No home Internet = barrier to school progress

By Aaron Sankin, Reveal

It was only a few days into the school year when Stacy Fox realized that the iPads were going to be a problem.

In 2014, public schools in Faribault, Minn., kicked off a pilot program giving an iPad to every student in the district. Funded by a tax levy passed the previous year, the iPads were meant to be instrumental in the learning process. Students would be required to bring the iPads to school every day and use the tablets to do their homework in the evenings. English teachers could load e-books onto the devices. Music instructors could have students record themselves rehearsing and provide feedback online.

For Fox in particular, the iPad program was a potential panacea. A special education teacher, Fox works with students with mild to moderate disabilities – primarily ninth- through 12th-graders with attention deficit hyperactivity disorder or conditions on the autism spectrum. Fox knew the immediate feedback these devices provide would be a special boon for the kids in her classes.

“I have noticed in my own lessons that they are tremendous tools holding tremendous power to really open things up for students who may struggle with traditional learning,” she told Reveal. “This opens up a new world of tactile and visual education – to utilize it to its fullest would be amazing.”

Even so, Fox saw one of her students struggling with his iPad almost immediately. He was supposed to complete homework assignments on his device and upload them to the school’s learning management system for grading, but the completed work wasn’t showing up.

Fox quickly realized the problem was with the technology itself. Her student was falling behind because doing homework on the iPad required access to the Internet, which the student didn't have at home.

"It's really difficult to turn in an assignment, take a class quiz or post on the class discussion board without the internet," Fox said. "The devil's advocate may argue that a student could do this before or after school using the school's WiFi. That's reasonable if a student only has assignments in one class, but students have six to eight periods in a day, and that can be a real time crunch."

About an hour's drive south of Minneapolis, Faribault has a population of just more than 23,000 people. During the 2015-16 school year, 58 percent of students in the school district had family incomes low enough to qualify for free or reduced-cost lunches. The town has a growing population of Somali immigrants, and schools are increasingly full of students with families from Mexico and Central America. Lack of home internet access, Fox observed, is a common problem.

She said the geography of Faribault, which lacks comprehensive public transportation, is such that much of the city's poverty is clustered in trailer parks scattered across town.

Places with Internet access, such as a public library or McDonald's, are often too great a distance for a student to walk if he or she can't get a ride – especially in the frozen heart of a Minnesota winter. Special education students are disproportionately likely to be living below the poverty line, and Fox saw firsthand how efforts to bring education into the 21st century were inadvertently creating a new digital divide just as they bridged an old one.

She said that some of her students "don't have the ability to do their homework anymore. … They're failing the classes because it looks like they're not doing the assignments as

they should. … This just isn’t fair. You’re taking kids who are already at a disadvantage one step back further away from their more affluent peers.”

In recent years, schools around the country have made a major push to put internet-connected devices into the hands of every student. A 2014 report by the education nonprofit Project Tomorrow found that one-third of all high school students were using wireless devices provided by their school districts.

While Fox expects these programs to become the norm within the next decade, she has found that shockingly little research has been done about the mismatch between students’ internet access at school versus at home. So she decided to do her own.

In addition to teaching, Fox is getting a degree in curriculum and instruction at Texas Tech University, primarily through the school’s online program. Earlier this year, she published “An Equitable Education in the Digital Age: Providing Internet Access to Students of Poverty” in the Journal of Education & Social Policy. The article calls on lawmakers, regulators and school administrators to effectively “extend” the school day by expanding home internet access to low-income students.

“At home, students can use educational technology to supplement their learning with virtual classrooms,” she writes. “They can communicate with teachers to answer questions, watch tutorial videos, and interact with material and experiment with hands on problem solving tasks. … However, in pushing students forward into this world of technology, schools may inadvertently be pulling half of its students back.”

In her research, Fox looked at the possibility of having schools issue students tablets with the ability to connect to cellular networks. Her conclusion was that, given the current state of the market, 4G tablets are far more expensive than their Wi-Fi-only counterparts and likely are not only not

worth the upfront cost, but they also end up saddling either schools or low-income families with recurring monthly charges.

“However,” she said, “if that’s what would work for a district in order to give a student digital access who may not otherwise have it, I would definitely advocate for the use of 4G tablets.”

A 2015 analysis by the Pew Research Center found that 82.5 percent of households with school-age children had broadband access. It’s a number that’s about 9 percentage points higher than the rate for all American households, but it still means there are at least 5 million households with school-age children lacking high-speed Internet access. Broadband subscription rates were tied closely to income.

“Low-income homes with children are four times more likely to be without broadband than their middle or upper-income counterparts,” the report states.

This digital divide also comes with a racial component. Minority households, the Pew study notes, make up a large share of that 5 million, with low-income black and Hispanic families with children lagging about 10 percentage points behind white households of similar socioeconomic status when it comes to home broadband service.

In recent decades, the federal government has made a significant push to expand internet access for low-income children, but the results of those efforts have been mixed. The Telecommunications Act of 1996 established the E-rate program to connect schools and libraries to the internet. Today, almost every school in the country has the infrastructure to get students online. However, those programs largely end at the edge of school property.

Under the Obama administration, the Federal Communications Commission expanded the Lifeline program from something originally intended to subsidize telephone service for poor

people into a mechanism for subsidizing home broadband internet connections.

However, many of the nation's largest telecom firms are opting out of participation in the subsidy program. AT&T, Verizon Communications, CenturyLink and Frontier Communications have informed the FCC that they will not accept the Lifeline subsidy in some or all of their coverage areas – though they did leave the door open for future participation.

As *Fortune* reports, the telecom firms have been reluctant to sign up for the program because of long-standing concerns about Lifeline users scamming the system with fraudulent claims. The government is in the process of creating an independent entity to vet Lifeline requests coming into the system, but that body isn't scheduled to be up and running until 2019. In the meantime, participating telecom firms are forced to shoulder the responsibility of ferreting out fraud on their own.

If the federal government isn't able to effectively close the home broadband gap, local school districts with infinitely smaller budgets face an even steeper challenge.

One Southern California school district, however, appears to have hit upon an innovative solution.

In the desert about 130 miles east of Los Angeles, the Coachella Valley Unified School District serves one of the poorest populations in the Golden State. Some 95 percent of the district's 18,000 students live below the poverty line.

In 2012, voters in the valley overwhelmingly approved a $41 million bond measure that went toward paying for iPads to be provided to every student in the district, making it the first public school in the country to guarantee a tablet for everyone who enrolls in classes. But administrators in Coachella, where 40 percent of students lacked Internet access at home, ran into the same problem Fox would encounter when

her Minnesota school district followed suit.

Coachella's response was to outfit its fleet of school buses with WiFi and park them around the area in the evenings and on weekends, providing mobile hot spots extending 100 yards outside of the buses. Many were strategically placed so they could cover local clubhouses where students could congregate.

When the district discovered the WiFi routers were draining the buses' batteries, school officials attached solar panels to the vehicles. The pilot program, which started with a handful of buses, proved so successful that it soon expanded to include nearly 100 buses and a host of other vehicles similarly retrofitted with wireless technology.

Darryl Adams, the superintendent who initiated both the iPad and bus WiFi efforts but recently stepped down citing health issues, told THE Journal that the initiative was about ensuring the most vulnerable young people in his community didn't get left behind.

"I went in and talked to the school board about this and about how we really needed a way to get everyone connected," he said. "In the 21st century, if you don't have access to information, you're going to be at a disadvantage. Access denied is education denied."

President Obama hailed Coachella's program in a 2014 speech, calling it, "really smart. … You've got underutilized resources – buses in the evening – you put the routers on, disperse them, and suddenly everybody is connected."

Fox has brought up the idea with tech specialists in her own district as a possibility, but it never came to fruition. Instead, she said, teachers who have run into the same connectivity roadblocks have found individual methods of attempting to adapt to the problem. When one colleague realized one a student couldn't participate on an online forum to discuss a reading assignment with his classmates, the

teacher had the student come in outside of class to discuss the assignment with him. Another converted videos intended to be streamed over the web into downloadable versions, which students could watch without internet access.

Despite these challenges, Fox asserts that finding systematic solutions is essential because technological change is driving an evolution in education, and students need to evolve along with it.

She recalled how, as a young teacher, she would show students how to use a physical encyclopedia to look up information. She eventually abandoned the lesson because it seemed like an anachronism in an age when people are more likely to do a web search than take an actual book off the shelf.

“I realized there is an assumption among most people, in and out of education, that young people have an innate ability to use technology,” she said. “Unfortunately, as I saw firsthand, this just isn’t true.”

She has noticed in her classroom that students will go to great lengths not to seem like they’re different from their classmates.

“It’s hard enough to get high schoolers to ask questions because they don’t want to seem dumb,” she said. “But then to say something like, ‘I don’t know how to do a Google search’ — that’s not something they’re going to ask. So they’re just going to sit in the back and passively learn if they can. If they can’t, then they’re just going to blow through it and guess. If they get it right, game on. If they don’t, they don’t. They never really learn to use and apply those skills.”