

# WISCONSIN'S DIGITAL DIVIDE AND ITS IMPACTS ON LEARNING

*As the COVID-19 pandemic spurs Wisconsin schools to undertake an unprecedented exercise in virtual and distance learning, districts throughout the state are grappling with how to provide devices and internet access to students without them. Data show these children are in both cities and rural areas, and are disproportionately low-income and students of color.*

The COVID-19 crisis threatens to exacerbate the “digital divide” between students who have fast, reliable at-home internet access and those who do not. This divide has long been significant, but recent events underscore its importance – it now can determine which students have a seat in their new virtual classroom and which are left to fend for themselves.

According to 2018 data from the U.S. Census Bureau, nearly 370,000 Wisconsinites – 6.6% of the state population – did not have an internet subscription in their homes. This included more than 82,000 Wisconsinites under the age of 18. These students without reliable internet access risk falling behind in classes that have moved online, potentially widening existing racial and socioeconomic achievement gaps.

While most Wisconsin households have reliable access, home access for all students is far from assured. About one-third of all school districts report that at least a quarter of their students do not “have enough internet access at home to complete homework assignments and other school related activities,” according to survey data from the Wisconsin Department of Public Instruction (DPI).

In this report, we seek to broaden understanding of the number and characteristics of students in Wisconsin who lack reliable home internet access. Then we look at strategies implemented both in Wisconsin and elsewhere to help those students.

One factor not reflected in the data cited here is how the COVID-19 pandemic may change internet access

status in some households, particularly where job losses or other economic hardships occur.

## INTERNET ACCESS

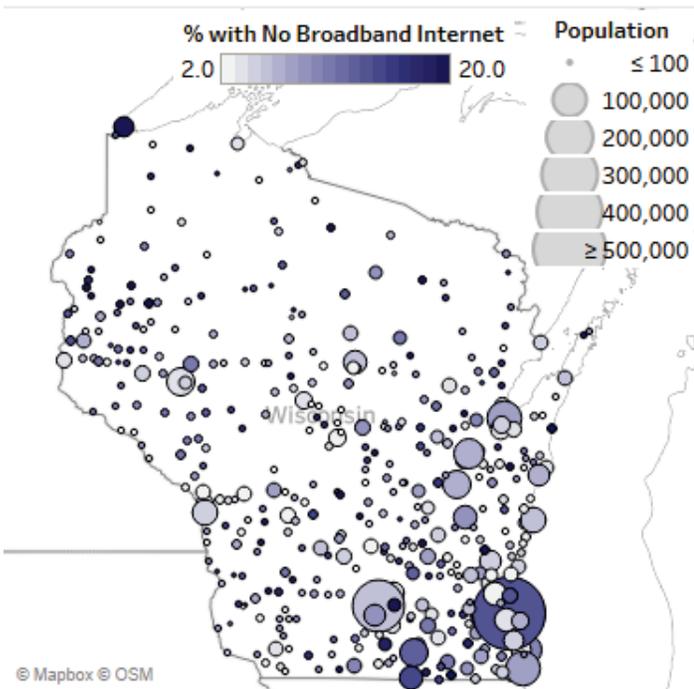
Data collected by DPI’s Digital Learning Survey sheds light on students’ access to online learning in districts before COVID-19. In recent weeks, districts made urgent efforts to expand access. However, increased demand for internet and device usage – when entire families may be working and learning from home – could place additional burdens on bandwidth, further reducing access for students. Additionally, economic fallout from the pandemic may mean more families struggling to afford internet access or even housing.

One note of caution in interpreting the data: school districts’ response to the survey may in some cases come from estimates rather than concrete data. Also, in responding, the districts decided what constituted adequate internet access.

DPI survey results collected in 2019 show a difference in internet access depending on district size, with larger districts reporting greater access. Among districts with fewer than 500 students, 47% said more than three-quarters of their students had enough internet access at home to complete homework assignments. Among districts with more than 2,000 students, 80% reported meeting that threshold.

Most concerning, nearly 10% of districts overall said fewer than half of their students have adequate internet access.

**Figure 1: Children Lack Broadband Throughout Wisconsin**  
Share of under 18 population with computer but no broadband connection in the home



Source: U.S. Census Bureau, 2018 American Community Survey Data  
Note: Municipalities with coverage of 98% or more excluded

When asked about the reasons for their students' lack of internet access, 45.5% of all districts cited cost as the reason at least half of their students who were without internet lacked access. Lack of internet fiber was another impediment: 33% of small districts said at least half of their students lacked access due to their geographic location. Just 8% of large districts said the same.

Figure 1 uses U.S. Census Bureau data to show statewide differences in access to broadband internet (i.e. high-speed), which now constitutes the overwhelming majority of all internet subscriptions. The bureau defines broadband access as having one of the following: broadband such as cable, fiber optic, or DSL; a cellular data plan; satellite; or a fixed wireless subscription. The data include only those who have a computer in their household, meaning those who lack broadband access are understated.

The figure shows that many rural municipalities have significant shares of residents under age 18 who lack access, but the problem extends to some cities and outer suburbs as well. In fact, some large cities exceed

Wisconsin's average of 6.4% of residents under age 18 without access. Notably, 13.4% of children in the city of Milwaukee lack access to broadband at home, more than double the state average.

While Madison has better-than-average home broadband access for its children (5.6%), more than 22% of children in nearby Cottage Grove don't have broadband at home. Other large cities with sizable shares of children without home access to broadband include Janesville (12.4%), Beloit (14.7%), and Racine (9.7%).

A racial divide in broadband access is also evident. Statewide, 13.6% of black residents and 11% of Hispanic/Latinx residents lack broadband access, as shown in Figure 2. For white residents, the statewide average is 5.8%.

## DEVICES

The DPI survey also asked districts about which students received school-issued devices. In general, students were more likely to be assigned portable devices as they got older, with middle and high school age students most likely to receive them. However, 15.6% of districts indicated that they don't assign devices at all.

Without district-provided devices, students may have difficulty accessing online content. Statewide, 3.8% of children live in households with no computer (even including devices such as iPads or smartphones). In Milwaukee that share is 9.2%; in Madison it is just 1.6%.

Statewide, 13.4% of black residents have no computer. For Hispanic/Latinx residents, 8.3% statewide have no computer.

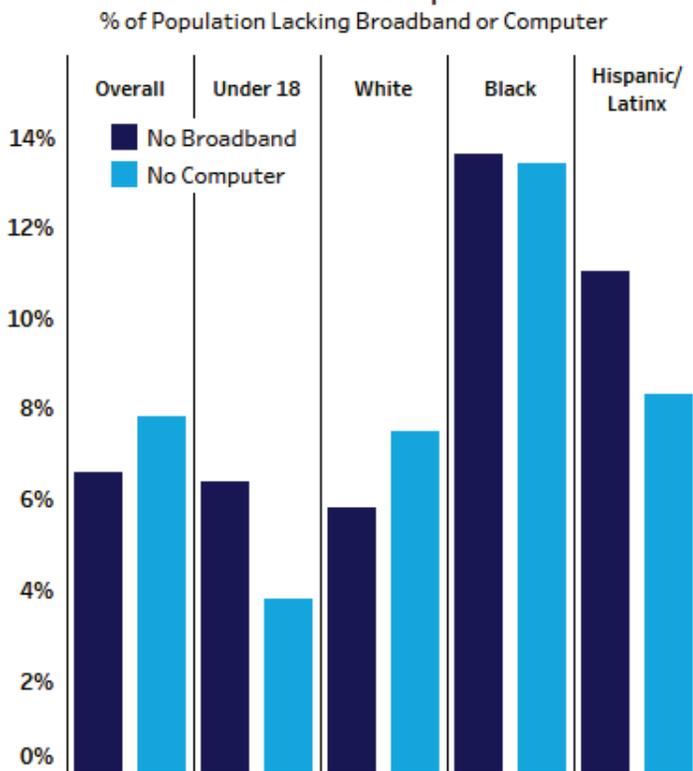
## SOLUTIONS: WHAT OTHER DISTRICTS ARE DOING

For students without home internet access, schools and libraries are vital. But with those closed indefinitely, these students may be experiencing what amounts to a complete loss of access.

Many districts are working to give students the devices and connectivity they need. Here we focus on the state's largest districts, Milwaukee Public Schools (MPS) and the Madison Metropolitan School District (MMSD).



**Figure 2: Broadband, Device Ownership Differ Across Racial and Ethnic Groups**



Source: U.S. Census Bureau, 2018 American Community Survey Data

In [both districts](#), web pages direct families who lack access to free Wi-Fi services that can be installed in their homes, though access to the web page for those families could present a challenge. Madison schools are working to make internet hotspots available and directing families to community internet access points outside their homes, in locations such as parking lots. MPS and Madison schools also distributed Chromebooks to students who did not have a reliable device for schoolwork.

MPS provides grade-specific content packets online and makes paper packets available at school locations along with grab-and-go meals. Madison schools is continuing to operate online through Google Classroom, a web-based platform for classroom assignments, and using Zoom for online meetings while sending or shipping home paper packets for students in grades K-8.

Looking elsewhere, peer school districts face similar challenges. A look at peer cities including Oklahoma City, Charlotte, Memphis, Cincinnati, Toledo, Kansas City, Raleigh, and Columbus shows them using a mix of

strategies similar to those employed in Milwaukee and Madison. In another peer city, Greensboro, North Carolina, the district planned to distribute more than 5,000 tablets, while also setting up eight school parking lots as areas to access WiFi.

For rural schools, challenges are even greater. While most areas of the state technically have broadband access, speeds are variable – causing some [students to seek access](#) to public WiFi from [parking lots](#).

Another component is face-to-face instruction with teachers via video chat. Though MPS, MMSD, and their peer districts all have some sort of learning plan in place, only some of these districts will enable students to meet with their teacher via video chat before the end of the academic year. While MMSD’s website emphasizes digital contact between students and teachers, MPS is focusing instruction around online and downloadable content. Columbus, Kansas City, Memphis, Raleigh, and Greensboro all offer some level of direct, remote teacher interaction for students.

### THE ROAD AHEAD

From Milwaukee to the state’s far north, schools in Wisconsin have had to quickly adapt to the pandemic, moving instruction out of classrooms and into the home. They will soon have some assistance from federal resources, as DPI plans to quickly disburse to school districts 90% of a \$175 million appropriation it will receive from the federal CARES Act. This funding can be used to “[purchase] educational technology (including hardware, software, and connectivity) for students...including low-income students and students with disabilities.”

An April 29 plan issued by State Superintendent Carolyn Stanford Taylor indicates that direct-to-district funds provided by the legislation will be used for general support as well as access to online instruction, training, and mental health services. MMSD has indicated its share of this appropriation will likely be its “only significant federal funding source” from the CARES Act, though it and other districts may see later appropriations from other provisions of the measure.

For the rest of the academic year – and potentially longer – the vast majority of 4K-12 learning in Wisconsin will take place online. This is a seismic shift in instruction that districts have had to adopt with unprecedented speed.



Our analysis reveals a need for additional data to show with greater precision which students need help to access online learning tools, either because they lack a device, in-home connectivity, or both. Students with disabilities and English Learners may face particular challenges in accessing education in the home. Many districts, including MPS and MMSD, issued surveys to families once schools had been closed, while others have surveyed families previously. Analysis of their responses may show an imperative to spend additional funds to purchase and ship devices to students in need depending on how this crisis evolves.

Much work also will be required to understand how the pandemic has affected students, whether it has exacerbated existing disparities, and what can be done to respond. Until then, some students on the margins – including both rural and urban students, students of color, students with disabilities, and English Learners – could face further hurdles as the digital divide becomes an even bigger policy challenge.

