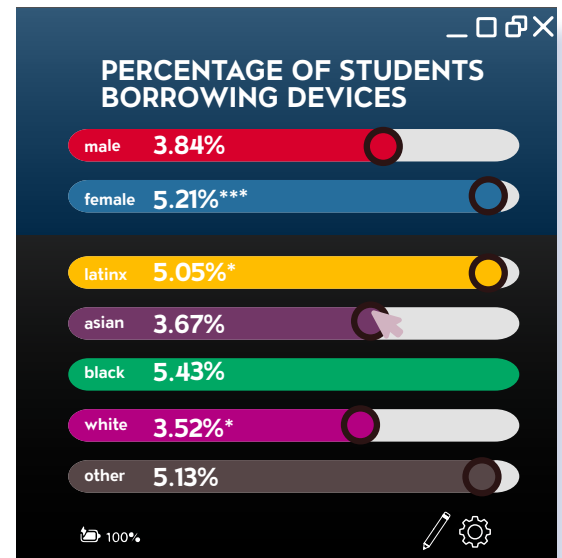
The majority of students who participated in the Device Loaner Program borrowed a single device. However, a sizeable number of students borrowed two devices, which included a laptop and hotspot combination.

1. Adedoyin, O. B., & Soykan, E. (2020). Covid-19 pandemic and online learning: the challenges and opportunities. Interactive learning environments, 1-13. <https://doi.org/10.1080/10494820.2020.1813180>

## Who Is More Likely To Borrow Devices?

Female students were more likely than male students to participate in the Device Loaner Program (statistically reliable difference;  $p < .001$ ).

Latinx students were more likely to borrow a device than students from other racial/ethnic groups. In contrast, White students were less likely to borrow a device than other groups (statistically reliable differences;  $p < .05$ ).



First-generation students were more likely than continuing generation students to participate in the Device Loaner Program (statistically reliable difference;  $p < .001$ ).

In comparison to their non-Pell recipient peers, Pell Grant recipients were more likely to borrow a device (statistically reliable difference;  $p < .001$ ).

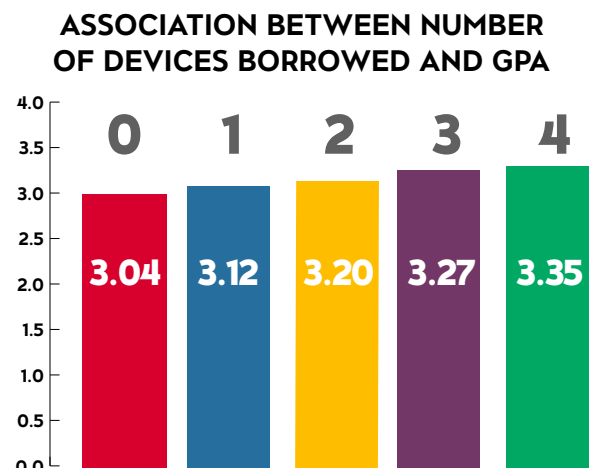
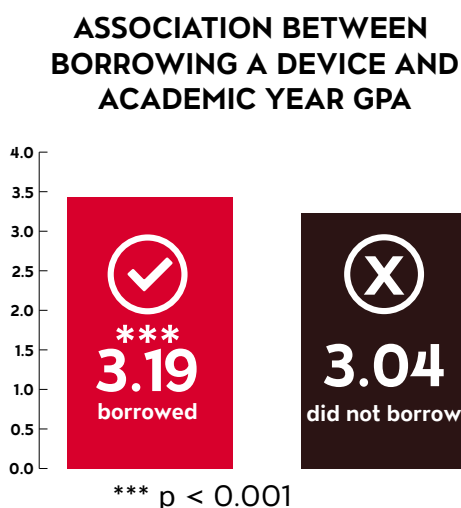
Note:\*\*\*  $p < 0.001$  \*\*  $p < 0.01$ , \*  $p < 0.05$ . Bar graphs represent statistically reliable differences between the specified group and all other groups.

## Is Borrowing A Device Associated With Improved Academic Outcomes?

The analyses in this section examine whether borrowing devices in general, as well as specific devices (i.e., laptop, headset, hotspot, webcam), is reliably associated with academic outcomes (measured as academic year GPA) while controlling for a host of student demographic (i.e., gender, ethnicity/race, first-generation status, Pell Grant status) and academic characteristics (i.e., first-time freshman or transfer at entry, college of major, incoming GPA from high school/transfer college).

### Is Borrowing at Least One Device Associated with Academic Outcomes?

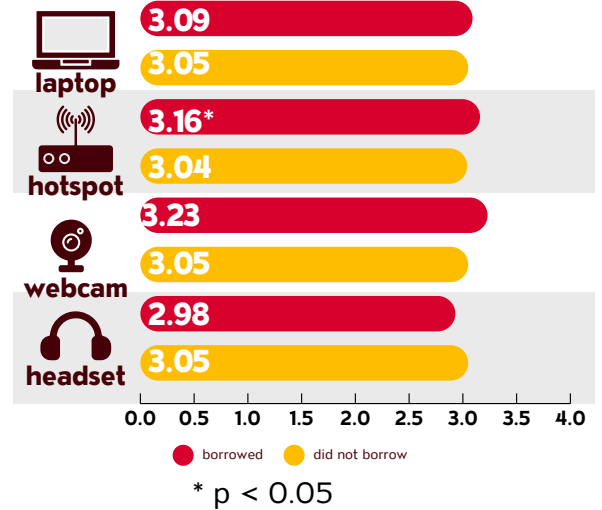
When compared against non-participants, students who participated in the Device Loaner Program earned higher GPAs (statistically reliable difference;  $p < .001$ ). There is a positive association between the number of devices borrowed and first year GPA. Student GPA increases nearly .08 GPA points for every additional device borrowed.



## Does Borrowing a Specific Device Influence Academic Outcomes?

Borrowing a hotspot was associated with a GPA increase of 0.12 GPA points (statistically reliable difference;  $p < .05$ ). No reliable difference in GPA was found for students who borrowed a laptop, webcam, or headset (for webcam borrowing, this lack of statistical reliability could be because of the smaller number of students who borrowed these devices).

### ASSOCIATION BETWEEN BORROWING CERTAIN DEVICES AND GPA

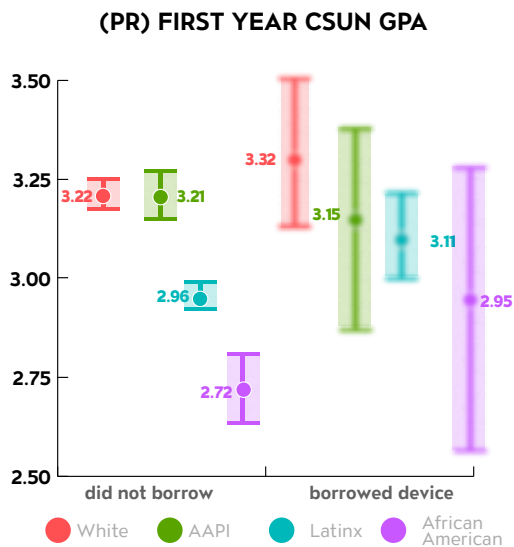


## Does the Association Between Device Borrowing and Academic Outcomes Vary by Demographic Characteristics?

### Race/Ethnicity

Among Latinx students, device borrowing was reliably associated with a higher GPA (0.15 grade points; statistically reliable difference;  $p < .001$ ). There were no such associations for White, Asian American Pacific Islander, and Black/African American students who borrowed a device.

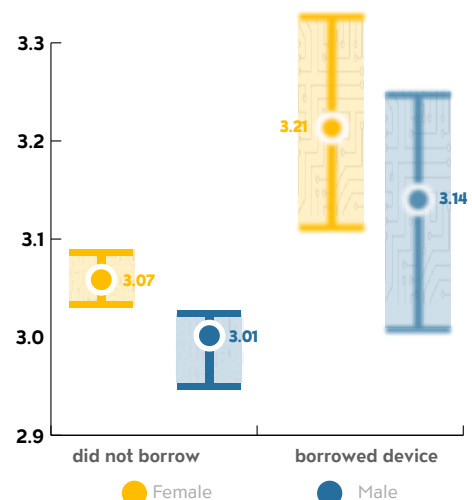
When looking at equity gaps among device borrowers, device borrowing seemed to contribute to closing equity gaps between White and non-White students, particularly those identifying as Black/African American or Latinx.



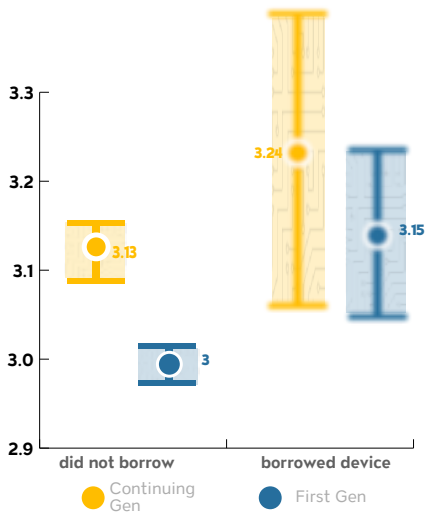
Plots for each group on this graph depict predicted values for first-year GPA (values associated with center point), with 95% confidence intervals (i.e., the range within which we are 95% sure the "true" value lies). Therefore, when the intervals for 2 groups do not overlap, this means that there is a statistically reliable difference between the groups ( $p < .05$ ).

Borrowing a device was reliably associated with increased first-year GPA (0.14 grade points; statistically reliable difference;  $p < .01$ ) among female students. Additionally, device borrowing contributed to closing academic equity gaps between male and female students.

### (PR) FIRST YEAR CSUN GPA



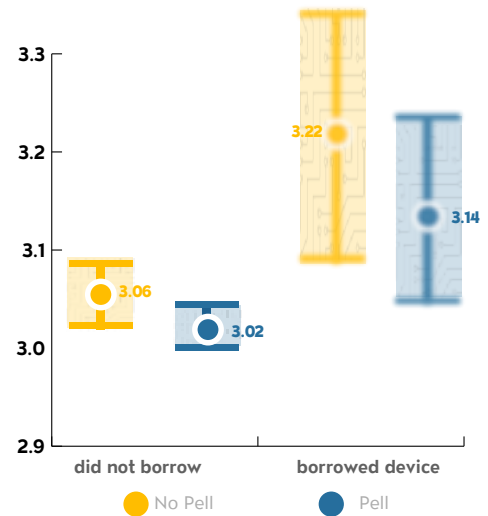
(PR) FIRST YEAR CSUN GPA



Among first-generation college students, there was a reliable positive association between term GPA and borrowing a device (0.15 grade points; statistically reliable difference;  $p < .001$ ). First-generation students who borrowed a device earned GPAs comparable to those of continuing-generation students.

Borrowing a device was associated with higher GPAs (0.12 grade points) among Pell Grant recipients (statistically reliable difference;  $p < .05$ ).

(PR) FIRST YEAR CSUN GPA



## Takeaways

**This study demonstrates that participating in the Device Loaner Program is associated with improved academic outcomes.** In particular, hotspot borrowing was positively associated with first-year GPA. Among Latinx students, device borrowing was reliably associated with positive academic outcomes. Latinx and African American students who borrowed a device had comparable first-year GPAs to White students. Device borrowing also had a positive impact on student success for female, first generation, and Pell Grant students.

The academic impact of CSUN's Device Loaner Program are similar to those of the [CSUCCESS program](#), another type of device loaning program for first-time students, further demonstrating that there may be both academic and psychological benefits to having device loaning programs. That is, students who borrow devices such as a hotspot or laptop may not only be able to have the opportunity to use a device that is pivotal to their success, but they may also feel supported by the university to be successful. Further examination of this finding could include focus groups or interviews with students to participated in one or more of these programs.