Wired Bus

Sheridan School District
Sheridan, Arkansas

Problem: Children in Grapevine, Ark., face a three-hour round-trip commute to get to and from their school in Sheridan, Ark.

Solution: Billy Hudson, a professor of medicine and biochemistry at Vanderbilt University, and his wife, Dr. Julie Hudson, created the Aspirnaut Initiative, a pilot project to elevate achievement among rural students with lengthy bus rides to school. They partnered with a company named Internet in Motion to outfit a school bus with a cellular antenna that provides Web access during the long rides. The Aspirnaut Initiative, a collaboration between Vanderbilt University and the Sheridan School District, is creating math and science content and has given the students laptops and video iPods to use.

Back to School 2.0 - Education projects such as the Aspirnaut Initiative aim to harness technology to better prepare U.S. students to compete in the global economy

by Rachael King

Children in Grapevine, Ark., often board the school bus in the dark, some even packing pillows and blankets. For students in Arkansas' rural Sheridan School District, the ride can last as long as an hour and a half, and probably seems longer thanks to rules against behavior that could distract the driver. But lately the 15-hour weekly commute is looking up.

Thanks to a pilot program called the Aspirnaut Initiative, the bus has been outfitted with an Internet router and the children have been given either video iPods or laptops. The machines have been loaded with educational videos such as National Geographic Society's *Wild Chronicles* to teach concepts such as the relationship between predator and prey.

Closing the Math and Science Gap

The project was started by Billy Hudson, a biochemistry professor at Vanderbilt University, and his wife, Dr. Julie Hudson, an anesthesiologist. Billy Hudson grew up in Grapevine, and knows well how few opportunities there are for children there. "People are seeing in rural areas that the jobs they know about are being outsourced," he says. The Hudsons wanted to help encourage children in rural America to enter math and science fields. So the couple, along with Vanderbilt and the Sheridan School District, are setting out to create, in essence, a one-room schoolhouse on the bus, using online video and podcasts to deliver educational content. The response has been enthusiastic and the kids want more content, Julie Hudson says.

There's a growing awareness among some educators that American public schools may not be adequately preparing children to compete in a global economy (see BusinessWeek.com, 4/10/07, "A Flawed Measure of Ed Tech"). U.S. eighth-graders ranked 14th in math and 8th in science out of 35 countries listed in the Trends in International Mathematics and Science Study in 2003, the last year the study was released. "We're not just competing with school systems in the state," says Suzanne Freeman, superintendent of Trussville City Schools in Trussville, Ala. "Our kids are competing with India, China, Japan, and other countries around the world."

Freeman says her district is trying to help teach children to solve problems, think creatively, and understand the world on a global scale. To do so, Trussville City Schools and other forward-thinking schools across the country are using technology such as podcasting, blogging, Internet calling via eBay's (EBAY) Skype, and other tools to foster collaboration, creativity, and the ability to connect with others globally. "It's an understanding that having teachers stand up and talk to kids all day long isn't going to cut it," says Cathy Gassenheimer, president of the Alabama Best Practices Center, which received a $430,000 Partners in Learning grant from Microsoft (MSFT). Over the past two years, the center has recruited 40 schools, including one in Trussville, for the 21st Century Learning Project to demonstrate what can be done with an online curriculum.

Expanding Kids' Worlds

Most of the resulting 100 Web-based projects are efforts to tackle real problems. For example, some students at George Hall Elementary School in Mobile, Ala., have struggled to learn to read, partly because many vocabulary words seem foreign, says Gassenheimer. When a class read a story about a trampoline, none of the students knew what one was, she says, adding few students in the low-income neighborhood have ever traveled more than a few blocks from home. Students at George Hall have begun taking a series of field trips to help teach vocabulary words. Field trips are recorded in photos, podcasts, and blogs on a free wiki from Wetpaint. Not only are children reminded of vocabulary words when they revisit the field trip, but students in other classes can experience these field trips virtually as well.

While technology can give students tools to record experiences, it can also help bring other worlds into the classroom. "The whole idea of opening up vistas for kids that might never know the reality of another part of the country or another part of the world is absolutely critical," says Peter Grunwald of Grunwald Associates, a consulting firm that conducts studies on educator and family use of technology.

After fourth-grade students at Paine Intermediate School in Trussville read an article about how children in Africa were dying of malaria because they didn't have mosquito nets, they decided to raise money for the organization Nothing But Nets. Teachers then arranged a phone call over the Internet via Skype to Sarah Koch, a Peace Corps volunteer in Senegal, who had once ridden a bike several hours to take a baby sick with malaria to the nearest clinic for help.

Not only are pupils using tech to broaden their own horizons, but they're also harnessing it to broadcast their own stories. Mabry Middle School in Marietta, Ga., welcomed visitors from all over the world after students began creating online video documentaries on weighty subjects such as stem-cell research and elephants in captivity. The project began in 2001 after then-principal Tim Tyson grew frustrated that teachers relied heavily on conventional teaching techniques while computers in classrooms sat idle. Apple (AAPL) agreed to provide training on how to create digital films, and Tyson decided to create a schoolwide film competition. The school began posting the videos online two years ago and serves up an average of 1.5 million files per month.

Ensuring Safety and Educational Value

Weaving emerging technologies such as chatting and social networking into the curriculum plays well into students' out-of-school interests. About 96% of students with online access report they've used social-networking technologies such as chatting, text messaging, blogging, and visiting online communities, according to a study by Grunwald Associates that was conducted with support from Microsoft, News Corp. (NWS), and Verizon (VZ). Of those students, 71% use such tools weekly.

The risk, of course, is that cool gadgets or access to the Web become a distraction in the classroom—or worse, a threat to kids' safety. About 52% of all school districts in the U.S. specifically prohibit any use of social-networking sites in school. Many parents and teachers are afraid of inappropriate content their children might see online as well as possible exposure to online predators. Those fears are apparently well-founded. About 1 in 5 children online is sexually solicited, according to the National Center for Missing & Exploited Children, which has created www.netsmartz.org to teach children, parents, and educators about online safety.

Many schools impose guidelines for the use of technology in classrooms, rather than banning the tools altogether. "A 9-year-old needs serious protection and needs to be guided, but by 18 or 19, kids need to form their own philosophical compass to guide them," says Don Knezek, chief executive of the International Society for Technology in Education, a nonprofit organization that seeks to advance the effective use of technology in schools. In Grapevine, Ark., the Hudsons load the iPods with videos and don't let children take them home. For the laptop users, the educators issue guidelines on Internet safety and enter into a contract with students and their parents. One stipulation: The machines will be taken away if they're used inappropriately.

For now, the children are excited to have something to do on the long commute and the Hudsons are applying for a grant to extend the pilot program to other buses. In the Sheridan School District alone, students are bused in from an area more than 600 square miles, as a result of school consolidation that has taken schools out of smaller, local communities. The question is how to manage all the time on the bus. "Schools don't have that time, they're buried in No Child Left Behind accountability," says Billy Hudson, referring to federally mandated school testing requirements. Instead, he says, the Aspirnaut Initiative is a way to put the one-room schoolhouse back in the community, virtually.

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