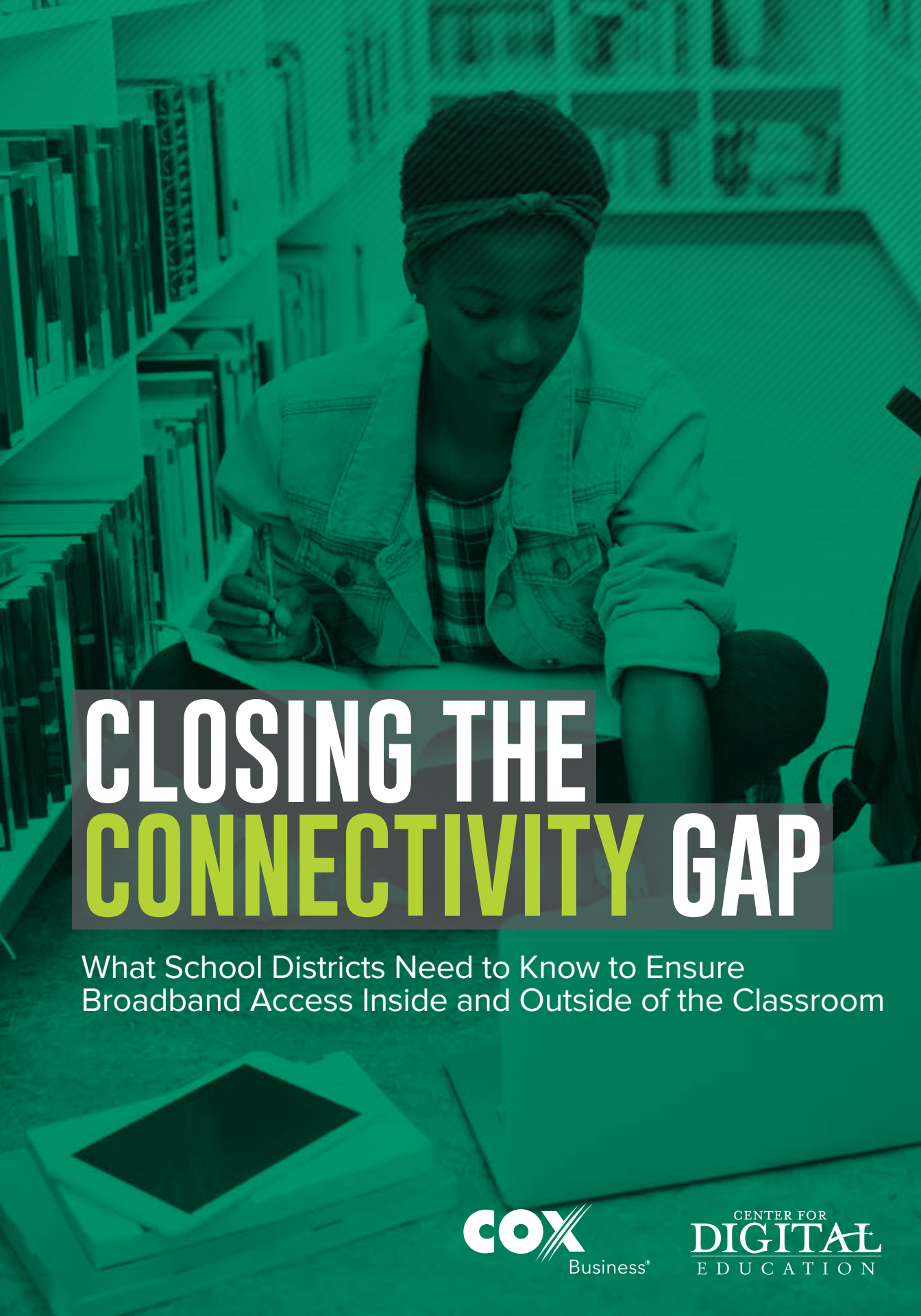

CLOSING THE CONNECTIVITY GAP

What School Districts Need to Know to Ensure Broadband Access Inside and Outside of the Classroom

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CONTENTS

As more states enact policies requiring digital instructional materials and districts embrace online learning, it is critical that all students have an equitable education environment. School districts throughout the country, however, struggle to ensure adequate broadband access inside and outside of the classroom. One recent study found nearly 30 percent of students in rural areas don't have access to fixed broadband at home, and the number is even higher — 35 percent — for students in remote rural areas. Sixteen percent of students in suburban areas still lack access.[1]

"As we have moved away from books to more digital formats, I'm hearing more and more that my kids can't do homework if it requires them to be online," says Karen Guidry, head of technology at Jefferson Davis Parish Schools in Louisiana.

To address the issue, school districts must not only build the appropriate infrastructure to deliver adequate connectivity to their classrooms, but also must work to ensure all students have access outside of the classroom. While there is no magic bullet, many districts have implemented innovative solutions to address this need.

The Center for Digital Education (CDE) conducted research and convened education leaders at three roundtables in Omaha, Neb., Baton Rouge, La., and San Diego, Calif., throughout 2018 to learn best practices and innovative ideas that have helped close the connectivity gap. This guide is a culmination of those efforts and helps answer some of education leaders' most pressing connectivity questions.

THE CONNECTIVITY CHALLENGE AT HOME

ALMOST 1/3

of households with children ages 6 to 17 with incomes below $50,000 do not have a high-speed internet connection at home.[2]

HOW DO YOU DETERMINE CLASSROOM & SCHOOL CONNECTIVITY NEEDS?

Textbooks are swiftly being replaced with digital resources and almost all testing is now done online. Many school districts offer virtual classrooms, distance learning and personalized learning initiatives. Videoconference technology is often used for virtual field trips so students can "visit" exciting locations throughout the United States or even across the world. Meeting digital classroom demands isn't easy.

"The challenge with any kind of distance learning — virtual school or old fashioned — is access and broadband speed, says Rob Dickson, Executive Director of Information Management Services at Omaha Public Schools. "You are only as good as your slowest connection."

> "You are only as good as your slowest connection."
>
> — Rob Dickson, Executive Director, Information Management Services, Omaha Public Schools

THE STATE OF CLASSROOM CONNECTIVITY

2.3 MILLION
STUDENTS DON'T HAVE CLASSROOM CONNECTIVITY

1,356
SCHOOLS STILL NEED FIBER

**Findings from EducationSuperHighway 2018 State of States report*

In addition, since many students have access to school-provided or personal devices, districts are seeing an increase in broadband usage for social activities. Not surprisingly, many technology leaders noted broadband usage spikes around lunchtime.

According to a recent EducationSuperHighway report, the demand for K-12 bandwidth continues to grow nearly 30 percent year over year. Even though 98 percent of districts currently meet or exceed the minimum 100 Kbps per student internet access goal, the constant need for more bandwidth is causing districts to upgrade to the Federal Communications Commission's (FCC's) 2018 goal of 1 Mbps per student of internet access. Only 28 percent of districts are currently at this level.[3] As a result, most districts need to think now about how their infrastructure can meet future bandwidth demands.

DESIGNING INFRASTRUCTURE TO MEET CAPACITY TARGETS

To help districts design their infrastructure to support broadband needs now and in the future, the State Educational Technology Directors Association (SETDA) provides broadband capacity recommendations based on district size.

Recommendations were most recently updated in 2016 following research, analysis of data sets from districts and consultation in the field.[4]

INTERNET SERVICE PROVIDER RECOMMENDATIONS

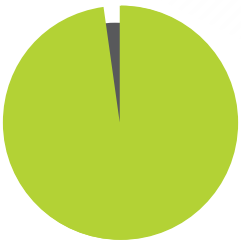
SCHOOL YEAR	2017-2018 TARGETS	2020-21 TARGETS
SMALL SCHOOL DISTRICT SIZE (fewer than 1,000 students)	**AT LEAST 1.5 MBPS PER USER** (minimum 100 Mbps for district)	**AT LEAST 4.3 MBPS PER USER** (minimum 300 Mbps for district)
MEDIUM SCHOOL DISTRICT SIZE (3,000 students)	**AT LEAST 1.0 GBPS** per 1,000 users^	**AT LEAST 3.0 GBPS** per 1,000 users
LARGE SCHOOL DISTRICT (more than 10,000 students)	**AT LEAST 0.7 GBPS** per 1,000 users	**AT LEAST 2.0 GBPS** per 1,000 users

Published by SETDA 2012; Adopted by the FCC in 2014
**User: students, teachers, administrators, staff and guests*

WAN RECOMMENDATIONS

SCHOOL YEAR	2017-2018 TARGETS	2020-21 TARGETS
CONNECTIONS TO EACH SCHOOL TO LINK TO THE INTERNET VIA A DISTRICT AGGREGATION POINT AND FOR IN-HOUSE ADMINISTRATIVE FUNCTIONS	**AT LEAST 10 GBPS** per 1,000 users	**AT LEAST 10 GBPS** per 1,000 users

Data from tables Published by SETDA[5]
**User: students, teachers, administrators, staff and guests*



98% of districts currently meet or exceed the minimum 100 Kbps per student internet access goal.

But only **28%** of districts currently meet the FCC's goal of 1 Mbps per student.

In some states, including Virginia and Louisiana, districts must meet specific connectivity goals to be eligible for state funding. This can be a double-edged sword, encouraging better connectivity by all districts, but also penalizing districts where capacity levels are below targets — even when it makes sense for their population.

To help districts achieve SETDA or other state-mandated capacity targets, one recommendation is to maintain a five-year technology plan. The plan should include upgrading equipment, not just broadband speeds. This type of long-term strategy can be critical to ensure a district has the funds needed to pay for upgrades.

Christine Foster, Supervisor of Technology for St. Martin Parish Schools in Louisiana, says having a long-term plan has helped ensure her parish can pay for more broadband cabling and equipment upgrades.

"We were fortunate enough to increase our broadband speeds because we thought ahead and put the cost in one of our bonds so that when E-rate money did come, we had the money to pay for the expansion," she says.

It is also important to recognize that designing your district's capacity for the future is key to closing the connectivity gap. When teachers do not have the capacity to meet students' needs, it becomes an equity issue.

"I would never want kids' experiences to be circumstantial, but that's what happens today," says Dickson. "You don't want to stop a Skype for Business opportunity in a classroom if that's the thing that will spark student interest in learning."

The key moving forward is for district leaders to understand how their schools use the internet, what is driving capacity increases — whether it's more consumption-based usage such as sharing videos or non-educational drivers like disaster recovery — and what that use will look like in the future. Then, plan both the technology necessary to meet future needs and the funding to implement it.

THE RURAL CONNECTIVITY GAP

The reality for some rural districts is that meeting bandwidth targets goes beyond planning or funding issues. In some locations rural districts lack broadband access due to geographical challenges of laying fiber. In others, the land is so sparsely populated there is little incentive for service providers. Yet, fiber is currently the only available technology for schools to meet today's and tomorrow's digital learning demands. According to EducationSuperHighway, rural and small-town schools represent three-fourths of the schools without fiber. These schools are spread throughout 45 states. While not a panacea, the use of E-rate special construction subsidies has been one of the best options to accelerate the expansion of fiber networks in rural locations.

HOW DO YOU ENSURE DIGITAL EQUITY?

Ensuring all students have access to digital resources outside the classroom is as important as providing connectivity within the classroom. Yet, this goal remains challenging for many districts. Currently, roughly 30 percent of adults with household incomes below $30,000 a year don't own a smartphone and nearly half don't have home broadband services or a traditional computer. Many lower-income Americans are not tablet owners. By comparison, many of these devices are nearly ubiquitous among adults from households earning $100,000 or more a year.[6]

Almost one million low-income inhabitants live within a quarter mile of a school or library.

To serve low-income urban populations, school districts must be innovative. Omaha Public Schools recently used a grant from the Nebraska Public Service Commission and partnered with Cox Communications to outfit a school bus with high-speed internet. Up to 50 devices can be used at a time on the bus and there is formal seating for about eight students with a couch in the back that can provide more room for students and parents.[7]

"We're trying to bridge that school-to-home gap," says Dickson. "This is what we see as the best opportunity for that."

The bus serves two district schools that are in high-poverty neighborhoods in north Omaha and is strategically placed after school and on weekends throughout these low-income communities, including at churches and community centers, to provide students a connected place to complete homework.

Additional solutions include providing students with hotspots they can take home with them, putting Wi-Fi on buses so students can do homework on the way home, and creating strong Wi-Fi signals outside school buildings or working with libraries and other community centers to provide access. With almost one

million low-income people living within a quarter mile of a school or library, these types of efforts can have a large impact.[8]

One-to-one device programs also help tackle digital inequity by providing students with devices they can use to do their homework. However, one-to-one programs should be carefully thought through, including whether students have access to the internet at home. For instance, when Kansas City Public Schools rolled out its one-to-one device program, 70 percent of students did not have internet at home.[9]

Foster has experienced this same issue at St. Martin Parish Schools. She notes that while the district has a one-to-one device program for fifth grade and up and are now working on scaffolding that down to the lower grades, there are still significant challenges.

"Our kids do not have access to the internet because there is no fiber network where many of them live and satellite is too expensive," she says. "I cannot in good conscience say I'm going to send home devices with the expectation that students can do homework when this expectation cannot be met. It all goes back to equity."

One-to-one device programs also help tackle digital inequity by providing students with devices they can use to do their homework.

Maribeth Luftglass, CIO at Fairfax County Public Schools in Virginia, recommends taking a multi-faceted approach to extend internet access outside of the classroom.

"We are hoping that the FCC and E-rate will expand the categories of internet access such as home mifi access," says Luftglass, but she also recommends reaching out to local businesses, libraries, parks and other community centers that can provide safe internet access for kids. "We provide internet access maps to our students to show where they can get free access. If they can't get free access at a location near them, they can check out a portable mifi."

She also notes that her district, which has student populations that are highly mobile and transient, has found the most success with mobile hotspots.

TRAINING TEACHERS TO HELP BRING DIGITAL EQUITY TO THE CLASSROOM

Another aspect of ensuring equitable access for all students is providing teachers and other staff with the training to support the initiative.

"It is not feasible to have teachers regularly be out of the classrooms, however," notes Ernesto Villanueva, Executive Director of Technology and Instruction for Chula Vista Elementary School District in California.

Instead, his district is getting creative by using different approaches to ensure teachers are supported on how to use technology to enhance student learning. Villanueva and his staff use District Resource Teachers as a way to provide teacher professional learning in multiple areas, including educational technology. This format allows classroom teachers to access one-on-one coaching sessions directly in the classroom. The district is also hoping to create its own online learning network where it can help streamline and improve the learning process by capturing best practices in the district and allowing teachers to share content. This process will also allow for online asynchronous learning opportunities that all staff can access anywhere, at any time.

ACCESS FOR ALL: SUCCESS IN SAN DIEGO

In a school district that represents the epitome of diversity, the seemingly impossible has become possible — digital access for all, inside and outside the classroom. With a mix of urban and rural students, the largest Middle Eastern refugee population in the country, up to 75 different languages spoken by students and nearly 70 percent of students qualifying for free and reduced lunch, Cajon Valley Union School District (Cajon District) had significant challenges to overcome.

According to Superintendent Dave Miyashiro, it started with hiring a chief technology officer with expertise in K-12 and a proven record of success. While California is ahead of many states in having ubiquitous Wi-Fi access in its communities, there are many steps Cajon District took that could easily be replicated in districts throughout the country.

Create a one-to-one program for all students. In this K-8 district, all students are given a Chromebook when they enroll. Students keep their devices for three years, getting new devices in third and sixth grade. Miyashiro says that while IT staff dealt with a lot of broken equipment in the first two years, those issues are now rare — so rare that he expects the district to no longer participate in a self-insurance plan for the devices in 2019.

To overcome costly break/fix issues, the district first invested in state-of-the-art, highly durable cases for every device.

"A semi can run over it; it's waterproof; they can drop it from the roof and it won't break," says Miyashiro.

Secondly, but perhaps most importantly, they gave students ownership over the devices.

"It's their device," says Miyashiro. "They get to keep it over summer break. They can put stickers on it, skin it, do whatever they want to make it their own."

Having this real sense of ownership has made all the difference in how students care for the device.

Extend access outside the classroom through multiple avenues. Often, the biggest challenge with digital equity isn't getting a device into students' hands but figuring out how they can connect that device outside of the classroom. To solve this issue, Cajon District:

- Amplifies and rebroadcasts schools' Wi-Fi signals with boosters so they can reach low-income apartments nearby.
- Supplies Wi-Fi in homeless shelters and other transition areas where students may be living. The district pays for the Wi-Fi at the school rate as an extension of the school's Wi-Fi.
- Promotes and supports Cox Communication's "Connect to Compete" program. This program offers eligible students and families internet and Wi-Fi access for only $9.95 a month. Promotional events are held at local school districts with food, child care and movies for kids, and translators, teachers and administrative staff explain the program and help parents register.

  "We have hundreds of parents turn out to these events," says Miyashiro. "We make it a big celebration that they are getting an amazing deal. We make them feel like winners — and they are."
- Take a case-by-case approach. When all of the above options are exhausted and the district still has a student without access, they address it.

  "We don't publicize it, but we are strategic in working with teachers and principals to identify kids who may not have access and work with them on an individual basis to ensure connectivity.

Leverage multiple funding options. E-rate has been an important funding avenue to help ensure the district has connectivity in all of its schools, but it has also used other avenues to help fund equitable access. The most notable was the passing of an education technology bond specifically for devices and infrastructure in 2016.

Miyashiro says the district's success was dependent on being flexible and working with the local community leaders, including the chamber of commerce, business owners, realtors and partisan leaders. By working with all stakeholders early in the process and being willing to let them help shape the language so they could buy into what they were supporting, the district got local leaders to support the bond rather than campaign against it.

Ultimately, Miyashiro believes the steps they took are achievable for all districts.

"The work is hard, messy and requires a lot of different levels of change with different stakeholder groups — primarily teachers. But, we need our district leaders to not just want to have equitable access, but commit to providing it," he says.

HOW DO YOU SECURE FUNDING TO SUPPORT GREATER ACCESS?

Whether it's having an innovative idea to bring connectivity to students outside the classroom or simply trying to bring broadband to all the classrooms in your district, often the biggest hurdle isn't the desire or the expertise, but a lack of funding. The good news is there are multiple funding options at school districts' disposal. These include:

- ✔ E-rate funding
- ✔ Local funding via bonds
- ✔ Community grants and local business support
- ✔ Partnerships with service providers

Success with any of these funding avenues will require the ability to build relationships and carefully document processes. Districts should work closely with their local and state representatives to get the support they need. According to SETDA, districts can work with their state government to:

- ✔ Provide direct state funding for broadband services
- ✔ Enact state policies to support deployment and adoption
- ✔ Utilize innovative purchasing options for increased buying power[10]

Of these options, E-rate is by far the most critical source of funding for almost every school district. However, applying for E-rate funds and maintaining compliance requires some effort. Districts must adhere to specific rules, including following state bid laws and identifying services through requests for proposals (RFPs) in some cases. To help districts comply with E-rate, school technology leaders recommend these best practices:

Keep detailed documentation. To maintain compliance, documentation cannot be ignored. Every contact with a vendor and every meeting with a team to review resources should be documented. This includes having all meeting attendees sign in and take notes on what the meeting was about. Remember that E-rate rules include a 10-year document retention requirement.

Maintain accountability and transparency. The expectation should be that with every E-rate funding award there will be an audit. It could be a desk audit, a phone audit or an onsite audit, but chances are high you will get audited. Therefore, it's important to track your resources and have a digital paper trail.

"Manage every dime like it's coming out of your own pocket," says Sheryl Abshire, chief technology officer at Calcasieu Parish Public Schools in Louisiana.

Get answers to any questions you have. Because accountability is high with E-rate, it's critical if you're not sure about what procedure you should be following or how to do something that you get an answer. The Universal Service

TAKING ADVANTAGE OF ESSA TO IMPROVE CONNECTIVITY

The Every Student Succeeds Act (ESSA) shifts more control than the previous No Child Left Behind Act to states in how they leverage federal programs across a wide range of possibilities. New flexible funding opportunities allow states to align resources toward the states' overall vision and priorities. This can include innovative ways to improve student outcomes, including providing students with digital access.

Funding requests must be evidenced-based or at least have an evidenced-based rationale for a specific program or initiative on which funding will be applied. Additionally, ESSA can be used to provide direct student services that will expand equity.

FUNDING FOR EQUITY, NOT EQUITABLE FUNDING

When making technology funding decisions, Chula Vista Elementary School District leaders look closely at the needs of each individual school. Executive Director of Technology and Instruction Villanueva notes that achieving equity is about "providing students what they need when they need it."

To that end, the district prioritizes support according to the need.

"It isn't necessarily that we'll provide more hardware," notes Villanueva. "But instead we may provide specific software tools and support for schools that serve a high number of students that are English learners or are socioeconomically disadvantaged, for example."

He compares it to having a patient in intensive care — you can't wait until next week to send the doctor over. Thus, students with the highest level of need require more frequent access to support.

Administrative Company (USAC) is an excellent resource for E-rate participants. The organization is well-staffed and diligent about providing support to schools and libraries. However, remember that when you get an answer from USAC, you need to maintain documentation of the response.

Another valuable benefit of E-rate is that it has driven the cost of access down for everyone in the country, making broadband more affordable.

"I firmly believe that if it weren't for E-rate, the computers would go dark in this country except in the most wealthy school districts," says Abshire. "E-rate has spurred innovation and is responsible for this country becoming truly globally competitive."

While the E-rate Modernization Order of 2016 opened new avenues for infrastructure and wireless funding, districts throughout the country are also ensuring they fully leverage E-rate funding. For instance, Miami Dade Public Schools, which is the fourth-largest school district in the country, used E-rate funds to provide high-speed broadband connections to every school and campus and fundamentally shift the way children were able to learn. "Success comes from being able to manage local district resources well, along with your E-rate funding," says Miami Dade Public Schools CTO Deb Kartcher.

> "E-RATE HAS SPURRED INNOVATION AND IS RESPONSIBLE FOR THIS COUNTRY BECOMING TRULY GLOBALLY COMPETITIVE."
>
> — Sheryl Abshire, Chief Technology Officer, Calcasieu Parish Public Schools, Louisiana

In Louisiana's Calcasieu Parish Public Schools, CTO Abshire used E-rate funding to build a reliable network that is impacting learning in pre-K through high school classrooms. The district was also able to free up funds, which helped pay students' tuition for dual-credit courses.

HOW DO YOU ENSURE SECURITY & PRIVACY IN A CHANGING REGULATORY LANDSCAPE?

As classrooms and schools adopt digital content and tools to improve student learning, there are new risks to students' privacy and personal data. To help protect students, the Children's Internet Protection Act (CIPA) requires schools to filter content and block student access to any content that is inappropriate for their age range.

The Family Educational Rights and Privacy Act (FERPA) is another federal law that requires teachers to be responsible for student safety and privacy. However, teachers may be unaware of the specifics of this regulation and need training. For example, if they have students log into an application that requires them to share data, teachers may not realize they are responsible for how that data is being used and whether it is appropriate and safe.

Security will always be a challenge, but there are best practices school districts can follow to help ensure better protection and privacy of student data.

> **Even though we have filtering on our Wi-Fi network, students can bypass it if they have cellular access. In the classroom, this means you need to be careful to use Wi-Fi service, not cell service, to ensure you are meeting federal filtering security requirements."**
>
> — Maribeth Luftglass, CIO, Fairfax County Public Schools in Virginia

Use web content Wi-Fi filters. CIPA requires schools to implement a web content Wi-Fi filter to protect students from accessing inappropriate or dangerous sites when they connect to the internet at school. In addition to federal regulations on Wi-Fi filtering to protect students from harmful online material, many states have enacted legislation that also requires public schools to provide personal and identity theft protection.

Fairfax County Public Schools CIO Luftglass warns that districts should be aware that cellular devices can bypass Wi-Fi filtering.

"Even though we have filtering on our Wi-Fi network, students can bypass it if they have cellular access. In the classroom, this means you need to be careful to use Wi-Fi service, not cell service, to ensure you are meeting federal filtering security requirements."

Educate students on the risks of the internet. It's important to educate students about cyberbullying, remaining safe while using messaging services and chatrooms, and using social media sites appropriately to prevent harm. Omaha Public Schools, for example, holds "Common Sense Media Programming" courses for students to teach them how to use devices and how to behave online, among other topics. The district also offers parent learning courses that can be conducted on its "My Wi-Fi Bus" on a range of topics, including internet safety.

Educate teachers and staff on security risks and compliance. Teachers and staff may be equally unaware of best practices to keep students safe and how to comply with federal and state internet safety regulations. Thus, districts should provide educational resources and training to make sure teachers and staff understand CIPA and Children's Online Privacy Protection Act (COPPA) regulations.

"Good security practices require a lot of training and remind teachers and staff to think about what they are recommending to students," says Luftglass.

For instance, COPPA states that "the school's ability to consent on behalf of the parent is limited to the educational context — where an operator collects personal information from students for the use and benefit of the school, and for no other commercial purpose." According to COPPA, school consent cannot substitute for a parent's approval "in connection with online

behavioral advertising or building user profiles for commercial purposes not related to the provision of the online service."

To stay in compliance, teachers should avoid applications that do not protect student security or require students to accept authorization of use of the site, such as clicking that they are under 13 years old.

Teachers and staff should also be made aware of and reminded that information about student discipline or complaints about students are subject to the Freedom of Information Act (FOIA). As part of FOIA, emails are student records and parents have a right to see any email written about their children.

Ramp up cybersecurity efforts. Cybersecurity threats continue to increase in number and sophistication. According to a 2018 CDE survey of 177 K-20 education decision-makers, 65 percent of schools have updated their security practices due to an uptick in attacks. To further strengthen defenses, districts should conduct an audit to identify risks and weaknesses, as well as craft a comprehensive cybersecurity strategy that addresses how they will deal with these risks.

Additionally, districts can work with their local internet provider to build protection against increasingly popular distributed denial-of-service (DDoS) attacks through comprehensive DDoS protection. The right provider will offer proactive monitoring and automatic detection, and stay current on the latest attack vectors to mitigate threats.

Identify key community areas that provide students internet access and ensure they are trained on appropriate security and compliance measures. Having community partners who can offer students internet access outside of school boundaries is important to expand connectivity. However, it's equally important that these sites, whether a public library, a Boys and Girls Club location or a community center, understand the security threats to students and what they need to do to safeguard the children's safety and privacy while still allowing them access to the applications they need to do their school work.

For Fairfax County Public Schools, public libraries are a great partner in providing students with internet access after school hours. To ensure students have secure access, the district trains librarians to help students securely log in and access applications. Librarians are also made aware of the kinds of tools and applications students will need access to, such as the district's learning management system (LMS) and online textbooks, so students aren't inappropriately blocked from critical sites.

Work with vendors to preserve student safety and privacy. Another security best practice is to require vendors to have a clause in all contracts, including free applications, that they will protect student or staff data that may be housed in their cloud. Schools and vendors should, as a best practice, only collect information that aligns to the type of data necessary to help students and run the programs and services they provide. Luftglass says that FERPA regulations require that vendors act as agents to school districts when supporting software applications.

ADDITIONAL DATA PRIVACY RESOURCES

https://cosn.org/
The Consortium for School Networking (CoSN) offers sample contract language when developing contracts for internet access.

https://ferpasherpa.org/
FERPA/SHERPA provides a one-stop shop for education privacy-related information for schools.

HOW DO YOU PARTNER WITH THE RIGHT PROVIDER?

Staying ahead of the technology curve is never easy, especially when resources are limited. Fortunately, districts don't have to go it alone. Service providers play an important role in expanding fiber lines and making broadband affordable within communities. Many internet service providers are interested in creating strong partnerships with local school districts.

The right service provider will be eager to create partnerships and will work with your district to understand your goals and help identify appropriate solutions to support current and future needs. Service providers can also be a valuable resource in helping you identify and prepare for the future by regularly meeting with your district to discuss technology trends and how those trends fit into near and long-term technology planning. Such brainstorming sessions allow ideas to surface that can help your district refine plans while also enabling the service provider to design solutions that will best serve your district's specific needs and plan for future expansion.

Many service providers go above and beyond in helping local districts. Cox Communications, for example, understands that for students and parents, having a computer and internet service at home is no longer a luxury, but essential.

Through its partnership with EveryoneOn, Cox works in the communities it serves to provide low-cost internet to low-income students and their families through the Cox Connect2Compete program. To date, more than 400,000 people have benefited from Connect2Compete with Cox's discounted internet service for families with at least one K-12 student living in public housing or qualifying for a free or reduced school lunch. Additionally, Cox has built technology centers in more than 100 Boys and Girls Clubs across the country.

"Today's digital classrooms are tomorrow's connected businesses. The investments we are making in closing the digital divide help ensure our students are prepared for their careers and lifelong success after schools," notes Pat Esser, president of Cox Communications.[11]

ACCESS FOR ALL

Tremendous progress has been made to close the connectivity gap, but 2.3 million students still lack access to broadband in their classrooms and 1,356 schools still need fiber.[12] In addition, access outside of the classroom remains a challenge for many low-income and rural students. Each district has its own unique challenges to tackle that will require creativity and determination. However, if districts and states make closing the gap and expanding equity a priority, the goal of access for all is within reach.

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