

Overcoming Technology Barriers for Students

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abstract: This paper describes efforts at the University of Arizona Libraries (UAL) in Tucson to improve access to the Internet and technology during the COVID-19 pandemic and as the libraries continue to adapt to hybrid instructional modalities. The authors highlight how their institution leveraged campus data and new partnerships to better meet students' basic technology needs, particularly for first-generation and underrepresented students. While much of this content was previously presented at the 2022 Library Assessment Conference, there have been several updates, and more operational information is shared in this article.

UAL analyzed anonymized student demographic data, including race and ethnicity, first-generation student status, and Pell grant recipients, to determine how service utilization aligned with the campus population. The libraries established new campus partnerships and are evaluating and refining their approach. This foundational work provided new ideas for ways to reach more students in need and to form additional partnerships with groups on campus.

Introduction and Background

Not all Internet access is equal, and students often rely on outdated technology, particularly when they are unaware of available resources. Adequate technology has become a basic need for students to successfully participate in learning. Support for student access to technology positively impacts overall retention and success. Funding is key to providing the level of technology needed to accommodate the hybrid learning models with which students currently work. Thus, it is important that we continue to increase funds for technology in the form of grants, partnerships, and endowments to sustain and grow library technology lending programs.

Adequate technology has become a basic need for students to successfully participate in learning.

When the pandemic began in the spring of 2020 and students could not come to campus for in-person instruction, access to broadband and remote learning equipment was a significant educational barrier for many. To address these issues, the University of Arizona Libraries (UAL) began to check out laptops and Wi-Fi hotspots by the semester instead of the five-day loan period it had allowed before the pandemic. In the hybrid learning model that ensued, students attended some classes in-person, while other classes met remotely. Post-pandemic, the hybrid model remains an option, and campus safety and security concerns also occasionally shift in-person courses to online for short periods. This new reality has substantially increased demand for the equipment required for access to remote education.

A University of Arizona (UA) survey of students in fall 2020 regarding the impact of COVID-19 found that 1 in 3 students faced limited Internet access, and 2 in 10 reported that a lack of technology or software reduced their ability to perform well in classes delivered online.² Supplemental reports indicated even higher rates of Internet challenges for Hispanic/Latinx and Native American students.³ A basic needs survey of University of Arizona students in spring 2021 by the Office of Assessment and Research found that 70 percent of students reported that not having access to a reliable Internet connection was a barrier to their success.⁴ Furthermore, 75 percent indicated on a fall 2022 First-Year New Student Interest Form that they needed assistance accessing technology, and 69 percent reported requiring help in understanding technology.⁵

The fall 2022 enrollment data revealed that the university had 51,134 students—39,606 on the main campus in Tucson; 8,132 in Arizona Online; 1,644 in Arizona International; 766 students in Phoenix; 652 in distance education; 214 students in southern Arizona; and 120 students in Global Direct. The self-reported racial and ethnic demographics of this population showed that the students are 66 percent White, 25.3 percent Hispanic/Latinx, 10.6 percent Asian, 6.7 percent Black, 3.5 percent American Indian or Alaska Native, and 0.9 percent Native Hawaiian or Pacific Islander.⁶

Supporting student success is one of UAL's strategic priorities.⁷ Increasing the technology lending program through campus partnerships to better meet student needs, particularly for historically underrepresented students, is a strategic action that directly advances that priority.

UAL partnered with the university's IT department and other campus entities to apply for a grant from the National Telecommunications and Information Administration's Connecting Minority Communities program. We emphasized that, reflecting our location on the United States-Mexico border, 80 percent of UA distance education students identify as Hispanic/Latinx. Seventy-four percent are first-generation college students.⁸ UA typically uses Pell Grant eligibility to identify low-income students. In fall 2021, 40 percent of the total population was eligible for or had received a Pell Grant at some point during their undergraduate academic career.

According to the Pew Research Center, the percentage of Americans without access to essential technologies has not "significantly changed" since 2019.⁹ However, reliance on broadband Internet and technology became increasingly critical educational resources during the COVID-19 pandemic, while inequities in accessing these resources were exacerbated. This was especially true for marginalized communities that have been historically technologically disadvantaged. Students who work in remote regions



where access is limited or whose household environment is not conducive to learning faced the biggest challenges. The Arizona Libraries Digital Inclusion, a project of *Arizona State Library, Archives and Public Records*, says, "In 2019, the Federal Communications Commission (FCC) reported that 21.3 million Americans lack access to broadband availability. 1.3 million are in Arizona."¹⁰ In April 2021, the Benton Institute for Broadband & Society, a nonprofit organization that works to provide affordable broadband connections throughout the United States, reported that nearly 1 in 7 Arizonans live in an area without adequate broadband infrastructure.¹¹ In August 2022, the Arizona State University's sixth annual Congressional Conference noted that "approximately 1 million people in Arizona don't have access to the internet."¹² According to the U.S. Census Bureau American Community Survey, the median household income in Tucson was \$43,425 in 2019 and the poverty rate in the Tucson Metropolitan Statistical Area was 16.8 percent.¹³ Thus, Tucson ranks 11th among 12 Western metropolitan areas.

The Affordable Connectivity Program of the Federal Communications Commission provides a discount for households with an income at or below 200 percent of the federal poverty level toward Internet service.¹⁴ While this program is helpful, it does not cover the full costs for some users nor provide the bandwidth students need for online coursework. Running Zoom or high-definition video streaming takes around 2.5 gigabytes of data per hour.¹⁵ UAL's data plans under a previous vendor had a maximum data use of 25 gigabytes per month, which would be reached after 10 hours of use. Several students reported struggling after they used their monthly data allotment. After switching to a different provider, we lifted this restriction. When exploring vendor options, it is important to keep data usage limits in mind.

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Library Survey Methodology

To better understand the student experience at the University of Arizona Libraries and improve our services, we distributed a four-question mixed methods survey via Qualtrics in fall 2022. This was more than two years after the start of the pandemic, when UAL's service had been greatly expanded to include more laptops and Wi-Fi hotspots. All quantitative responses were analyzed in Tableau data visualization software. Qualitative elements were first coded in Atlas.ti data analysis software to initially categorize text responses. All demographic data elements were exported from the user database in UAL's Ex Libris Alma integrated library system and merged with data from campus analytics using Microsoft Excel. These results were then visualized through Tableau. To improve the response rate, students who participated were entered into a drawing to receive gift cards to the UA BookStores. Prizes included two \$25 gift cards and five \$10 gift cards.

The survey was designed to assess the following (for the full survey, see the Appendix):

- Access to library technology supporting student success
- Reasons that students borrowed technology from the library
- Technology barriers experienced by students
- How the library has helped meet technology needs and the areas where students were still struggling and could use more support.

All 4,463 students who checked out equipment from January 1, 2022, to September 21, 2022, were contacted. The self-identified race/ethnicity of those surveyed was 33.9 percent White, 24.8 percent Hispanic/Latinx, 8.6 percent Asian, 4.9 percent Black/African American, 3.1 percent American Indian or Alaska Native, 0.9 percent Native Hawaiian or Pacific Islander, and 21.3 percent international. Additionally, 27.1 percent of those surveyed were first-generation college students.

Six hundred and sixty-three students replied to the survey, which represents a 14.9 percent response rate. The demographics of those who responded aligned with those of the students surveyed.¹⁶ Overall, the survey distribution and response rate matched the demographic makeup of campus for underrepresented student populations.¹⁷

Library Survey Results

Question 1 asked, “Does having access to library technology support your success as a student?” Answering was optional, and most of those who replied said “yes” (514 responses; 78 percent). Those who said “no” (9 responses; 1 percent) or were “unsure” (6 responses; 1 percent) indicated that they had not used any technology, that there was only “some” improvement over what they own, or that the technology they needed was not always available. The people who claimed they had not used library technology might have forgotten what they used or checked out an item that they did not recognize as technology, such as chargers or other accessories.

Question 2 asked why students borrowed technology from the library. Of the 526 people who responded to this question, reasons included:

- Complete my daily coursework: 360 students
- Finish a specific assignment or project: 342 students
- Temporarily replace my lost, broken, or forgotten technology: 270 students
- Experiment with or learn more about the technology: 171 students
- Other: 24 students.

Reasons listed under “other” included financial motivations, because the technology they already owned was not permitted by their instructor, to conduct data collection, for lab work, for remote work for a job, to charge devices, to use a second screen, for conferences, or to conduct presentations.

Question 3 asked, “As a student, what technology barriers do you experience?” The answers to this question helped us to gain a deeper understanding of the student experience. We suspected that many students face multiple barriers, and that guess was validated. The responses were:

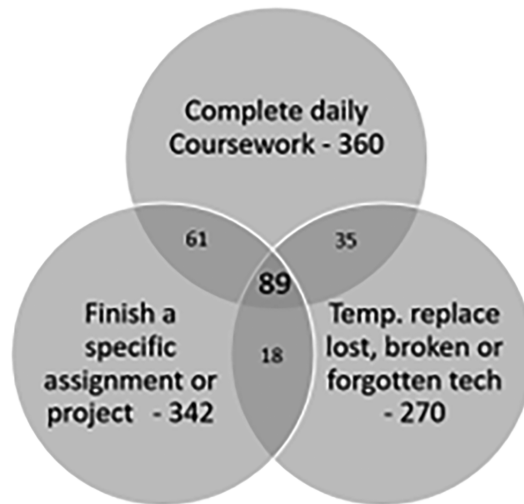


Figure 1. Leading reasons students reported for borrowing technology from the University of Arizona Libraries.

- Do not own technology required to complete my coursework: 217 students
- Limited /no Internet access: 100 students
- Limited access to power to charge devices: 53 students
- My living environment is not conducive to using technology: 37 students
- Do not understand how to use the technology required to complete my coursework: 27 students
- Other: 28 students
- I do not have any barriers: 207 students.

The “other” heading included financial reasons, forgetting technology at home, convenience, medical reasons, transportation problems (such as difficulty carrying the device), older technology, software needs, and already having “most” of what they need.

Surprisingly, many students reported no barriers. In the future, we need to explore why students borrow technology if they do not have barriers. They could have temporary needs or might not readily identify with any of the options provided.

For the first two questions, we also analyzed whether there were significant differences in the responses by the self-identified demographic categories. We found the categories roughly aligned with the makeup of the student body. There were no significant differences based on being a first-generation student.

Question 4 said, “Please tell us your story. As the library continues to seek funding to sustain ongoing technology lending, it helps to hear your experiences.” The question then asked, “How have we helped meet your technology needs and what are the areas where you are still struggling and could use more support?” The resulting narratives are particularly useful for understanding the broader context. They also serve as a useful tool for communicating with administration, grant funders, and prospective donors who prefer to hear directly from students.

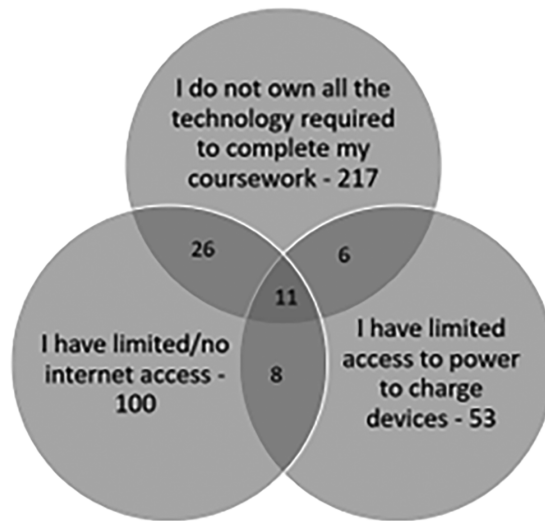


Figure 2. Barriers to the use of technology identified by University of Arizona students.

After coding these stories into categories, the following trends emerged:

- Personal tech items broken/unavailable: 218 students
- High cost/affordability: 123 students
- Happy with library/tech lending/staff: 116 students
- Tech lending supports or enables academic success: 114 students
- Tech essential to coursework, success: 87 students
- Unmet needs: 75 students
- Internet connection weak/none: 59 students
- Needed applications or software: 29 students
- Stress-reliever, reassurance, lifesaver: 25 students
- Supports research: 23 students
- Working while mobile/offsite: 16 students.

These trends closely mirrored a national survey conducted by EDUCAUSE during the spring of 2022.¹⁸

Focusing more narrowly on unmet needs and service gaps identified by the responding students, we heard that the library should have a larger inventory of equipment, provide training or support for high-end technology, offer training for different user levels, implement longer loan periods, offer more checkout locations across campus, circulate newer models of equipment, and do better marketing to inform students of our service.

The anonymized stories shared by several students illustrate some of the situations library technology users encounter. A Hispanic, first-generation senior and Pell Grant recipient majoring in mechanical engineering said, "I live on a ranch where the Internet is spotty. I have to commute an hour a day to go to school. With the hotspot, I was able to quickly download software necessary for classes, projects, and assignments. I also borrowed a graphing calculator since I can't afford it."



An American Indian graduate student in American Indian studies explained, “My daughter’s lung collapsed, but I had a paper due. I rented a laptop and headed to PHX (Phoenix) Children’s Hospital.”

An international graduate student in systems and industrial engineering reported, “I live in an apartment where the Wi-Fi is not great, and the upload speed is very poor. I was almost close to missing the deadline for homework submission when I tried to submit the assignment 10 minutes before the deadline and the file size was nearly 50 MB (megabits). I started borrowing a hotspot, and it is really helpful. Thanks.”

A Hispanic sophomore and Pell Grant recipient majoring in film and television said, “My family has no Internet at our house near the edge of town. This became a huge strain on me. I needed to have access to the Internet to complete my assignments, and I couldn’t keep parking at McDonalds and using the Internet there.”

A junior majoring in microbiology—who was also Hispanic, first-generation, and a Pell recipient—said, “I was homeless for over a year (first 3 semesters). I did not always have access to Wi-Fi. I borrowed technology multiple times to help me complete and even attend class. As a nontraditional student, I also have to work and provide for my family. Having access to the Wi-Fi and laptop allowed me to continue engaging in my courses and studying.”

A freshman in the College of Nursing who was Hispanic, first-generation, and a Pell recipient explained, “I come from a low-income family where without scholarships and lending of things, I would not be able to attend. I bought my school iPad with my graduation money; after checking syllabi, none of them said mine was not able to be used. I walked into math and learned otherwise. I was stressed about being able to buy a new laptop for this one class.”

Another Hispanic, first-generation Pell recipient, a junior studying information and eSociety, said, “I am a mother of five, one being too young for school, and with the price of daycare it is more cost-efficient for me to stay home with him. Instead of letting times pass me by while being a stay-at-home mom, I decided to use this as [a] chance to finish my education. Thankfully for the school’s computer lease program, this has been possible. It allows me to do work on my time while still being the mother my kids need.”

A junior majoring in film and television, who is Black, first-generation, and a Pell recipient, said, “As a fine art student, equipment are expensive, so borrowing technology from the school has saved me money and also exposed me to equipment that I may get in the future.”

An American Indian graduate student in urban planning reported, “A research team from UA went to the Navajo Nation, on the reservation, the Internet connection can be little to none, and the hotspot I rented from the library helped me work on assignments while I was away from school.”

A senior, first-generation biochemistry major who identified as American Indian or Alaska Native reported, “The laptop that I have had since high school not only is rapidly becoming outdated with advancing technology, but has also broken in multiple ways. Being able to rent out a library laptop has really saved me in regards to being a student. Additionally, I have had the opportunity to rent out and learn how to use new technology that I never would have been able to afford myself, such as an iPad, that will give me a better edge going into the workforce.”



A freshman theater arts major who is Native Hawaiian or other Pacific Islander, a first-generation student, and a Pell recipient said, “As someone who comes from generational poverty, I am still a low-income student that needs to take in as many resources as possible. With the library, I have not only access to the books and technology in the library, but an abundance of technology available to rent out such as computer, tablets, DLSR [digital single-lens reflex] cameras, and even projectors.”

Operations, Remedies, and Actions

Table 1 illustrates the types of equipment offered at UAL as of November 2022, the number of items in each category, and how many unique users borrowed each type of equipment. Even with increased inventory levels, student demand remains high. UAL did not begin to circulate Wi-Fi hotspots until 2020, several months after the pandemic began, when it became clear that they were essential resources for many students.

Table 1.

University of Arizona Libraries Equipment and Number of Users

| Equipment | Quantity | Users |
|----------------------------|----------|-------|
| 3D scanners | 4 | 25 |
| Accessories / cables | 679 | 2,780 |
| Audio recorders | 70 | 219 |
| Calculators | 192 | 1,804 |
| Camera accessories | 110 | 473 |
| Cameras, 360 | 5 | 65 |
| Cameras, digital | 65 | 673 |
| Cameras, GoPro | 12 | 103 |
| Cameras, video | 34 | 278 |
| Cameras, webcam | 35 | 218 |
| Headphones | 151 | 1,308 |
| Laptops and iPads | 1,298 | 6,156 |
| Portable recording studios | 2 | 41 |
| Projectors | 22 | 321 |
| Tablets | 49 | 590 |
| Technology kits | 40 | 332 |
| Wi-Fi hotspots | 190 | 734 |
| Total | 2,919 | – |



For other libraries seeking to start their own equipment lending program, there are many considerations. First, to hold individuals accountable for replacement fees, UAL has each person sign an equipment agreement form.¹⁹ Before we check anything out, we inspect and turn on the equipment in front of the person. UAL has records in Alma for every type of technology device, noting what parts are included or any wear and tear, so subsequent users are not held accountable for missing parts or damage.

When an item is returned that is not working properly, our IT staff assesses whether the student should be charged for a replacement or if the device failed due to regular wear and tear. We notify the Bursar's Office of any charges on the student's library account, which could result in the student being blocked from registration or from receiving transcripts until they resolve the issue. We do not charge late fees.

UAL generally will not do repairs. If an item is under warranty and someone else can fix it, we will have the repair done. If the device has suffered normal wear and tear and needs to be replaced due to age, we tap into our budget for refreshing technology. If there has been user damage and they pay for a replacement, we use those fees to repair the equipment or buy a new device.

Since we cannot anticipate all the software or plug-ins a student may need, the equipment is set up to give the student full administrative privileges. Upon an item's return, we reset the equipment and fully charge the battery for the next user before placing it back on its assigned shelf space.

While frontline library staff has regular interactions with students, they seldom have an opportunity to understand students' individual needs on a deeper level. Fortunately, there are units on campus that have

access to additional resources and can develop in-depth student relationships that help identify students with specific needs. One of the libraries' new roles is to bring together units that have not traditionally collaborated to provide increased access to technology and spaces for students. These efforts prioritize students most in need and

acknowledge the historic inequities that community members face. Specifically, the library formed partnerships with the Hispanic Serving Institution Initiatives, the Office of Native American Initiatives, the Thrive Center, and Arizona's Science, Engineering, and Math Scholars to help strengthen connections with students.²⁰

Initially, the library worked with Hispanic Serving Institution Initiatives to expand its equipment lending program. "Hispanic Serving Institution" is a federal designation by the U.S. Department of Education that acknowledges colleges and universities with an enrollment of 25 percent or more Hispanic full-time equivalent undergraduate students. This designation opened access to additional grant funding opportunities, which the libraries used to purchase 620 laptops, nearly doubling the existing lending program to its current size of 1,200 laptops.

Another partner, the Office of Native American Initiatives, was most familiar with the state of tribal lands and broadband challenges. Arizona has 22 federally recognized

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Native Nations with political sovereignty. The Office of Native American Initiatives worked with the library to determine the financial eligibility of individuals and make student referrals.

The Thrive Center, which provides support for students from underrepresented groups or from low-income households and to first-generation college students, worked with the libraries to connect students with technology support during the peak of COVID-19, when stay-at-home orders were in effect. The Thrive Center identified students who were struggling through its peer mentoring programs. It also found students who needed additional funding to assist with technology through such programs as its New Start Summer Program for newly admitted students; Arizona Assurance, which provides academic, financial, and social support for students receiving financial aid; and Financial Wellness, which educates students on sound financial practices. The Thrive Center's regular check-in processes with students through these programs helped them find those most in need of support.

Lastly, the libraries partnered with Arizona's Science, Engineering, and Math Scholars. This program supports students who are underrepresented in STEM, especially those who are first in their family to attend college, come from low-income households, have transferred from a community college, or belong to underrepresented groups, such as women and minorities.

Through these partnerships, the library received matching funding to expand our laptop inventory from 300 to 1,208 (a 300 percent increase). Additionally, through donor/matching funding, UAL established an inventory of 190 Wi-Fi hotspots, which were not provided prior to the pandemic.

Since more items were available, UAL began to lend laptops and Wi-Fi hotspots for longer periods. We increased the checkout period from five days to a semester for any referred students and to three weeks for all others. Further, as the library's equipment program grew, the campus Disability Resource Center reached out to have the library circulate Microsoft Surface tablets for their students in connection to training offered by the campus.²¹ Ultimately, equipment use aligned with the campus population demographics.²²

The University of Arizona and its libraries were awarded a two-year grant from the National Telecommunications and Information Administration, an agency of the

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U.S. Department of Commerce, under the Connecting Minority Communities (CMC) Pilot Program. This grant was possible because of the university's designation as a Hispanic-Serving Institution. This funding established Project Connect Arizona Now, which will address the need for broadband Internet access, connectivity, and digital inclusion in mostly rural communities in southern Arizona. UAL will expand its technology lending services, providing

the equipment for remote learning to more students in need for the entire time they are enrolled at the university. Specifically, the UAL Rhonda G. Tubbs Tech Toolshed equip-



ment lending program received \$796,000 in grant funding to purchase 400 technology bundles, including personal computers, Wi-Fi hotspots, and headphones; 25 graphing calculators; 10 digital cameras; and 50 webcams.

UAL was also recognized by the Arizona Hispanic Serving Institutions Consortium for its evidence-based practices in support of Hispanic students.²³ The breadth of technology provided by the university assists with access, persistence, and retention for its Hispanic population. Increasingly, future employers expect students to have experience with a wide range of technology. Students who could not afford the basic equipment or software needed for their education, much less higher-end devices such as professional cameras, virtual reality headsets, and drawing tablets, are at a distinct disadvantage when seeking employment. Robust access to technology also helps individuals develop as leaders and provides them with the foundational knowledge needed for future civic engagement.

Lastly, we stretched our funds through exploring lower cost options. Our largest savings came from switching vendors for our Wi-Fi hotspots. Many companies began to offer discounts to educational institutions after the start of the pandemic. Switching hotspot vendors reduced our costs for hotspots by \$50,000 per year.

We continue to be approached by new colleagues to discuss possible collaborations, such as reuse of research laptops that might otherwise be discarded. Every new success and presentation generates referrals, which can ultimately lead to additional funding, service expansion, and reaching more students in need. Conversations with the UA Student Affairs Policy Committee and Basic Needs Student Coalition have allowed us to advocate for the current basic needs definition to be expanded beyond food and housing to include technology.²⁴ National basic needs initiatives are also discussing such expansion, recognizing the stress that

inadequate or missing technology places on student success.²⁵ Additionally, the Hope Center's Federal Policy Priorities in 2023 state that the real price of college includes not just tuition and fees but also food, housing, childcare, health care, transportation, technology, and more.²⁶ Our work with the Student Affairs committee has sparked their intention to urge that faculty reflect the technology needed on the syllabus for each course. Student surveys indicate that it is essential to understand the technology requirements for courses.

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Next Steps and Conclusion

To sustain this program, we need to refine our approaches that identify students in need, seek more partnerships, provide more training to users, and continually look for ways to reduce costs. To have more consistent and reliable methods of determining student need, we established a new relationship with the university's Office of Scholarships & Financial Aid and can now generate a list of students with the greatest financial need.



We will focus on incoming first-generation students and evaluate their total cost of attendance to determine their total “need after gift aid.” Using these criteria, the library will contact the students with the greatest need first.

We also plan to pursue other new partnerships. Some examples include working with the Arizona Native Scholars Grant recipients, UA Near You Network, and New Start. Each of these programs focuses on meeting the needs of first-generation, low-income, and Pell-eligible students. The university’s introduction of the Pay One Price digital textbook program may increase student demand for laptop and Wi-Fi hotspot bundles.²⁷

To better understand national trends in technology lending, we analyzed programs at other libraries during the spring 2023 semester. After evaluating 24 academic libraries, we discovered that we have one of the largest technology lending programs in the country. There is still ongoing need for this support, particularly among low-income and marginalized students.

Ultimately, our goal is to increase donor-based endowments to better secure funding. Targeted endowments will also assure that we remain able to serve specific student populations over time. For example, the Arizona Native Scholars Program focuses on meeting the needs of indigenous students at UA. Setting up a library technology endowment would allow us to provide students with a technology bundle—consisting of a laptop, Wi-Fi hotspot, headphones, and webcam—for their entire academic career.²⁸

The Connect Arizona Now Project and our partnership with the UA Near You Network will help us reach more traditionally underserved students who are geographically spread throughout the state.²⁹ Many of these students are nontraditional, underserved populations and Pell eligible, which aligns with library goals.

To help improve training, we plan to increase the participation of others on campus who have more expertise, such as campus IT and Adobe partners. Campus IT has expertise in the most common types of equipment and a wide range of audiovisual products. Our Adobe partners are more knowledgeable about cameras and filming, particularly their suite of software to edit final products. In either case, the library provides a centrally located space for these groups to conduct training. The library lacks the capacity to create, maintain, and regularly deliver training for the wide range of equipment available, but we believe that campus partners can help meet this need.

In summary, the pandemic brought to light the degree to which students rely on technology to succeed, and this demand has only continued to grow with increasing reliance on hybrid instruction modalities. Libraries remain uniquely positioned to fulfill such requirements but may find it impossible to keep up with student demand. This necessitates finding the best way to prioritize those most in need while continuing to expand resources and partnerships to help as many individuals as possible.

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Appendix

UA Libraries Fall 2022 Survey

Please take a moment to help us improve technology lending at the UA Libraries, and you will automatically be entered for a chance to win one of several \$10 and \$25 gift cards from the UA BookStores.

1. Does having access to library technology support your success as a student? (Yes, Unsure, No)
2. I borrowed technology from the library to (check all that apply)
 - Complete my daily coursework
 - Finish a specific assignment or project
 - Experiment with or learn more about the technology
 - Temporarily replace my lost, broken, or forgotten technology
 - Other [text box].
3. As a student, what technology barriers do you experience (check all that apply)?
 - I have limited / no Internet access.
 - I have limited access to power to charge devices.
 - I do not own all the technology required to complete my coursework.
 - I do not understand how to use the technology required to complete my coursework.
 - My living environment is not conducive to using technology.
 - I do not have any barriers.
 - Other [text box].
4. Please tell us your story. As the library continues to seek funding to sustain ongoing technology lending, it helps to hear your experiences. How have we helped meet your technology needs and what are the areas where you are still struggling and could use more support?

Notes

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17. The survey had 163 students (24.6 percent of respondents) who were Pell Grant recipients with a demographic breakdown of 84 (52 percent) Hispanic/Latinx; 32 White (20 percent); 17 Asian (10 percent); 15 Black/African American (9 percent); 13 American Indian/Alaska Native (8 percent); and 1 Native Hawaiian/Pacific Islander (1 percent).



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