

DIGITAL DIVIDE

HOW TECHNOLOGY ACCESS IMPACTS COMMUNITY COLLEGES
ACROSS THE UNITED STATES DURING A PANDEMIC



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TABLE OF CONTENTS

ACKNOWLEDGEMENTS..... 1

INTRODUCTION..... 2

DIGITAL DIVIDE IN THE UNITED STATES 3

CORONAVIRUS AID, RELIEF, AND ECONOMIC SECURITY ACT 3

SPOKANE COMMUNITY COLLEGE DISTRICT..... 4

NAVAJO NATION 5

LOS ANGELES COMMUNITY COLLEGE DISTRICT 6

CONCLUSION..... 7

ENDNOTES 8



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INTRODUCTION

The term “digital divide” is defined as the inequalities among individuals, households, and other groups of different demographics and socioeconomic levels in access to information and communications technologies. In the case of community college students, individuals across the country, in a wide variety of settings, can experience lack of internet access or slow, inconsistent or incomplete lack of access to a computer at home. Both of these issues present challenges under normal circumstances, but can make virtual learning exceptionally difficult during a pandemic.

While the digital divide is not a new phenomenon, it was exacerbated by the COVID-19 pandemic. Students who might not have had a computer or internet access at home could use these services on campus. For the majority of the 2020 calendar year, and at least through the first quarter of 2021, students did not have regular access to a campus or in-person learning. This caused community colleges across the country to grapple with the question, “How do we remove as many barriers as possible between students continuing progress toward their educational pursuits?”

This paper will look at the current state of the digital divide in the United States and how it is affecting community college students during the COVID-19 pandemic. Leaders at community colleges in Spokane, Washington, Los Angeles, California, and on the Navajo Reservation were interviewed to show what the digital divide looks like in an urban, a suburban, and a rural community and how it is affecting each college’s students. While all colleges are faced with different circumstances, similarities emerge as the digital divide impacts students across the country.



DIGITAL DIVIDE IN THE UNITED STATES

The digital divide in the United States is not specific to urban, rural, or suburban communities. While the divide is widespread geographically, lower-income households are less likely than higher-income households to have internet access. The lowest median incomes have home internet adoption rates around 50% compared to above 80% for higher-income households.¹ Additionally, internet access is tied to education level. Fewer than 50% of households where the head of the household did not graduate from high school had internet access at home.² There is also a racial disparity in internet access with Native American, Black, and Hispanic households trailing White home internet access by more than 10%.

A primary challenge in many rural communities is that the infrastructure for high-speed internet simply does not exist. On the Navajo Reservation, the rugged and varied geography presents a variety of challenges for laying fiberoptic cable. This reality puts similar communities at a disadvantage before even encountering the issue of in-home high-speed internet affordability. While rural communities are less likely than urban communities to have access to high-speed internet, many individuals in urban communities cannot afford high-speed access.

Computer access is another aspect of the digital divide. In 2016, only 77% of households in the United States had a laptop or desktop computer. While this number was increasing steadily since the 1980s, it plateaued in 2012. However, the Current Population Survey predicts that number will continue rise steadily. Additionally, the survey finds that households in metropolitan communities are more likely to have a computer than households in rural communities.³ Access to an internet-connected smartphone is becoming more common in lower-income households; however, a smartphone is not adequate for regularly completing coursework.

CORONAVIRUS AID, RELIEF, AND ECONOMIC SECURITY ACT

The Coronavirus Aid, Relief, and Economic Security (CARES) Act is an economic stimulus bill that was signed into law on March 27, 2020 at the beginning of the COVID-19 Pandemic.⁴ The \$2.2 trillion package included \$300 billion in one-time payments to individuals, \$260 billion in unemployment benefits, and \$339.8 billion in aid to state and local governments, among other expenditures.

Of the \$339.8 billion directed toward state and local governments, \$274 billion was designated for programs specific to COVID-19 response, \$13 billion for K-12 schools, and \$14 billion for higher education, among other expenditures.⁵ CARES Act funding has been critical in community colleges' abilities to bridge the digital divide during the pandemic. Not only has this funding been used to provide aids such as internet access and computers to students, but it has also been used to enhance and sustain technology-based services, offered by colleges. At Spokane Community College in Washington, federal funding is essential to serving students by maintaining the necessary educational staffing, providing technology tools, managing covid-19 safety measures and developing additional support services so these displaced or discouraged students can return and be successful.⁶



SPOKANE COMMUNITY COLLEGE DISTRICT

Spokane is a city in eastern Washington state and is home to about 217,000 people. The Spokane Community College District (also known as the Community Colleges of Spokane, or CCS) has two primary campuses, Spokane Community College and Spokane Falls Community College, with a couple of satellite campuses. The district contains rural, suburban, and urban areas and serves more than 28,000 students.

Once the pandemic necessitated the temporary end of in-person education, CCS jumped into action to ensure students experienced as little interruption as possible. Their first step was to circulate a survey to assess students' and staffs' technology needs. Fifteen percent (15%) of students did not have adequate access to the technology necessary to continue their studies virtually. Simultaneously, CCS developed and launched a "virtual campus" to help students find resources online. Students also had access to "success coaches" to guide them through the process of beginning virtual classes, advising, and navigating other services.

In response to the survey, CCS was able to loan approximately 700 laptops and 200 personal hotspots to individual students for use at home. Additionally, the CCS Foundation received requests for daily emergency aid at seven times the normal rate during the spring 2020 quarter. To meet increased demand for aid, CCS launched Project Finish Line to make sure their students could stay focused on their educations. Students could receive up to \$1,000 during the pandemic to help with expenses related to computers, Wi-Fi, and childcare.

Separate from CCS Foundation contributions, CARES Act funding has been critical in CCS's ability to provide aid to students and bridge the digital divide during the pandemic. Between both CCS campuses, the CARES Act provided \$7,631,516 in funding. On both campuses, that funding was equally split between institutional operations support and direct financial aid to students. The Governor's Emergency Education Relief (GEER) Fund also provided a considerable amount of assistance with CCS receiving a total of \$4,354,642. Nearly four million dollars (\$3,962,374) were used for backfilling support operations, and \$392,268 went toward student support.

"Federal funding has been and will continue to be essential so we can serve students by maintaining the necessary educational staffing, providing technology tools, managing COVID-19 safety measures and developing additional support services so these displaced or discouraged students can return and be successful," said Dr. Christine Johnson, Community Colleges of Spokane Chancellor.

Overall, CCS saw its efforts result in a considerable amount of success. Online students who connected to an eLearning success coach were retained at higher rate with earlier continuing registration than the general population. The average online student spring GPA was 3.12 compared to a general average of 2.68.



NAVAJO NATION

Navajo Nation is a rural area, roughly the size of West Virginia, that covers parts of Utah, Arizona, and New Mexico. The population of the area is 173,667, with about 96% of those individuals being American Indian. The land is dotted with mountains, canyons, and mesas that contribute to a breathtaking landscape, but which present a number of challenges regarding access to education and infrastructure.

Founded by the Navajo Nation Council in 1968, Navajo Technical College was the first tribal college in the United States. It currently serves about 2,000 students across seven campuses. In the early stages of the COVID-19 pandemic, Navajo Technical College, like many institutions across the country, decided to completely halt in-person learning in favor of virtual solutions.⁷

For any student, regardless of location, having consistent access to a computer and to internet is essential for being able to effectively complete coursework and participate in online classes. Given how rural Navajo Nation is, challenges immediately arose. Some students who were living in on-campus dormitories had to move home or elsewhere, not necessarily in a location conducive to participation in online education due to the poor telecommunications infrastructure in the area. The shutdown also affected students who did not live on campus, but who typically took advantage of readily available computers on campus.

The college is currently providing a number of solutions for students, improving those solutions and working on implementing new technologies to increase internet access across Navajo Nation. Wireless hotspots were one of the solutions initially made available to students, which were heavily used. Hotspots were available on-campus in parking lots, as well as at K-12 schools. Navajo Technical College also was able to make laptops available to students through CARES Act funding and provided gift cards students could use to purchase gasoline for their vehicles if they needed to drive to a hotspot.

In addition to more conventional methods of providing internet access to students, Navajo Technical College is interested in developing and working with newer technologies, including Citizen Broadband Radio Service (CBRS) and Educational Broadband Service (EBS).⁸ CBRS is a band of radio-frequency spectrum that has the ability to provide internet users with much faster wireless access in a relatively cost-effective manner.⁹ In the case of Navajo Nation, CBRS has the potential to provide line-of-sight access at speeds greater than 1Gbps and could replace last-mile fiber access in areas where laying fiber-optic cable would be impractical or cost-prohibitive.

EBS, like CBRS, is a wireless spectrum, or radio frequency, that allows data to be transmitted. EBS is a specific band that the Federal Communications Commission (FCC) has designated to be used for the public good.¹⁰ Within the past few years, the software necessary to run faster networks has advanced enough to have similar capabilities as more expensive platforms. This has made EBS a more practical option in rural communities. Additionally, the fact that EBS was designated to be used for the public good has kept costs down and more affordable for lower-income rural and tribal areas. Both EBS and CBRS will continue to be important technologies after the pandemic wanes as laying fiber-optic cable will still be a challenge in rural areas and, as a result, access to fast internet will not be guaranteed.



LOS ANGELES COMMUNITY COLLEGE DISTRICT

Los Angeles, California is a dense, urban area with a population of nearly 4 million people. The Los Angeles Community College District (LACCD) is comprised of nine campuses serving 229,793 students. The student population is predominantly Latinx students (58.6%). LACCD, as a whole, awarded over 30,000 degrees and certificates in the 2019-2020 academic year.¹¹

“The economic conditions of different portions of Los Angeles have greatly impacted the ability to go to school,” said Ryan Conner, vice chancellor of educational programs and institutional effectiveness for the Los Angeles Community College District. “In the 2019-20 school year, we had over 80,000 students qualify for the California Promise Grant, which permits enrollment fees to be waived [income of roughly 150% of the poverty line and below qualifies]. In Los Angeles, under 150% of the poverty line would be approximately \$45,000 for a family of four.”¹²

Although Navajo Technical College and LACCD are different, many significant aspects are similar, and both are challenged by the digital divide: One of the biggest issues facing LACCD students is access to computers and the internet. At the beginning of the COVID-19 pandemic, all nine campuses closed to students. This cut off vital access to computers and the internet for many students. “Just to finish the spring [2020] semester, we were able to get out between 10,000 and 12,000 Chromebooks to students,” Conner said. “We were able to double that as we came back for fall. We did an online transition survey in the spring [2020] and found that 22% of students either did not have access to a computer, or did not have regular access to a computer. Three-and-a-half percent (3.5%) do not have access to internet, and 14% do not have regular access to internet.”¹³

Even if students do have access to an internet-connected computer in their home, they might have to share that computer with siblings who also need to complete coursework or attend virtual classes, or with parents who require access as well. Some students have resorted to using a smartphone to complete work or attend virtual class, but this is far from ideal. The smaller screen makes software designed to be used on a computer impractical to use, and internet connectivity issues are still present. Conner said that “one of the biggest barriers to this online environment was that students didn’t have an appropriate place to study.”¹⁴

Even in a large city like Los Angeles, internet connectivity is not synonymous with having adequate speed. A home that has multiple computers and internet access can still experience connectivity issues when multiple in-home users are competing for limited bandwidth at the same time. Essentially, family members are working from home while students are attending school online, this makes it difficult for everyone to gain access at the same time during the day.



CONCLUSION

All communities—urban, rural, and suburban—would benefit from faster internet, and more widespread internet access. Even when our nation’s students are not trying to pursue studies during a pandemic, those who do not have consistent access to fast internet are disadvantaged. Additionally, it is critical to students’ success that every student has access to a computer, and ideally to one of their own that they do not have to share, so they can consistently access online classes and complete coursework away from campus.

The digital divide has compounding effects. Community college students have to make difficult choices every day to continue their educations. Pre-pandemic, a student might have had a workable budget that included educational expenses and childcare. This theoretical student doesn’t have internet access at home, but still was able to complete their coursework prior to the pandemic by using their institution’s internet. Now, during a pandemic, that student may have to choose between childcare and paying for home internet access—if that student has a home computer and if internet access is available in the student’s area.

Through the experiences of Navajo Technical College on Navajo Nation, Los Angeles Community College District in California, and Spokane Community College District in Washington, we see that a lack of access to fast internet and computers is not unique to urban, suburban, or rural areas. Each area, and each student within that area, has specific challenges related to the broader digital divide in the United States. It is also clear that federal funding is absolutely vital to community colleges’ efforts to bridge the digital divide. The CARES Act provided critical funding for a variety of methods used to ensure students’ access to technology and high-quality instruction during the COVID-19 pandemic.

Although these challenges exist, each of these three community colleges is making efforts to remove as many barriers to education as possible. Navajo Technical College is providing students with a variety of aid, including gas cards, allowing students to drive themselves to internet hotspots on campus and investigating EBS and CBRS wireless technologies to provide internet with a wider reach in the future. Navajo Technical College was also able to make laptops available to students. The Los Angeles Community College District undertook a widespread effort to supply Chromebook laptops to all students in need. The district was able to distribute over 10,000 Chromebooks to students at the onset of the pandemic. Spokane Community College District launched a survey to determine technology needs, and a virtual campus to guide students through the transition to virtual education. The district was also able to distribute laptops and hotspots to students and, through CARES Act funding, ensure that staffing was available to provide high-quality virtual instruction.

These are only three of approximately 1,200 community and technical colleges throughout the United States, many of which have faced similar challenges to keeping students online so that they can continue their studies during the COVID-19 pandemic. Even after the pandemic abates, the digital divide will remain a significant hurdle for many students throughout the United States, reducing access to education and discouraging some students from persisting and completing. Investing in improving technological infrastructure, including innovations where physical broadband access is geographically prohibitive, is the only way to bridge the digital divide that stubbornly contributes to socioeconomic and academic inequities throughout the United States.



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