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Equalized Education

Bridging the digital divide in rural schools

by JASMINE EVANS

Historically, rural schools, which are defined by their level of distance from urban centers, have been unable to overcome the geographic gap between their students and the resources cities and suburbs have to offer. Today, “rural schools are very innovative out of necessity,” says John White, deputy assistant secretary for Rural Outreach with the Department of Education. Many schools throughout the country are incorporating advanced technology in classrooms to overcome the barrier of distance and bring outside resources inside and directly to their students.

Above all: Internet access

White emphasizes that today the Internet is to our society what electricity was in the last century. Every school needs broadband Internet access daily, and yet fewer than 20 percent of educators say the Internet connection at their school meets their needs. That leaves millions

of students without access to high-speed Internet that can meet the high standards of teaching and learning.

In response, the Department of Education created ConnectEd, an initiative to provide 99 percent of children with access to high-speed Internet within five years. President Obama has called on businesses, states, school districts and communities to pursue this goal, as well as to help teachers keep pace with the changing technological and professional demands.

The Northeast Tennessee College and Career Ready Consortium includes 15 school districts in the Appalachian Mountains that have already gotten started connecting all their students. These schools used the federal “Investing in Innovation” grant to obtain high-speed broadband in order to utilize online learning, two-way videos for instruction and additional professional development for teachers and counselors. The goal of this initiative is to use the Internet as a tool to ensure students

are prepared to complete in STEM fields.

The ConnectEd initiative is incredibly important for rural schools that are isolated from the assets of urban areas. “As you get farther away from an urban area or urban cluster, distance becomes a barrier and access to resources becomes more challenging,” says White.

Jacob Veldhouse, the director of Technology for Wheaton Area Schools in Minnesota, speaks to the lack of resources in his district. “Our kids are leaving the rural area and have to catch up with things in college that students from urban districts already know,” he says. His district recently made significant changes, including increased Internet access, to give students the same information as students over 200 miles away in Minneapolis.

Shiny but effective tools for learning

Internet access is top priority for many rural schools, but is only effective when

partnered with the right tools. Wheaton Area Schools has added several devices as standard elements of their classrooms.

In 2010, they pushed to have interactive projectors, specifically Epson BrightLinks in every classroom. "We really saw teachers at the elementary school level using the interactivity of the kids seeing something on the screen and essentially (touching) it and (moving) it. It really sparked that first step for us," says Veldhouse.

Now, Wheaton teachers use the projectors to get students physically interacting with the material. At the high school, a math teacher records his classes, including what he writes on the screen, and puts it on YouTube. Another teacher does virtual frog dissections using the projector.

One of the newest abilities of the interactive projectors is the ability to mirror iPads. Last year, Wheaton Area Schools bought 150 iPads, which "equates to about one to every two students," according to Veldhouse.

Technology is an equalizer in education. Schools, with a little innovative thinking, can use gadgets and a fast Internet connection to bring new opportunities, experiences and supports to rural students.

Teachers now use educational apps like BrainPOP and Near Pod in class. This approach engages multiple senses and can increase students' information retention. Teachers also don't have to take students to a computer lab. "You're bringing the technology to the students instead of the students to the technology," says Veldhouse.

Wheaton teachers also use iTV to take students on virtual field trips so that

students can still see exhibits even when a physical trip isn't practical. In that way, "we're bringing the outside into our classrooms," Veldhouse adds.

Similarly, Project READERS, an initiative by the University of Nebraska-Lincoln, brings reading specialists to students in rural schools. Trained reading coaches use webcams and listening devices to instruct teachers how to teach their students to read during story time and other crucial classroom moments. The high-speed Internet connection allows this kind of support to improve teaching and learning in even remote areas.

High-speed teachers

A 2006 study in *The Rural Educator*, cited concerns by administrators in rural districts that the technology in their schools didn't connect directly to the curriculum. White asserts that all the methods of technology are just tools — better versions of chalkboards. It's up to the teachers to learn how to use those tools effectively.

Wheaton Area Schools' teachers have risen to the challenge. Four times each month, the teachers meet and an expert presents on a topic related to the technology they use each day. The teachers ask questions and collaborate with each other to learn more about their classroom gadgets. Veldhouse emphasizes that, "it's completely in house." If someone attends a professional development conference and learns about iPad management, they may present new best practices at one of the meetings.

Troubleshooting in rural schools

As with any mode of technology, glitches happen. A student may press the wrong button or a teacher will drop a book on the keyboard and suddenly everything is on the fritz. In urban areas, school districts may have IT staff close by or the provider of the

technology, like Apple or Comcast, may be able to send someone to assess the situation.

Rural schools, often times, don't have this option and must improvise. Veldhouse is a self-proclaimed "one man shop." He devotes part of his week to working in the district building and another part going into schools and checking to ensure everything is running smoothly. Wheaton also purchased help-desk software to help users problem solve certain issues without his help.

In some cases, however, the environment presents challenges that aren't as simple as a reboot. White speaks of Peggy Cowan, superintendent of North Slope Borough School District in Alaska, who took on the challenge of bringing high-speed Internet to her schools. Initially, she excitedly reported that the Internet was up and running. But later, a storm destroyed the satellite that provided the Internet connection, so the district had to start over.

"Different communities have different challenges," says White. It's more than an urban/rural divide as rural communities differ greatly amongst themselves. In Alabama, White says, poverty is a significant obstacle for rural districts. Their challenges are different than schools in the mountains of Kentucky, where the mountains themselves, "make it difficult to lay fiber and to have the types of broadband connection that we would like."

Technology is an equalizer in education. Schools, with a little innovative thinking, can use gadgets and a fast Internet connection to bring new opportunities, experiences and supports to rural students. Veldhouse emphasizes that it's not enough to toss technology into classrooms and expect magic. He hopes Wheaton will continue to make "meaningful advances not material advances," and that through those advances, students will be well on their way to global citizenship and "be able to connect outside of Wheaton on a true level." 