

A moving experience: Classrooms moving to the road, to a field, to a parking lot!

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Four walls and a roof are now optional features when it comes to what defines a wired classroom in Kentucky schools.

School buses equipped with wireless Internet access made their debut this summer in Madison, Gallatin and Kenton counties, which have been piloting the project with the state Department of Education.

“This truly takes us further along the path of allowing access from anywhere, anytime and that’s what a lot of our objectives are about,” said Mike Leadingham, KDE’s director of School Information Technology Services. “You have a lot of time that’s not capitalized on outside the building and yet, is still considered school time. Riding on a school bus is a simple example where there is a lot of positive and productive time that can be capitalized.”

That was what led Eminence Independent Schools to create the state’s first Wi-Fi bus a year ago for its students who travel twice a week to Bellarmine University in Louisville for college classes.

“We were putting our very best students on a bus for an hour each way, twice a week, so four hours a week they were going to be on a bus and they were going to have a computer and the teachers’ content was going to be online,” said Superintendent Buddy Berry. “How do we connect the student to the content, and the Wi-Fi bus was born out of that idea.”

Once word got around about Eminence’s bus, other school leaders began to consider recapturing lost learning time for their students.

“We hope that students on field trips, in extracurricular activities, will be able to do some homework and class work where they can use the Internet just like they do here at school,” said Gallatin County Deputy Superintendent Lenny Whalen.

Kenton County’s districtwide learning academies, which are getting ready to start their third year, give students greater opportunities but also potentially more time spent on a bus.

“Students choose (an academy) for careers they are interested in and they spend half a day at that academy and half a day at their home school, and those academies are

spread out across four buildings,” said Kenton’s Chief Information Officer Vicky Field. “We thought that time they were sitting on the bus could be captured for online courses, assist them in doing their homework, research for content in their area. So the real reason behind putting wireless on the buses was wrapped around those academy students being able to extend their learning time.”

Kenton County board Chairwoman Karen Collins said the district is always looking for ways to engage students.

“If they think this works, and they are able to do their homework, then we’ll do it, we’ll try it,” she said. “Some kids have to ride for awhile and they’ll be able to do what they need to do.”

Technical issues

While installing a device on a school bus to create a wireless hot spot is relatively easy, making sure students’ access to the Web is as secure as it is in a classroom was not as simple.

“If a student on a bus accesses a specific website, what has to happen is that it has to go through the Wi-Fi on the bus, come back to our district, go through the proxy server and essentially be routed back out for the student to be able to access whatever it is the student is trying to access,” Whalen said. “So if you think about it in the big scheme of things, that’s a lot of different turns and routes for that thing to go into for it to spit back out on the other end for them to be able to get where they need to go.”

Leadingham said those complications come from making sure students’ Web access complies with state and federal safety requirements.

“There is still a debate, whenever you’re providing mobile connectivity, how much you have to make sure that traffic is coming back through your school network so it can go through the Internet protection components that are in place as part of that network, versus if you’re in a mobile environment that the school is providing, do you allow that access to go (unfiltered) out to the Internet,” he said. “The solutions we’re piloting with these districts is, that traffic does come back through the school district network.”

Dave Sigler, a KDE network engineer who has been working with the pilot districts, cautioned that like cell phones, these systems aren’t foolproof.

“If you’re driving down the road in your car and you lose cellular signal, you know what happens,” he said. “The same thing happens here. You lose network connectivity when you lose your signal.”

Districts are finding the price to be reasonable – \$1,000-\$1,200 a bus for the cradlepoint device that creates the wireless network, as well as a router, plus generally a \$40-50 monthly access charge from the district’s Internet provider.

Beyond the bus

While this process has centered around school bus travel time, educators say its applications are virtually unlimited.

Tommy Floyd, superintendent of Madison County Schools when the project was being developed, said the district's Smart Bus will be useful in other situations.

"If a school has a power outage or does not have Internet access on an important day, let's say you drove three or four buses over to that school and park them beside the school and turn them on; you now emit a field where most of your students can log in wirelessly," he said. "It's very exciting."

He said the buses can also be used as part of the summer feeding program, in a natural disaster that disrupts the delivery of education or at an all-day event away from the school, such as a band competition.

Pat Hoskins, Madison County's assistant director of transportation, said it also can help with student discipline.

"I drove a bus for 31 years and if you can keep them occupied and entertained, they are so much better when they're on the bus," she said. "And if they're learning at the same time, I think that's great."

The bus is not even necessary for creating a wireless hot spot.

"If students are going someplace that does not have Wi-Fi capability and teachers may want them to have it, for example the zoo, you can actually plug in that cradlepoint router and students can get on the Internet there at that location," said Angie White, Gallatin's County's Director of Technology Services. "And it's not a little hot spot for four or five people – this is going to be something you can put multiple devices on. It's an exciting prospect."

For now, these districts are putting Wi-Fi on designated travel buses, but everyone involved expects this to become the new norm.

"I think it's going to be hard for districts to not do this in the future," said KDE's Leadingham, "especially if we have some affordable methods in place that can be followed."