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Bridging the Digital Divide: The Necessity for Statewide Broadband

Part of a series exploring issues from The Community Foundation's *Aspire Arkansas* report.

August 2020

ENGAGE

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Broadband Access is Essential for Arkansas Communities



To state the obvious: Arkansas must do something to remedy the lack of broadband access for many communities in our state. We cannot afford to be 50th in the nation in the availability of broadband. The COVID-19 pandemic has highlighted the digital divide between families with and without access to Internet.

Students need access to the Internet when schools close due to the pandemic. More than 40% of Arkansas students live in rural communities that have spotty access to broadband.

Broadband is essential for small businesses and for individuals who need to work from home. As e-commerce continues to take a bigger and bigger chunk of the economy, Arkansas businesses must connect to grow. Continuing economic development is contingent, in large part, on broadband access.

Telemedicine for physical and behavioral conditions is becoming a necessity for many. As healthcare costs rise, telemedicine is a powerful way to control costs and efficiently deliver necessary medical care. Without broadband, individuals cannot access this important tool.

And last but not least: for the first time, the 2020 U.S. Census is being conducted mostly online. The census helps Arkansas communities get federal dollars for things like roads, healthcare, education and programs that fight hunger and crime. Ability to complete the census easily and quickly through the Internet is another reason we need more broadband access.

Yes, Arkansas is desperate for better broadband access. In this issue of ENGAGE, we explore ways that Arkansas communities are coping with lack of broadband and ways Arkansans are working together to improve broadband access.

Best regards,

Heather Larkin
President and CEO

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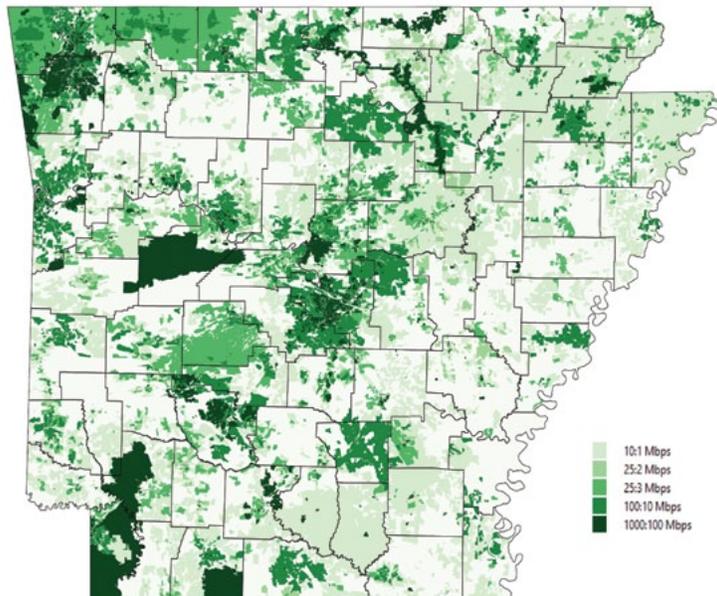
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Broadband Availability in Arkansas



This map from the Arkansas Department of Commerce shows speeds of broadband available statewide. Only limited territory in Arkansas has speeds of 25:3 or above. 25 megabits per second (mbps) with upload speeds of 3 mbps is the minimum speed that the Federal Communication Commission defines as advanced broadband.



Lack of Broadband Access: A Digital Divide for Arkansas Students

By Kimberly Dishongh



Many students connected with their teachers via the internet right from their homes this spring when schools closed to slow the spread of COVID-19. Others, who live in areas where broadband connections are inaccessible, depended on hotpots provided in buses or in school, restaurant, church or library parking lots.

The story of the digital divide in Arkansas can be told in a tale of two districts.

At Lakeside School District in Garland County, 99% of students enrolled have internet access in their homes. At Lakeside School District in Chicot County, that percentage is just 20%.

When the COVID-19 outbreak began last spring, many teachers and students in the Garland County district were already acclimated to online learning, and education became seamlessly virtual. Superintendent Shawn Cook had overseen the implementation of a “flex” program in the district three years earlier.

“It gives our parents in grades kindergarten through seventh grade an option of taking their classes at home, on-site or both,” Cook said, explaining that this option was popular with families who traveled often.

Teachers were versed in the intricacies of education via Google Classroom, Zoom and Google Hangouts, and lessons were aligned so that students learning virtually were taught the same things, at the same time, as students in brick and mortar buildings.

A survey showed 91% of the district’s students, both flex and traditional, had access to the Internet in March, said technology director Mathew Thornton, and the district negotiated with Resort Cable to provide Internet to students who didn’t.

“Eventually we got to where we tracked kids up to 99% who were able to engage with us,” said Thornton.

In contrast, students in the Lakeside School District in Chicot County were handed five days’ worth of written Alternative Method of Instruction packets before schools closed in mid-March.

“With no Internet access for our students, or at least for the bulk of them, we set up drop-offs and pickups and we regularly scheduled events for them to come to a sanitized location, pick up packets, take them back to their home so they can complete them and then drop them back off for us so we could sanitize them again and grade them and continue communicating to our students the things that we needed to do to try to fill the gap that we knew was going to be there,” said Ross Sims, who is both the information technology specialist for the district and the principal of one of its elementary schools.

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Students who did have Internet access could still access the online resources the district offers throughout the year for enrichment and remediation, though Sims said the number who logged in for those was low.

Only a tiny fraction of the Lakeside district in Southeast Arkansas, which includes Montrose, Lake Village and Eudora, has access to internet service at the 25 megabit per second speed that the Federal Communications Commission has set as the standard for broadband.

“In Chicot County, the only places that actually have broadband service are the schools, the hospital and the judicial areas, and that’s because we had an initiative a few years back that brought broadband services to the area. So while we can provide Internet to all of our students while they’re on campus, we can’t guarantee Internet service when they’re not,” said Sims, who juggled the dilemma of how to educate students who weren’t connected with how to keep them fed and safe. Some families lost their homes or had to leave the rural area for a more metropolitan one to find work after they lost their jobs as the result of the pandemic.

The district looked into providing LTE compatible Samsung tablets with two years of Internet service for students but the cost would be over \$1.5 million and would have limited benefit because of data throttling, Sims said. The district is offering a virtual learning option for the fall but requires students to have Internet access – beyond a cell phone hot spot – to pursue that option. Plans with unlimited data often have hot spot restrictions, he

explained, and when students using cell phone plans run out of data mid-month, they can’t complete further assignments.

Still, cell phone hot spots were used in many households across the state.

Brandon Pacheco, 15, of Sheridan, used his cell phone to do most of his schoolwork in the spring. His family has Internet service but it was too slow to meet the needs of Brandon and his three siblings.

Brandon, whose family is Spanish-speaking, plans to do virtual school this fall. “We just think it’s safer,” he said.

Lupe Peña de Martínez, principal at East End Middle School in Sheridan, said that district used the Thrillshare platform to announce where and when buses equipped as hot spots would be available throughout district, and designated someone to answer technology questions.

“But if you want to talk divide, what if you don’t even speak English? I was really impressed with a lot of my Spanish-speaking families,” said de Martinez. “Some of them called me because I do speak Spanish, and Lauren created a video in Spanish just showing people how to shift the website from English to any other language. When you talk about a technology divide, it’s not just economic. It’s not just access. It’s also language.”

Lauren Goins, director of communications for Sheridan School District, said about 14% of the students in that district reported not having Internet service at home.



The Sheridan School District provided hotspots throughout the community for students who lacked the home internet access they needed to do virtual learning while school buildings were closed in the spring.



"We had an average of 11 people per day connect to our Wi-Fi buses. We think more people connected to our Wi-Fi school parking lots. Some churches in our community also partnered with us to allow students to access their Wi-Fi from their parking lots," Goins said.

Susan Blockburger, principal of Glen Rose High School, just a half hour drive from the Lakeside district in Garland County, said teachers in her district have adapted to meet the needs of their students.

"... I'm seeing educators just going so far above and beyond right now. I'm really proud to be in this profession and it just reminds me that this is a calling more than just a job. People are doing whatever it takes to help their kids."

— Superintendent Shawn Cook
Lakeside School District

"As teachers learn more about how to use Google Classroom and Google Drive and Google Forms and all that better, they have learned that there are certain things that work easier on a phone than others do," she said. "We've learned to try to keep in mind that the majority of our students are doing their work on a phone, or through a hotspot on a phone. We're very limited on the use of video because it eats up too much data and the signal is so weak in our community area that it's constantly buffering so they can't really get the video advantage."

For Lauren Lambert of Glen Rose, even a cell phone wasn't an option.

"Where I live I actually have really shoddy cell phone service, so you can't use your phone to tether for any significant amount of time," said Lambert. "As far as any kind of instructional time, a Zoom or anything like that, that was completely off the table for us."

She tried out a satellite plan years ago, but it was expensive, required a year-long contract and didn't work well.

"Satellite Internet service is available pretty much everywhere," said Arkansas Broadband Manager Nathan Smith, who estimated that 200,000-250,000 households in Arkansas don't have access to broadband service as defined by the FCC. "It's shot from geostationary orbit over the equator, so if you're on the north side of a tall hill you might not be able to get it, but generally you can. It's a slow service, it has low data caps. It's really not considered adequate to meet most needs but it's better than nothing and some people rely on that."

Lambert continued reporting to her job at a local insurance agency while school was closed and it was from there that she downloaded instructional videos, printed out worksheets and submitting assignments for her 13-year-old son

She knew that she could get a Wi-Fi signal in the school's parking lot but is glad she didn't have to use that option. "When you're a single mom with a 4-year-old and a 13-year-old ... could you imagine trying to do any work like that?" she said.

Elizabeth Warford, also of Glen Rose, sometimes used her phone as a hot spot at home and sometimes sat in her parents' backyard to use their Wi-Fi while helping her three children with their schoolwork and meeting her own requirements as a teacher in another district.

Arkansas's 15-member CARES Act Steering Committee approved in June a proposal to use \$21.6 million of the state's \$1.25 billion in federal coronavirus relief funds for two broadband grant programs, the governor's Arkansas Rural Connect program and the Rural I.D. program. Even with a sizable investment it's unlikely that broadband access will increase drastically before school starts in the fall. Educators everywhere are exploring ways to meet students' needs with varying access to broadband.

In Chicot County, Lakeside officials are planning to put videos of lessons on flash drives that can be distributed if schools have to close again. That would allow students to learn from their own teachers without the burden of trekking to a hot spot.

Cook, while proud of the accomplishments of his own well-connected district, respects the flexibility and creativity exhibited by his colleagues around the state.

"What they need is for somebody way on up to say, 'Hey, we're going to make this happen. It's going to be just like electricity,'" said Cook of what seems like a basic need. "I think everybody's trying to do the best I can. I'm seeing educators just going so far above and beyond right now. I'm really proud to be in this profession and it just reminds me that this is a calling more than just a job. People are doing whatever it takes to help their kids."



Some students were able to connect virtually with their teachers from their homes this spring when COVID-19 closed school buildings. These students, who did not have Internet access at home, took to the school parking lot to get a WiFi connection so they could access assignments and do video calls with their classes.

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Creativity, Technology and Teamwork Help Arkansas PBS Fill the Gaps with AMI Broadcasts

When Arkansas schools closed in mid-March due to COVID-19 concerns, families and educators scrambled to ensure that learning didn't stop. With 42% of students in rural areas where broadband was scarce and others in homes without access to computers, innovative solutions were necessary.

One of the most wide-ranging innovations was the extraordinary work of Arkansas PBS, formerly AETN, the state's only public television network, which partnered with the Arkansas Department of Education's Division of Elementary and Secondary Education to keep students learning from home with Arkansas AMI (Alternative Methods of Instruction).

Modeling after a collaboration of several California public media stations, Arkansas PBS quickly put together a plan to broadcast age-appropriate educational programming from 8 a.m. to 1 p.m. every weekday. Arkansas PBS marshalled its resources to broadcast curriculum-based programming for pre-K through 8th grade students and to make the broadcasts available on all the platforms where students learn.

"I became aware of what was being done in California, and we approached the Department of Education to discuss how we might take the California concept and build on it," said Courtney Pledger, Arkansas PBS CEO and Executive Director. "They were immediately enthusiastic and worked with our team to make the effort more engaging to our students by bringing in Arkansas Teachers of the Year as onscreen hosts."

For 15 years, the Arkansas PBS Education Department has produced professional development courses for Arkansas educators through a grant from the Department of Education. A time when teachers couldn't teach in the classroom was a



good time for them to catch up on continuing education. The number of teachers using ArkansasIDEAS professional development courses went from 20,000 to 40,000 in one week.

"We knew we could help during school closings due to COVID-19 through what became Arkansas AMI. The first step was to find PBS programming that would work with our state's standards. The Arkansas PBS Education department has 25 team members, including many that are licensed Arkansas teachers. They watched PBS programming for hours and hours to determine what could be used that aligned to learning standards, and what was likely to be



Arkansas  

Arkansas AMI



rejected prior to passing it for approval from the Arkansas Department of Education’s educators,” said Sajni Kumpuris, Arkansas PBS Assistant Director of Education.

In choosing programming, the Arkansas PBS team was careful to honor the needs of students in their homes. They realized that if Arkansas AMI was going to work, it had to be engaging as well as educational. Humor and fun, along with localizing the appeal, were essential to creating something that would be useful to Arkansas families.

After the programming was selected each week, scripts were written for the Arkansas Teachers of the Year program introductions. Teachers had a producer and editor who worked with them on filming the original educator content leading into each program.

“I had the task of figuring out very quickly how to produce the segments remotely,” said Levi Agee, Arkansas PBS Director of Production. “A massive project like 20 hours of original programming and 400 hours of total AMI content meant a lot of people had to work together. Constant communication virtually using Microsoft Teams made everyone available.”

Logistical obstacles included how to film teachers each week who were spread throughout the state during the pandemic. The solution was to have producers help each teacher record introductions on their own webcams. Then the segments were downloaded to the cloud and edited to create the programming introductions.

“We were the glue that held the programming together,” said Agee. “It was one of the most fulfilling experiences of my life and one of the hardest. Stressful, but meaningful, it was a testament to teamwork, focus and mission.”

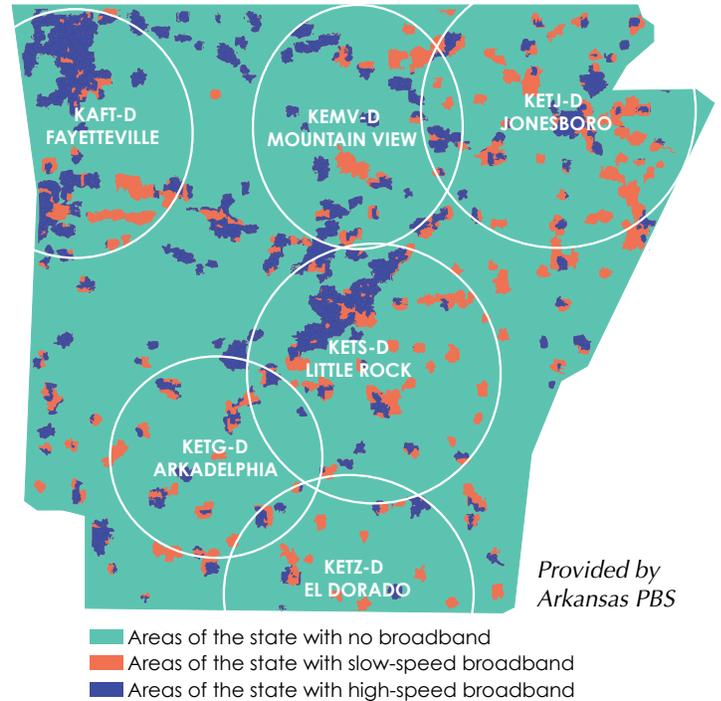
Planning began March 17, and by March 30 the first AMI programming was on the air.

“It didn’t stop for eight weeks. We worked through weekends to write scripts to begin recording on Monday with the teacher hosts. One of the sweetest things that happened was the bond that formed between the teachers and their producers,” said Kumpuris.

Every week through May 22, original programming segments allowed students to see teachers every day orienting the themes, saying hello and making it more like a classroom environment. Partners like UAMS conducted three-minute movement classes, and the Arkansas Arts Center performed puppet shows.

“It emboldened us to see how valuable Arkansas PBS is to our state. There are a million questions about whether we will produce AMI programming again, but we’re willing to partner to do what it takes to give kids education content they need,” said Agee.

During the eight-week broadcast period, two additional cable providers in the Texarkana and West Memphis areas were added to strengthen the statewide access of Arkansas PBS TV programs. In addition to viewing broadcasts of the segments on the Arkansas PBS TV channels, families could use the cable channels, satellite channels, local livestreaming, Engage Arkansas PBS app, archived online programming, PBS app and YouTube TV. Social media



posts, the Schoolhouse Daily Learning Resources email and Arkansas IDEAS AMI email broadened engagement.

Over a year ago, work began to help Arkansas PBS become increasingly savvy in digital production and distribution through participation in a Corporation for Public Broadcasting initiative. Arkansas PBS was one of only 19 public media stations nationwide to receive grant for Digital Culture Accelerator (DCA).

“DCA expedited our ability to connect, and along came AMI to use our new capabilities. Other things will come in the future,” said Pledger. “The moment was galvanizing for us as everybody worked together to fulfill our public media mission.”

“We were the glue that held the programming together. It was one of the most fulfilling experiences of my life and one of the hardest. Stressful, but meaningful, it was a testament to teamwork, focus and mission.”

— Levi Agee
Arkansas PBS Director of Production

\$25 Million for Broadband – Is it Enough?

The State of Arkansas' Commitment to Broadband for All



In August of 2019, Arkansas Governor Asa Hutchinson announced “Arkansas Rural Connect,” a \$25 million grant program within the Arkansas State Broadband Office. The goal is to provide high-speed broadband to rural communities throughout Arkansas by 2022.

The Arkansas Rural Connect program will provide grants to qualifying communities of at least 500 people to deploy high-speed broadband to its residents. The high-speed broadband rates must meet the federal baseline of at least 25 megabits per second for download and 3 megabits per second for upload.

Like most large government projects, this effort requires a tremendous amount of infrastructure and time.

“One of the first infrastructure questions potential economic development prospects ask is regarding the speed of information across the state. As we build out the system with help from funding through the Arkansas Rural Connect program, individuals, schools and companies will benefit and create a new environment for learning and commerce,” said Arkansas Commerce Secretary Mike Preston.

According to the Arkansas State Broadband Plan issued by the Governor’s office in May, “Economic development depends on rich networks of specialization and trade, and these networks depend on transport and communications networks, of which broadband has become a crucial part. Areas lacking broadband service are at a disadvantage in achieving modern knowledge and productivity, and often experience job losses, economic deterioration and out-migration. The geographical barriers creating a digital divide in Arkansas can be mitigated if universal or near universal access to high-speed internet becomes a medium-term policy goal.”

At the time of the May report, there were 136 internet providers in Arkansas. However:

- 641,000 people in Arkansas lack access to a wired internet connection capable of 25 mbps download speeds;
- 721,000 people in Arkansas have access to only one wired internet provider, with no options to switch; and
- Another 251,000 people in Arkansas don’t have any wired Internet providers available where they live.

Arkansas is not alone in its pursuit of creating more



broadband access. Every state in the U.S. has some form of task force, commission or project to improve broadband, including for rural areas.

Minnesota is one state leading the charge for higher rural broadband speeds. By 2026, the state is aiming for all homes and businesses there to have access to at least one broadband provider that offers download speeds of at least 100 mbps — four times faster than Arkansas’ goal speed and with four extra years to achieve it. North Carolina also has a plan for improving broadband availability and usage there. Wisconsin wants everyone there to have access to internet service that meets the federal speed standard by 2025.

However, funding levels differ greatly state by state. For example, the Maine Department of Economic and Community Development estimates the price tag for deploying broadband across the state would be at least \$1.6 billion. And 93% of Maine citizens already have broadband access.

Some federal funding has also been made available. Last June, the Federal Communications Commission authorized \$22.6 million in funding over the next decade to expand broadband to 6,582 unserved rural Arkansas homes and businesses in six counties. Federal grants and loans from other federal agencies like the U.S. Department of Agriculture and the U.S. Department of Commerce are available to fund broadband deployment.

Still, Arkansas is the least connected of all the states according to FCC data: Begging the question, is \$25 million in two years enough for Arkansas to rise to the federal baseline?

Now Arkansas, like the rest of the nation, finds itself in the throes of a global pandemic forcing the realities of the

disparity of the “haves” and “have-nots” of broadband access.

The pandemic has shown us how much our communities rely on and need broadband. Prior to the pandemic, rural areas had gradually been left behind because of the absence of high-speed internet. Now that the pandemic is in full force and seemingly changing the nature of its effect by the minute. The need for quick information to communities is not a luxury but an absolute necessity for the health and wellbeing of our state.

Schools are actively seeking alternative solutions for education but are crippled by slow Internet speeds and an inability to communicate effectively without reliable internet connection. Creative solutions have been developed but aren’t as sustainable. Telehealth has proved more important than ever since hospitals and medical facilities are weighed down by coronavirus testing and treatment. For those who must be quarantined or have small children without access to childcare because of the pandemic, working from home is a new necessity.

Gov. Hutchinson and the General Assembly have made broadband a top priority. Round 1 started with request for applications April 27 and closes Aug. 15. Grants will be awarded no later than Nov. 1.

According to the Arkansas State Broadband Office website, recently added to the process is CARES Act funding for projects. It states that, like so many other things hinging on how the pandemic plays out, “Will be scored and awarded until funds are expired.”

For more information, visit <https://broadband.arkansas.gov/>



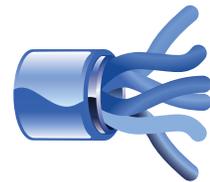
65.2%

of Arkansans have access to broadband 100mbps or faster



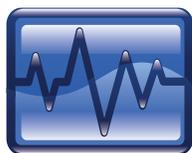
86.8%

of Arkansans have access to DSL service



11.7%

of Arkansans have access to fiber-optic service



19.1%

of Arkansans have access to 1 gigabit broadband



71.9%

of Arkansans have access to cable service



92.9%

of Arkansans have access to wireline service

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“Why is extending broadband to all the communities in Arkansas important to the success of education and economic development?”



Natisha Hampton
Lexia Learning
Customer Success
Manager

Where does one start? All Arkansans deserve to have the best possible education resources, curriculum and teachers. But the current education landscape is currently far from fair. Broadband is one way to provide this equity, but broadband alone isn't a comprehensive solution. What to do with broadband is more complex.

As an implementation manager for a literacy product, I work with schools across the socioeconomic spectrum to get education programs operationalized. Broadband is needed and necessary, but alongside broadband must come computer literacy education for the myriad of family demographics across the state, including non-English speakers. Many educators must also be trained.

This isn't just a rural problem, there are many schools in urban areas that struggle with the ability to implement programming. For students, some can use an iPad or Chromebook from their school, but this isn't true for all districts. And even if students all had devices, it assumes they have sufficient broadband in their homes. Many students miss opportunities and the foundational learning we know is so critical at an early age early age because they can't access the information they need.

While the coronavirus has amplified the broadband gap, and communities are trying to adapt, we need sustainable solutions to address the problems that were already widespread before the pandemic.



John Chamberlin
Owner
Chamberlin Research

Getting broadband everywhere is a never-ending process because the demand for speed and capacity will continue to rise. The first time I remember being excited about an increase in data rate for remote computing, the increase was tripling from 100 to 300 bits per second in 1976. This spring my home broadband was increased from 6 million to 18 million bits per second.

Broadband is like a good paved highway. To make roads useful, you need vehicles and training to drive them. Same with broadband, we need people to be trained and affordable access to the myriad of devices available.

To prioritize municipal broadband for those in need, the State legislature would need to lift the prohibition in Arkansas Code 23-27-409(b) to expressly allow a government entity to provide broadband via fiber to Arkansans. Right now, a municipality can work with a provider to secure funding in unserved areas, which is good for bringing broadband providers to rural Arkansas. But when it comes to digital equity where broadband providers already exist, Arkansas law is prohibitive for communities to be able to use their own resources to provide for broadband to underserved populations.

Having broadband for all will require a plan to keep upgrading or the digital speed divide will deepen.

ARKANSAS VIEWPOINTS



Statistics Tell the Internet Access Story

A 2020 Pew Research Study found that a total of 87% of Americans describe the Internet as “essential” or “important” during the COVID-19 pandemic. But many Arkansans don’t have the option for advanced Internet service in their homes.

More than 21 million people in America lack advanced broadband Internet access according to the Broadband Deployment Report from the U.S. Federal Communications Commission. The FCC defines advanced broadband as download speeds of at least 25 megabits per second with upload speeds of 3 mbps, a baseline that experts call 25:3.

BroadbandNow, a consumer advocacy organization that maps advanced Internet access, ranked Arkansas 41st in access to broadband in April 2020, based on access to low-cost plans, wired networks and friendliness to competition.

The Arkansas Department of Commerce (DOC) Report from the Arkansas State Broadband Manager published in December 2019 cited Arkansas as the 50th most connected state on **BroadbandNow.com** because it has the smallest share (77% compared the national statistic of 94%) of the population with access to wired broadband at a download

speed of at least 25:3, despite being in the middle of the rankings with approximately 133 Internet service providers.

Even with many Internet service providers, there is little consumer choice for a significant portion of Arkansas families. The DOC report states that demand for wireline home Internet access may be elevated in small towns and rural areas because cell phone service and mobile data — an important substitute for home Internet services in urban areas — is less available and reliable there and fewer public spaces offer free Wi-Fi.

The U.S. Census Bureau’s American Community Survey data shows that the gap in advanced Internet service is in part determined by age and income. Most high-income households have advanced Internet, while fewer low-income households purchase that service.

Throughout the income distribution, the number of households who purchase Internet service is higher among younger households (no members over 60) and higher among households that include children. Large lots and farms in Arkansas are less likely to have advanced Internet at home; instead they rely more on wireless and satellite.



Arkansas ranks 41st in access to broadband based on low-cost plans, wired networks and friendliness to competition.



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Inspiring Solutions

East Initiative Students are Leading, Collaborating, Innovating and Having Fun.

The mission of the EAST Initiative is to provide all their learners with the opportunity to have relevant, individualized, life-changing educational experiences. A longtime partner of Arkansas Community Foundation, EAST has an employee/board-funded scholarship for a student to any college, vocation, trade school or university.

EAST offers 80 different trainings in various industries for 2nd grade and older. Students learn and then take new skills back to their communities to start new projects and help others — it's both fun and functional. Bentonville EAST students created a 3D virtual experience of the (Johnny) Cash family home in Dyess. In Monticello, two elementary students worked with local law enforcement and the health department to create child identification kits.

"You won't find our students in the phone book — some of them are 6th graders!" said Matt Dozier, President and CEO. "Their hearts are huge and they find solutions. Some of our elementary students could lead a revolution. To make this possible, broadband is especially important right now, so students have equal access to the trainings and technology seen in most industries."

EAST's driving philosophy is that collaboration is key. "We've found that pooling brainpower and resources keeps us from stepping on each other's toes. This has been the best

part of working with the Foundation. They help us connect our students with donors and institutions that further our mission," said Dozier.

The EAST Initiative motivates students to seek creative solutions and use technology as a tool. According to Dozier, "The work being done is very cool, but more importantly, useful. We're keeping jobs, expertise and passion in our state."



Elementary EAST student enjoys virtual reality experience designed by high school students in the exhibit hall of a recent EAST conference.

