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neatoday Technology Divide

Mind the Gap

It's a high-speed, high-def, Wi-Fi world. But not for everybody.

By Cindy Long

Gordon Stewart, 16, has his own computer in his bedroom in Arlington, Virginia, as do his two sisters. He uses the Internet for homework, but spends hours online long after his studies are completed—if he's not chatting with his friends or updating his blog he's busy posting mash-ups to YouTube or playing elaborate, multi-partner video games.

Students like Gordon are so digitally connected it's as if they were born with their own ringtones and MySpace pages. But not everyone in "Generation Next" has access to this seemingly ubiquitous technology.



[Learn more about the "participation gap" -- read a Q&A with MIT professor and media expert Henry Jenkins.](#)

Consider Jonathen Williams. He drives almost 40 miles each day, from Wiggins, Mississippi, to Hattiesburg so he can use the Internet at a community center to research colleges and apply for student loans. He doesn't have a computer at home and doesn't have the luxury of spending hours online to explore, experiment, or express himself like Gordon.

With such limited access to computers and high-speed Internet, students like Jonathen are falling into the latest version of the digital divide—what's being called the "participation gap"—where they have fewer opportunities to develop the digital literacy necessary for an increasingly technical world.

Students with round-the-clock, high-speed Internet access have more opportunity not only to be content consumers, but also content creators with a global audience—they have a chance to

be "publishers, movie makers, artists, song creators, and story tellers," says Lee Rainie, director of the Pew Internet & American Life Project.

The more opportunity young people have to play around online, the more their experience and comfort with technology grows. They're becoming digital innovators who will increasingly integrate technology into their everyday lives and use it to shape the future—a future that will likely look a lot different for the millions of kids without the same level of experience.

According to Pew Research, there are still 30 million American households that do not have a computer, mostly in low-income or rural communities. For the majority, it's a matter of dollars and cents—a few hundred dollars for a home computer coupled with a 30 or 40 dollar monthly broadband bill isn't practical when it's a struggle to keep the lights on.

For kids in low-income households, the only place to get online is at school or at the library. Of Hispanic children, 39 percent rely on schools to use computers. Of Black children, the number swells to 45 percent, compared to just 11 percent of Asian and Pacific Islanders and 15 percent of White children.

Andrew Rasiej, who advises members of Congress on the use of the Internet in politics and policy, is an advocate for universal Internet access. "We need to think about Internet service the way we thought about phone service when we forced Ma Bell to connect everyone to a dial tone," says Rasiej, who also founded the Personal Democracy Forum to raise awareness about how the Internet is changing democracy in America.

"If we don't have universal access, we're going to leave behind a generation that is not able to participate in the 21st century global economy," he says.

In 1997, Rasiej started a program in New York City public schools called Mouse.org to introduce inner-city kids to technology and teach them how to navigate the Internet and even how to fix and maintain aging computers in their own schools. About 90 percent of the kids in the program go on to college, in areas where the average college-bound rate is less than 50 percent. "Once you hand kids access to technology and the World Wide Web, you break the chains of social and economic inequity and allow these kids to take responsibility for their own future," Rasiej says. "That's the big opportunity."

Desert Connection

Thomas Edison once said that "opportunity is missed by most people because it is dressed in overalls and looks like work." But when it knocked at Agnes Risley School in Sparks, Nevada, fifth-grade teacher Brian Crosby recognized that a little effort on his part would go a long way.

When the school replaced their 7-year-old Apple I-book laptops with new Hewlett Packard computers, Crosby asked for the castoffs so he could pilot a 1:1 laptop program for his students. Now Crosby uses them for all of his lessons, incorporating technology into everything his students do and learn.

More than 90 percent of children at Agnes Risely live below the poverty level and more than half speak English as a second language. Many of their parents work two or more jobs to keep food on the table—home computers and Internet services are extravagant luxuries for their richer neighbors.

For more affluent kids, using technology is like using a pencil, Crosby says. After second or third grade, they no longer think about how to hold the pencil; it's become second nature.

"But at-risk kids aren't able to use technology every day and haven't had exposure to it at home and have to play catch up to learn the technology as well as the lessons. When they're concentrating so much on the tool rather than the lesson, it costs them time and presents a steep learning curve."

Crosby was concerned that when his students went on to high school, they'd feel intimidated by



Without the innovation and inspiration of their teacher Brian Crosby, fifth-graders in the desert community of Sparks, Nevada, would be left out in the digital cold.

the technology that many of their classmates were so accustomed to and that they'd set their sights lower as a result.

"They're less likely to go to college if they feel they don't have the same skills their classmates have," he says. "They're well aware of the technology that's out there....I wanted to bring the technology to them and expose them to it early on."

Spend a day in Crosby's classroom and you'll see kids editing wiki pages and holding Skype conferences. They blog, create digital videos, and participate in online forums, all the while developing the same literacy as any tech-savvy middle class student with 24/7 access.

"The technology allows the students to learn for themselves, which is a huge weakness for at-risk kids because we've so narrowed the curriculum for them," says Crosby. "My students are developing the mindset and skills to be thinkers and experimenters, then they can blast off into the curriculum. But first you need to make the technology accessible. Make it ubiquitous."

Transforming a Rural Community

Until recently, most residents of Flinton, Pennsylvania, had a hard time connecting to the digital world. Deep in the heart of coal country, Flinton is about as close to nowhere as you can get, according to locals. A rural, low-income community where there are more deer than people, and more people than jobs, Flinton used to be the kind of place kids dreamed of leaving someday.



It may not be scenic, but this tower atop Glendale High School brought wireless, broadband access to this rural community.

But that was before BRAIN—the Broadband Rural Area Information Network—a wireless high-speed Internet network delivering broadband access to a wide swath of rural Pennsylvania that had been left in the information dark ages by the local cable and telephone companies.

The wireless network was the idea of Dennis Bruno, superintendent of the Glendale Area School District and a forward-thinking tech advocate who recognized the ability of technology to transform a community and its young people.

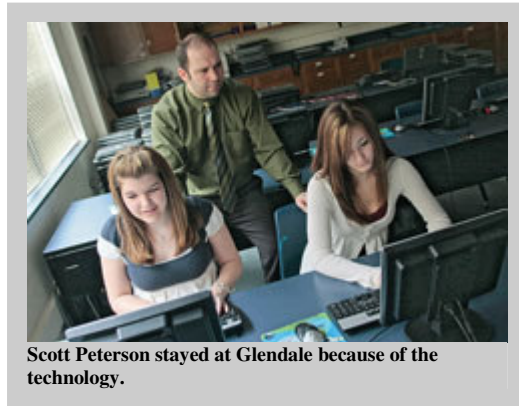
Before the wireless network, residents paid nearly \$40 a month for dial-up service, which was even slower than normal because of the region's antiquated phone system. Now the community pays \$14 a month for a high-speed connection, much less than the typical fee for DSL or cable modems.

The network has attracted businesses and pumped up the local economy, but the most remarkable change Bruno has witnessed has been with his students. "When I first got here seven years ago, only 14 percent of them were going to college after high school," he says. "Now, 78 percent of graduating seniors go on to colleges and universities. The only difference is the technology."

Now that Miranda Martz, a junior at Glendale High School, has broadband Internet at home, she says her education doesn't end with the last bell. She continues her Spanish lessons with online tutors or logs on to collegeboard.com to practice her SAT skills, but she also spends time goofing around online—mainly, like most teenagers, on MySpace.

"We were at a major disadvantage without the technology, but now we use it all the time. It's such a huge thing in the world today—not just for school, but for everything," she says.

The wireless network has literally opened up the world to rural Flinton. Using the broadband pipeline, Bruno held a video conference with the Minister of Education in Taiwan and the Pennsylvania Secretary of Education to establish the first cyber Mandarin Chinese language program for elementary schools in the nation.



"We can't compete with large districts in terms of curriculum, but we need to be able to enrich students' education and keep pace with kids in more urban areas," says Bruno. "The equalizer is the technology."

Scott Peterson is a business and technology teacher at Glendale High. He was wary of going to a rural part of the state for his first job out of college, but thought he'd give it a try. "Seven years later, I'm still here," he says. "To be honest, the main thing that kept me here was the technology and the teaching opportunities it provides."

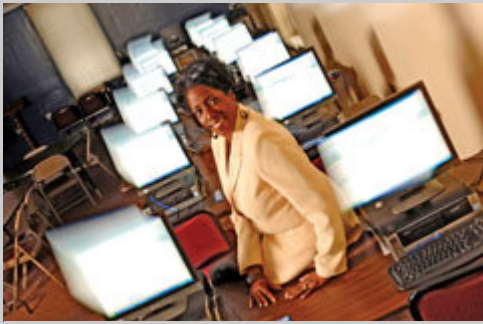
Peterson lives an hour away and drives through three other school districts that have no broadband access or even cable TV. "Those students are going to be left behind," he says. "With the advances that happen with technology every day, there's no catching up."

Broadband for the Bayou

Jonathen Williams is no stranger to long drives. He used to go to the public library in Wiggins, Mississippi, to use the Internet, but he had to wait in line and then sprint through his allotted 45 minutes to finish his research before his time was up. Now he drives almost an hour to Hattiesburg, where he's able to use one of 60 computers, provided by a grant from Cisco Systems, at the Harper-Wallin Family Education Center, an old Pepsi bottling plant turned computer lab and training facility. He admits that the computer center isn't the only draw to Hattiesburg—his girlfriend also lives there—but he says having unlimited Internet access to research his top university picks, look for apartments, and do some job hunting makes the drive worthwhile, whether or not he tops it off with a date.

He says the best part about the lab is the unlimited amount of time he can spend online. When he's finished with his work, he logs on to his MySpace page or checks out videos on YouTube.

"I've never had to wait for a computer here, and I'm never rushed," says Williams. "It's a peaceful experience and I can do exactly what I want online, without any distractions."



Irene Williams, director of the Harper-Wallin Family Education Center, invites everyone from the community to use the state-of-the-art computer lab.

The computer lab at the community center is one of a series of grants and programs from Cisco Systems that have brought thousands of Hattiesburg-area residents into the digital fold. Hattiesburg sits at the fork of the Leaf and Bouie Rivers in the heart of southern Mississippi's pine timberlands. It's called the "Hub City" because of its central location, but nearly 90 percent of students in the Hattiesburg School District live in poverty. With a median household income of \$26,821, most technology is out of reach.

"Parents recognize how important the technology is for their kids, but most can't afford home computers," says

Irene Williams, director of the family center. "But now parents and grandparents bring their schoolchildren here, or they come themselves to learn about the technology so they have a better understanding of what their kids are working on."

Joyce Jackson's grandsons call her "Sugar" and live with her part-time. Every day she brings them to the computer lab, where they get online to research homework assignments or simply surf the Web. A retired educator, Jackson knows how important reading is, and she encourages her youngest grandson, Amir, 7, to visit Mybookpal.com where he can listen to famous people read award-winning books.

She says the lab expanded access for her and her grandsons, but that she finally threw away her encyclopedia when she got a computer and high-speed Internet access at home. Through the "Affordable PC Program," a partnership with Cisco and One Economy, a nonprofit organization delivering technology to low-income people, Jackson was able to buy a low-cost PC and monitor and wire it to a broadband connection. "It's helped them so much—they can use it for reports, science fair projects, book reports," says Jackson. "But the best part is that they've learned how to find information for themselves."



Joyce Jackson used a grant to purchase a home computer for her grandsons.

At Rowan Elementary School in Hattiesburg, principal Melvia Fountain has watched technology boost her students' digital literacy. Rowan and other schools across the district are now brimming with cutting-edge technology and are wired for speed thanks to Cisco's 21st Century Schools, a \$40 million dollar technology program delivering a richer education experience to tens of thousands of low-income students in Mississippi and Louisiana.

"The presence of technology takes away the mystery—now it's every day for our students," Fountain says. "But the biggest change we've seen is in how students are taking charge of their own learning. By knowing how to access, manipulate, and evaluate information, they're building the skills necessary to become lifelong learners."

Those skills, says Andrew Rasiej of Mouse.org, are different in the information age, when almost anything anyone might want to know about is now just a click away. For the past 100 years or more, he says we've been teaching students through rote memorization. "With the Internet, all the pieces of information are readily available. The skill set students need today isn't memorization,

but navigation—the ability to find what they're looking for and separate truth from fiction."

Silicon in Visitacion Valley

Knowing how to navigate the Web for information saves Lavonda Gray, a junior at the June Jordan Small School for Equity in San Francisco, a lot of time. But she wasn't always so well-acquainted with Google.

She used to have to squeeze in Internet time at the library, or after school in her teachers' offices. She didn't have time to conduct in-depth searches, let alone explore the Web for her own entertainment. But through the help of technology nonprofit One Economy, which provided a grant for a home computer and a year of high-speed Internet, she now has broadband access at home. She's also a member of the organization's Digital Connectors program, which immerses young people from underserved communities in technology training and instruction, technical support, and leadership development. Through Digital Connectors, Gray learned not only how to navigate the Web and use different programs, but also how to troubleshoot computer problems, repair hardware, and teach others in her community about technology.



For years, Northern California has been a high-tech heaven, but not for students who live in the Bay Area's low-income neighborhoods, like Lavonda Gray from Visitacion Valley. Now, with the help of One Economy, Gray shares her newly developed tech-savvy with her peers at the Boys and Girls club.

"Lavonda has been a real role model in her community, teaching people about the benefits of technology and helping them use the Internet to learn," says Leo Sosa, a One Economy staff person who works with Digital Connectors in San Francisco and around the country. "Her enthusiasm has helped encourage other youth to join the program."

Gray lives in Visitacion Valley, a tough neighborhood in San Francisco plagued by crime and poverty. One safe haven is the Boys and Girls Club, where, through the Digital Connectors program, Gray spends afternoons teaching her neighbors about technology. She was surprised to find that a lot of the kids didn't know how to use a mouse or attach a file to an e-mail.

"Technology is too big a part of our world for kids to not know the most simple stuff," she says. "That's where you find the gap—it's where kids can't go online to just mess around, find stuff, explore. Kids want to know about technology. They want to know how it all works and what it can do. It's everywhere, it's the future. Kids who can't access it, well they're just living in the past."

For more information, visit [One Economy](#) and [The Partnership for 21st Century Skills](#).

Send comments on this story to clong@nea.org.