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Internet Access Turns School Buses Into Rolling Classrooms

By Stephanie Simon

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As part of his economic-stimulus plan, President-elect Barack Obama has pledged to wire more schools to provide high-speed Internet access.

Ethan Clement, a student in rural Arkansas, has some advice: Don't forget to wire the buses.



A program providing wireless Internet access on buses enables high-school senior Ethan Clement to do classwork online during long rides to and from school in rural Arkansas, and offers her advanced classes and far-flung mentors. ILLUSTRATION: ARKANSAS DEMOCRAT-GAZETTE

Ethan, a 17-year-old high-school senior, has been taking math and science classes online during her 90-minute ride to school as part of a pilot project to turn old-fashioned school buses into cutting-edge classrooms.

The project, known as the Aspirnaut Initiative, gives some high-performing students laptops or video iPods and sets them up with online courses and educational videos during their long bus rides to and from school -- a round trip that often starts before dawn and ends after dark.

A number of participants have dropped out, unable to focus on studying as the bus bumps along gravel roads. But for students such as Ethan, the Aspirnaut Initiative has opened new worlds. The two college professors who run the program have become her mentors. For the first time, she said, she feels confident that she can aspire to a career in science. "It's not just for big-city people with good connections," she said.

Mr. Obama's pledge to get more classrooms online comes at a time of broad experimentation in high-tech education.

Small rural school districts have embraced distance learning, enrolling students in virtual classes teaching Spanish and other subjects they can't offer in person because of limited staff and funding. Urban and suburban schools, too, are directing students to the Internet.

Elementary students learning about animal habitats check in daily with a live Webcam monitoring the Florida Everglades. High-school literature students set up blogs and collaborative Web sites where they take on the persona of a favorite character and field questions from fellow students. In some districts, entire schools work together on online projects such as building a virtual museum.

"Technology tears down the walls of the classroom and allows students to interact with people they may find more interesting than their classroom teacher," said Don Knezek, who runs a nonprofit advocacy group called the International Society for Technology in Education.

The Aspirnaut Initiative extends that philosophy to the school bus. The program was founded by Billy Hudson, who grew up skipping school to tend chickens and pick cotton on his family's farm in Grapevine, Ark., a sprawling and sparsely populated community of about 700 people. He was on the verge of dropping out altogether when a mentor kindled a love of science. Now a renowned kidney specialist, Mr. Hudson directs the Center for Matrix Biology at Vanderbilt University in Tennessee.

A few years ago, Mr. Hudson and his wife, Julie, a medical professor at Vanderbilt, went back to Grapevine with hopes of finding a promising student to mentor. They rode the bus -- and were shocked to learn that, thanks to school closings and district consolidations, some students now commute as long as 90 minutes each way, with nothing to do but gossip, fight or stare out the window. "I thought, 'There's got to be a better way,'" Mr. Hudson said.

The Hudsons put up \$70,000 and raised another \$70,000 from friends to turn three buses into rolling classrooms. Eight students selected by their teachers have received laptops to use on the bus and at home, and 10 more will be given laptops in January. An additional 20 use video iPods to watch National Geographic or Discovery Channel videos.

The Hudsons are seeking grants or public funds to expand the program statewide in Arkansas and to parts of Tennessee and Kentucky. They also are tinkering with the program in the original pilot site, the Sheridan School District, south of Little Rock. Big-screen monitors will soon be installed on buses so those students who choose not to take individual classes can watch science videos together, listening through wireless headphones.

"Time on the bus is a no-man's land," Mr. Hudson said. "This is our chance to intervene." Some critics, however, see a danger in bus-based education.

Most students balance the computers on their laps, putting them in close contact with the radiation emitted by WiFi technology. In Britain, health officials have raised concerns about the effect of that radiation on children, warning that prolonged exposure -- via WiFi or cellphone usage -- could raise the risk for cancer or cognitive impairment.

A 2006 World Health Organization report found "no convincing scientific evidence" that wireless networks adversely affect health. Aspirnaut Initiative's Ms. Hudson said that while they aren't aware of any strong evidence pointing to radiation risks from laptop use, they ask the students to work with their computers in a padded case while on the bus.

Another point of contention: The Aspirnaut Initiative might lull parents into accepting ever-longer bus rides for their children, said Rachel Tompkins, president of the Rural School and Community Trust. Her nonprofit fights the growing trend to close small rural districts and community schools.

Skeptics also point out that it takes a very motivated student to power through an advanced algebra class on a bouncy, noisy bus at 6 a.m. Vera Launius, who drives one route on the pilot project, said the kids all clamored to participate at first -- "until the new wore off." Now, half turn away the video iPods she hands out. (They come preloaded with educational videos and can be used only during the ride.)

"They want music on there, instead of science," Ms. Launius said.

Students who do want to focus on their studies often complain that their friends don't make it easy. Said 8-year-old Lauren Taylor, "It's hard to concentrate when you have all these kids talking."

Still, Lauren loves the program. She has learned to use email and surf the Web. She is studying data analysis in an online math unit. Her mom, Vonda Taylor, was amazed when Lauren came home one day quoting facts about Pocahontas she had learned on the bus from a Web site offering social-studies lessons along with math and science. "Before, she just kind of looked out the window," Mrs. Taylor said.

Ethan's mother, Kirsten Clement, is just as enthusiastic. The online classes allow regular interaction with far-flung teachers. Last year, Ethan completed AP Biology on the bus, earning college credit. This year, she is taking a calculus class not offered at her high school.

"Ethan has had conversations with people who can tickle her mind, and that's something I could not provide for her," Mrs. Clement said.

Write to Stephanie Simon at stephanie.simon@wsj.com
