

When school is online, the digital divide grows greater

Enlarge / A student studying on his laptop with two friends after classes were cancelled.

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Like many students around the world, Nora Medina is adapting to online learning. But Medina, a high school senior in Quincy, Washington, who also takes classes at a local community college, faces an additional challenge: She doesn't have reliable Internet service at home. She lives 7 miles outside of town where she says neither cable nor DSL Internet is available.

She can access the Internet on her phone, and her family has a wireless hotspot, but she says the service isn't up to the task of doing homework online. "It's hit and miss," she says. "Sometimes I can watch a video, but sometimes I can't even refresh a page, or it will take minutes to load something on a page."

Washington governor Jay Inslee this week said the state's schools will be closed for the rest of the school year. Quincy High School is still planning how best to help students finish the year. But Medina's classes at Big Bend Community College have shifted online. "I'm just going to hope the hot spot works and wish for the best for my final quarter," she says.

“If that doesn’t work, I’ll do my work from my car in the parking lot at the library to access their Wi-Fi.”

Medina is one of millions of people in the US who lack reliable broadband Internet at home, either because they can’t afford it or because it simply isn’t available where they live. This digital divide has always left children and adults alike with fewer educational and economic opportunities. But with schools, libraries, and workplaces closed during the coronavirus pandemic, those without broadband are struggling to access schoolwork, job listings, unemployment benefit applications, and video chat services that others use to keep in touch with friends and family. For those on the wrong side of the digital divide, working from home isn’t an option.

The Federal Communications Commission says more than 650 broadband Internet providers, telephone companies, and trade associations have signed its Keep America Connected Pledge to not terminate Internet service over pandemic-related financial troubles, to waive late fees, and to allow free access to Wi-Fi services. Comcast said it would offer free access to its broadband service for low-income households, normally priced at \$10 a month, for 60 days, and Charter said it would offer free Internet access for students for 60 days. But these offerings are available only in locations where those companies already provide service.

It’s hard to gauge the extent of the problem. In a report last year, the FCC estimated that 21.3 million people had no access to broadband Internet service at the end of 2017. But the report, based on self-reported data from broadband providers, considers an entire census block to have service if a single broadband provider claims to offer service anywhere within the census block, even if most homes within the area can’t get service. Critics have long pointed out that this method likely

underestimates the number of people without access to broadband.

A report published last year by Microsoft estimated that 162.8 million people in the US—about half the population—don't use broadband Internet, whether because it's unavailable where they live or they can't or won't pay for access. A survey commissioned by Microsoft and the National 4-H Council found that 20 percent of rural youth lack access to broadband at home, regardless of whether it's available where they live.

How schools are coping

The digital divide creates a challenge for teachers and administrators who know some students can't easily follow online lessons. Berkeley, California, schools closed in the middle of March, but the district didn't begin online classes until Monday. In the interim, public schools superintendent Brent Stephens says officials had to work out how to accommodate special-needs students, adjust union contracts, and plan lessons for 16,000 students.

But, Stephens says, "equity has been a concern" too. He estimates that about 5 percent of the district's students lack reliable Internet access at home, and about 30 percent need devices suitable for online learning. He says the district has distributed more than 2,000 Chromebooks to students and ordered wireless hotspots for students who don't have reliable Internet access at home, though it's not clear when those hotspots will be available. In the meantime, the district is still considering how to get learning resources to students without Internet access.

Some schools are employing low-tech solutions. Bandon School District on Oregon's southern coast plans to deliver and collect physical packets of learning materials and assignments to the 18 percent of students who superintendent Doug Ardiana says lacks Internet at home.

When Oregon governor Kate Brown closed schools on March 12, Bandon schools sent out “supplemental” learning assignments that didn’t need to be returned. Now, schools will be closed for the rest of the school year, and schools are supposed to offer distance-learning programs, including graded assignments.

To prepare students for those assignments, teachers are filming lessons that students can watch from home over the Internet. “It’s a whole new thing,” says Courtney Wehner, a third-grade teacher at Ocean Crest Elementary in Bandon. “I’m not used to hearing my voice recorded.”

For students who lack Internet access, the school will send packets of materials to their homes, either through the mail or with school bus drivers wearing protective gear. Students who can use them will get DVDs or thumb drives with the recorded lectures. Wehner says that includes all of her students. Others will have to depend on written materials.

Wehner says the parents of her students who lack broadband Internet will take pictures of completed assignments with their phones and send them to her for grading. Students in the district who can’t return assignments that way will send completed assignments back with bus drivers or the postal service, and someone at their school, also wearing protective gear, will scan the assignments and upload them to a server that teachers can access from home. Teachers will review and correct the assignments and print them out, and the corrected assignments will go back to the students three days later.

A \$20 billion fix for a \$70 billion problem

The FCC has spent billions in recent years in the name of closing the digital divide. But that divide persists in part because the agency has repeatedly underestimated the scope of

the problem, says FCC commissioner Jessica Rosenworcel. "How do we know we're sending money to the right places?" she asks.

The Rural Digital Opportunity Fund, which replaced a previous initiative called the Connect America Fund, gives carriers money to build broadband in communities that lack access to connections of at least 10 megabits per second. It's set to send \$20.4 billion over 10 years to carriers to expand rural broadband access. But John Windhausen Jr., executive director of the Schools, Health & Libraries Broadband Coalition, says the Fiber Broadband Association estimated last year that it will cost \$70 billion to bring fiber-optic networks to 90 percent of the US by 2025.

Beyond the pledges from carriers to not cut off service, the FCC has permitted libraries and public schools to offer public Wi-Fi while the buildings are closed without risking FCC funds, and has moved to dedicate a large chunk of spectrum for unlicensed Wi-Fi use instead of auctioning off licenses for it; advocates say that could make it easier to provide wireless broadband services in rural or low-income areas.

But critics say the FCC in recent years has impeded efforts to close the digital divide. Last year the FCC voted to auction off wireless spectrum that had been reserved for schools to the highest bidder, which Windhausen says will make it harder for schools, local governments, and nonprofits to use that spectrum to create their own wireless services.

The FCC under Chairman Ajit Pai has resisted expansion of Lifeline, a 35-year-old program that subsidizes access to telecom service for low-income households. Lifeline has remained intact, though. In February 2019, a federal appeals court overturned Pai's attempt to limit broadband subsidies for tribal residents. Another Pai proposal that would have prevented poor people from buying Lifeline plans from network resellers was quietly scrapped after widespread condemnation. Pai pressed on in mid-2019 with a proposal to impose an

overall cap on Universal Service spending, including Lifeline, but the plan hasn't been finalized.

This story originally appeared on wired.com.

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