BROADBAND
A CRITICAL ELEMENT OF EDUCATION IN ALASKA

Key Findings

ALASKA
School Broadband Audit

- **89% of Alaska schools see broadband needs rising in the next five years.**

- Nearly **three out of four rural Alaska schools (73%)** say they would offer more educational opportunities to their students if they had more bandwidth.

- **100% of surveyed rural schools allow students Internet access to support classwork during the school day**, despite the bandwidth and access challenges.

- In rural communities, **two out of three schools (66%)** rely on broadband to provide their students with educational opportunities through distance learning.

- 91% of schools surveyed reported that **students use a laptop or tablet** provided by the school.

- 95% of schools say their students use broadband to access educational content, 91% use it to conduct in-class research, and 89% use it for online testing.

- To further provide educational opportunities to students, **51% of schools said they need higher broadband speeds**, 40% need greater funding for monthly broadband fees, and 41% need more funding to purchase or improve broadband equipment. In rural areas, the need for higher speeds and funding is even greater.

"[With sufficient bandwidth] we could offer students access to a databank of courses from any university in the world for content and instruction."

Educating in Alaska

ALASKA
School Broadband Audit

As a growing amount of educational content becomes available online, the national importance of bringing broadband technology to schools in every community is critical to economic development and sustainability. For Alaska, where 72% of schools are located in rural and remote communities – many of which are located off the road system – the ability to connect students to the rest of the world is even more important, and more challenging. In remote, isolated areas of the state, schools need faster broadband access to serve the educational needs of their students and to connect them to top-level content and opportunities; however, broadband availability and speeds are often lacking in those communities. Notwithstanding those limitations, Alaska's rural schools are utilizing the education technology to which they do have access in ways greater than their non-rural peers. Rural teachers' commitment to use broadband technologies for learning, despite poor Internet access, showcases the vital importance of smart policies and funding to ensure improved rural connectivity in the future.[1]

> *"Teachers are frustrated by the number of new tools for education that cannot be used in remote communities."*

To better assess this challenge, in 2014, under the NTIA State Broadband Initiative, Connect Alaska partnered with the Alaska Department of Commerce, Community, and Economic Development to undertake the Alaska School Broadband Audit, a first-of-its-kind project designed to better understand how Alaska school districts access and use broadband. The audit consisted of on-site engineering assessments, as well as an assessment of school technology needs, conducted through a series of online and telephone surveys. For this needs assessment, Connect Alaska and its partners conducted telephone and online surveys of 55 Alaska schools to examine current broadband infrastructure in educational institutions, how students are accessing the Internet for school work, and what educational opportunities might be available to students through more robust access to online resources. Of the schools surveyed as part of this needs assessment, 41 are located in rural areas across the state.

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[1] Based on definitions for rural schools established by the Universal Service Administrative Company (USAC); http://www.usac.org/default.aspx.

School Districts

Nearly 663,300 square miles in size, the state of Alaska includes 54 public school districts with a diverse population of approximately 128,000 students. More than 50,000 of those students (or 39%) attend rural schools.[2] The state's student population is 23% Native Alaskan, and 46% of students are eligible for the national free- or reduced-lunch program.[3]

With Alaska's students dispersed over such a large and diverse expanse, broadband technology and online resources can be powerful tools for Alaskan educators to bring new information and educational experiences to students in ways that can connect them with the rest of the world and help them remain competitive in today's technology-driven world.

Alaskan School Districts

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[2] Based on USAC definitions of rural schools and enrollment data from the State of Alaska Department of Education and Early Development for the 2013-2014 school year.
[3] Source: Alaska Department of Education and Early Development (EED) for the 2013-2014 school year http://education.alaska.gov/TLS/SPED/.

Broadband Connects Communities

Broadband has the power to connect communities like never before, and in rural Alaska, schools are often the very center of these communities. Schools are using broadband technology across the state to ensure their students and communities are connected with each other and with the rest of the country.
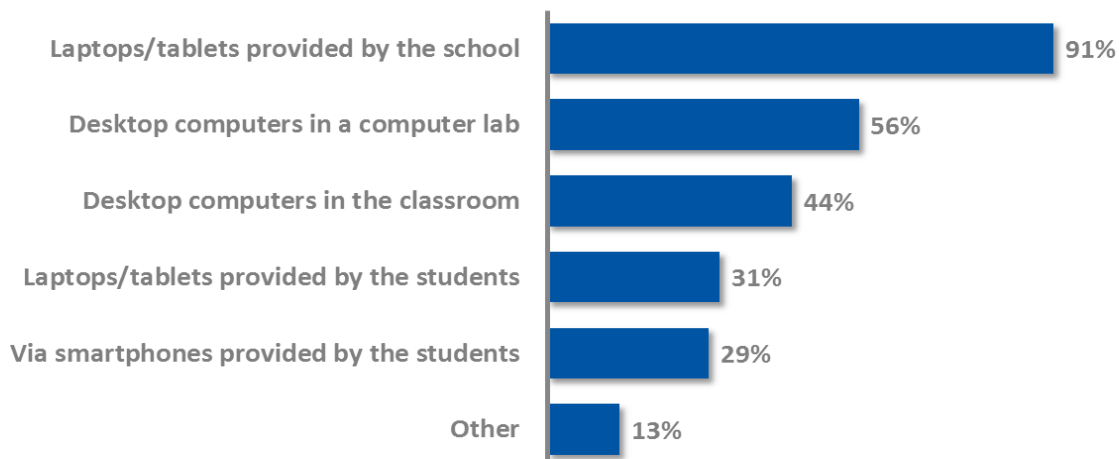
Among rural districts, 100% of schools surveyed by Connect Alaska reported that students were allowed to access the Internet during the school day for classwork. This number surpasses the rate of non-rural schools that are allowed online access (96%).

For many households without home broadband, school broadband may be the only Internet access available to students. In 2014, Connected Nation, Connect Alaska's national affiliate, conducted a Residential Technology Assessment across eight states and found that students access the Internet at home to do their schoolwork in 75% of households with school-age children.[4] For students in the remaining 25% of these households with school-age children, school Internet access is not only instrumental to complement educational resources in the classroom but also helps to close the digital divide among Alaska school children.

"Many services are in competition with each other and not allowing full utilization."

To bring this access to students, 91% of surveyed schools report that students use a laptop or tablet provided by the school (often on carts used in the classes or computer labs) to access the Internet (Figure 1).

Figure 1. How Alaska Schools Allow Students to Access the Internet During School Hours
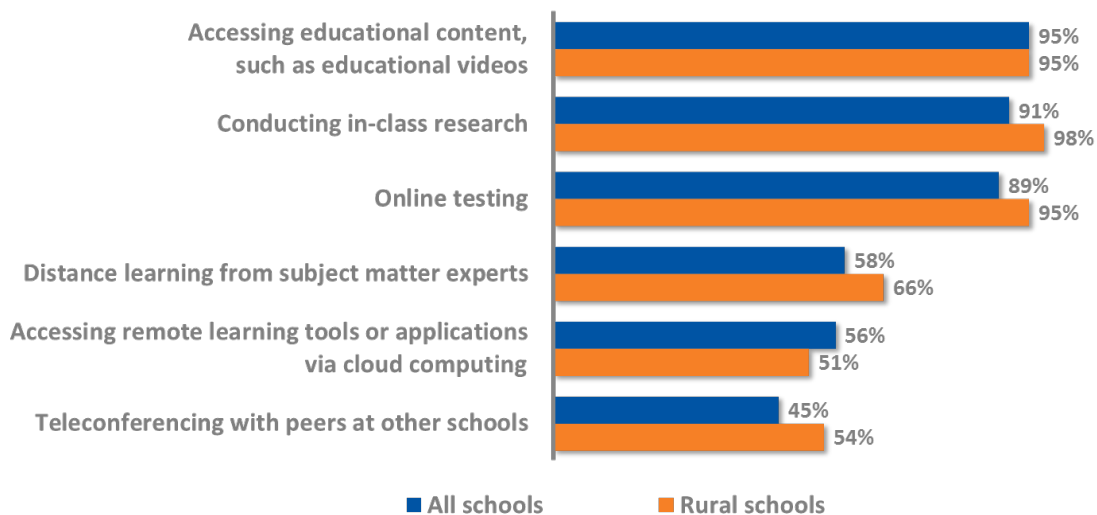
Laptops/tablets provided by the school	91%
Desktop computers in a computer lab	56%
Desktop computers in the classroom	44%
Laptops/tablets provided by the students	31%
Via smartphones provided by the students	29%
Other	13%

[4] Source: http://www.connectednation.org/sites/default/files/headoftheclass_final.pdf.

In addition to laptop and tablet usage, more than one-half (56%) report that students use desktops in a computer lab and 44% of the schools offer students the option to use desktops in the classrooms. Across rural schools, the percentage using laptops or tablets was slightly higher at nearly 93%.

This technology is used to access educational content and instructional resources. Internet use across rural communities is widespread, despite slower broadband access. Alaska schools, as a whole, report that a large majority of students use the Internet for accessing educational content (95%), conducting in-class research (91%) and online testing (89%). For rural communities, however, the numbers often surpass the statewide averages. Of those surveyed, 95% of schools report using online technology to access educational content, 98% report using it to conduct online research in the classroom, 95% use the Internet for online testing, 66% report that students use Internet access for distance learning, and 54% report using teleconferencing to interact with peers in other schools (Figure 2). By comparison, nationwide only 75% of high school students access class information through an online portal, 52% take tests online, and 22% watch teacher-created educational videos online; among elementary and middle school students, those percentages are lower.[5]

> *"More videoconferencing and cloud-based services would fundamentally change the way teachers teach."*

Figure 2. Alaska Schools That Provide Internet Access to Students for E-Learning Applications

Application	All schools	Rural schools
Accessing educational content, such as educational videos	95%	95%
Conducting in-class research	91%	98%
Online testing	89%	95%
Distance learning from subject matter experts	58%	66%
Accessing remote learning tools or applications via cloud computing	56%	51%
Teleconferencing with peers at other schools	45%	54%

[5] The New Digital Learning Playbook: Understanding the Spectrum of Students' Activities and Aspirations. http://www.tomorrow.org/speakup/pdfs/SU13StudentsReport.pdf.

Closing the Digital Divide

Online resources are already empowering students and educators across Alaska, particularly across rural communities. This comes despite the fact that a significant broadband gap still persists with regard to many schools across the state. As online content requires more and more bandwidth and national broadband policy increases connectivity standards, the baseline for what is considered robust Internet will only continue to rise. On January 29, 2015, the FCC redefined advanced broadband speeds as 25 Mbps download/3 Mbps upload, stating that previous definitions were "dated and inadequate" based on "advances in technology, market offerings by broadband providers and consumer demand." [6]

> "Teachers are now hamstrung without better connections … ALL courseware is now including online content but schools in remote Alaska cannot use it."

Schools surveyed by Connect Alaska report that a lack of adequate broadband is holding them back. Seventy-three percent (73%) of schools surveyed in rural areas report that they would offer additional educational opportunities or activities to students if they had access to faster or better Internet service (compared to 60% statewide), such as live-streaming, online courses, and general interactive use (see Figure 3).

Figure 3. What School Leaders Would Do with Better Broadband Service
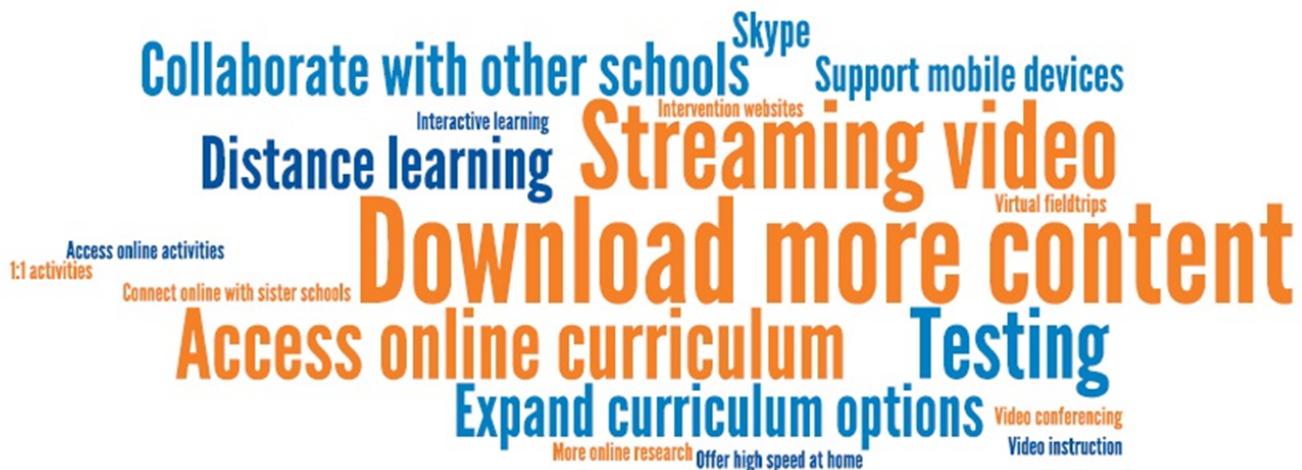
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Additionally, many schools surveyed said faster broadband was needed to access the educational opportunities already available online since many of the schools experience speeds too slow to run the existing programs effectively.

To provide the necessary Internet connectivity, those schools surveyed agreed that funding is a major source of concern, with rural schools stating that it's the greatest need. Fifty-four percent (54%) of rural schools surveyed stated a need for funding to buy (or improve) equipment, and 49% need funding for the monthly cost of faster broadband (Figure 4).

Figure 4. Percent of Alaska Schools That Need the Following to Offer Additional Educational Opportunities

■ All schools   ■ Rural schools

Category	All schools	Rural schools
Faster available broadband for the school or community	51%	63%
Funding to buy (or improve) equipment	44%	54%
Funding for the monthly cost of faster broadband	40%	49%
More training for educators	24%	27%
More staff with the necessary IT training	13%	12%
Other	9%	12%
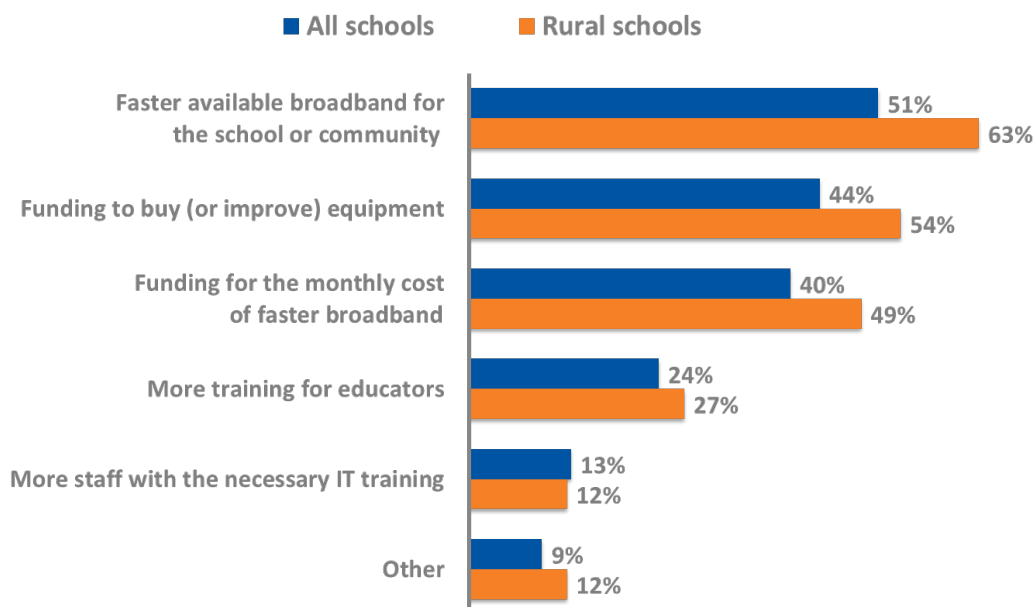
With 89% of schools seeing broadband needs rising in the next five years, the future importance of broadband is undeniable, and funding this technology is essential in years to come.

Conclusions

With education technology needs among schools on the rise, greater funding for broadband connectivity must be made available for Alaska's 128,000 K-12 public school students to learn and prosper in the coming years. Rural communities often have the greatest need for connectivity funding and although Alaska's rural schools are already using technology, increased speeds and bandwidth are absolutely necessary to bring a richer depth of educational content across the expansive and diverse state.

By providing the needed funding to expand broadband speeds and access, Alaska can ensure its students will have the opportunity to fully capitalize on distance learning, online assessments, and the interactive skills necessary to succeed in today's marketplace and beyond.

Quotes included in this paper were provided by various surveyed school representatives across Alaska.

"Having unlimited access to resources around the world without technical barriers will allow for broader and deeper student exposure, along with personalized instruction that will be appropriate for the student's learning style and needs."

About the Alaska School Broadband Audit: Connect Alaska, in partnership with the Alaska Department of Commerce, Community, and Economic Development, is conducting the first ever Alaska School Broadband Audit. The goal is to collect detailed information about Alaska school districts' broadband access and usage.

CONNECT
ALASKA.