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All over the country, secondary school students are going online for classes. Will the virtual classroom redefine what it means to be a student—or a teacher?

By Christina Wood
Illustration by Gary Baseman

Katarina Williams is an ambitious tenth grader in Haines City, Florida, shouldering the full burden of college-prep coursework: trigonometry, English, Earth-space science, economics, and American government. But trig is the only class that requires her to sit in a traditional classroom. The others she attends via modem, without leaving her house.

Williams, a student at the Florida Virtual School (FLVS), is part of a new generation of students trading textbooks for text messaging. Nearly 300,000 high schoolers attended online classes in 2002–03, estimates Eduventures, an independent research firm. Most take an online class or two to obtain access to classes not available at their local school, gain a competitive edge when preparing for college, or accommodate a jammed schedule. A few, though, are so convinced of the efficacy of on-line instruction that they've abandoned traditional schools altogether.

Virtual schools make available a world of new courses—from obscure electives to advanced-placement classes—that challenge students intellectually and open up new doors educationally. And, thanks to the anytime, anywhere nature of online courses, students with a range of special circumstances (from health issues to job or family constraints) don't have to fall behind or drop out.

From small rural communities to large urban centers, schools of all sizes and styles are looking to online courses to patch holes in their own academic lineups. Throughout West Virginia, for instance, online Spanish courses provided students access to foreign-language instruction when their own school can't hire a qualified classroom teacher. In Las Vegas, Nevada, the Clark County School District's Virtual High School helps accommodate a fast-growing and geographically far-flung population; as many as 500 students take all their courses online, rather than in overcrowded classrooms. The Illinois Virtual High School targets students in low-income, inner-city neighborhoods, where it's often difficult to keep qualified teachers in key subject areas.

For a student in a rural or poorly funded school looking for a class in marine sciences or Web programming, an online course may be the only option. "Many of these students wouldn't have access to these classes otherwise," says Bob Blomeyer, a senior program associate with the North Central Regional Educational Laboratory, which provides resources to teachers and policymakers. "There is a tremendous potential for education improvement."

The results can be life changing. Online computer-science courses helped Daniel Spangenberger, of Berkeley Springs, West Virginia, get accepted into Carnegie Mellon University—and earn a scholarship to pay for it. "Those courses expanded my field of study and my knowledge in areas that my small high school couldn't," he explains. "There was no way I would have been able to start as a sophomore in my computer-science study at Carnegie Mellon without those classes."

The flexibility of online learning is a big draw for students with a heavy schedule of extracurricular activities, too. In Hudson,

Massachusetts, junior Zoe McNealy is a full-time honor student at Hudson High School and a competitive ice skater, thanks to the flexibility of online courses. Each term she takes one or two online classes—including The Holocaust, Young Adult Literature, Personal Finance, Mythology, and Pre-AP Environmental Science—giving her the opportunity to maintain a rigorous training schedule and compete nationally and internationally with her championship synchronized-skating team without falling behind academically.

About 25 percent of K–12 public schools offer some form of virtual instruction, according to the National Education Technology Plan, released by the U.S. Department of Education in January. Within the next decade, the report predicts, almost every state and school will follow.

To Fund or Not to Fund

For elementary and secondary schools, the origin of online learning can be traced back to 1996, when two pioneers, the Concord Consortium, in Concord, Massachusetts, and nearby Hudson Public Schools, in Hudson, partnered and created the Virtual High School (VHS) project. Their goal: to "pool teaching resources and increase course offerings to high schools," explains Liz Pape, the project's CEO. In exchange for providing a teacher for an online course, a school can enroll up to 25 students in VHS classes. (Training, provided by VHS for a fee, is mandatory for all VHS teachers and course developers.) To date, VHS includes nearly 300 public and private high schools in 27 states, as well as 24 international schools, and offers more than 200 Internet-based courses.

At about the same time the VHS was starting, Florida governor Jeb Bush approved seed money for e-learning proponents to plan a statewide virtual high school. The Florida Legislature initially funded FLVS as a pilot project in 1997 and kicked in $1.3 billion to begin course development; to ensure that the project didn't threaten general education funding, Bush created a separate budgetary line item for it. "Each of our students was essentially a double-dip," says Julie Young, president and CEO of the school; it received state funds for every student enrolled in one of its classes, but the students' home schools also received funding. The dual-funding model lasted for five years—long enough to build the program and develop a loyal cadre of students, schools, and districts participating in the online courses.

Young says the unusual funding mechanism was key to FLVS's success. "It gave us an opportunity to build the program at no threat to school districts," she says. Today, the school serves thousands of students throughout Florida and around the globe. FLVS has also joined the ranks of online-courseware entrepreneurs, selling its curriculum to schools in Florida and beyond and offering franchises (a soup-to-nuts offering of everything from hardware and software to curriculum to teacher training) to school districts within the Sunshine State.

Although other states struggle to maintain a virtual-schooling option, FLVS now has its own revenue stream. In 2004, the school generated roughly $500,000 in profits—money that went back into FLVS for further course development. "That's money we could not have found elsewhere," says Young. "It's utilizing an asset to make the asset stronger."

The one-two punch of high-level political support and secure funding are critical components in keeping virtual schools vibrant, says William Thomas, director of educational technology at the Southern

'We have identified gifted students online that were not identified in the classroom.'

Regional Education Board, an organization that helps state leaders create and expand effective use of technology in K–12 schools and colleges. "The states have to take this on in order for it to be a success," he says. "A teacher cannot get this started."

The FLVS launch benefited from a political shot in the arm, but a similar program in North Carolina was not so fortunate. Like the Florida school, the Cumberland County Schools' Web Academy, in Fayetteville, opened its first class in 1997. Eight years later, it offers online courses to only a few counties in the state. What happened? "Florida's program was state sponsored, while North Carolina has not as yet funded a virtual school," says Allan Jordan, the school's principal. As a result, districts must pay for their students' online courses, forcing local school authorities to choose between spending money on virtual courses and funding local programs and projects.

Beyond the Screen

Today's virtual classes have come a long way from the correspondence courses once advertised on matchbook covers. In those early programs, students received assignments in the mail, shipped back their completed work, and waited for the mail carrier to bring a response from the teacher.

Today—thanks to electronic whiteboards, digital animations and labs, threaded discussion groups, chat, and email—online learning, in a good course, can be more immediate than some face-to-face instruction. "I love it," says FLVS student Williams. "My online teachers make me feel

From Desktop to Countertop: Online learning isn't just about sitting in front of the computer (though there's a lot of that, too). Off-screen lessons—including self-guided science laboratories—are built right into virtual courses.

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like they're my private tutor." Students converse with the teacher and classmates, give online presentations of offline work, perform virtual and traditional lab work, and meet in virtual conference rooms.

They have happily discovered that you don't have to wait long for feedback on a project or test. "When you turn in an assignment, the teacher will email you a response telling you what you did wrong and what you can do to fix it," says Nick Petrecca, another FLVS student. "From that email, you can click on the assignment, go back into it, and take their advice."

This immediacy, combined with the physical separation inherent in the online environment, can give students a sense of freedom and openness that isn't always present in a typical classroom. "I know my online students better than my classroom students," says Mary MacNeil, a teacher at Pope John XXIII High School, in Everett, Massachusetts, who teaches contemporary Irish literature through VHS. "We discuss themes and characters, and in those discussions, students often tell me personal anecdotes. They are comfortable online and confide in me more than they would a teacher that they see every day."

The freedom of expression some students find online can shine a light on talents that go unnoticed in the typical classroom fray. "We have identified gifted students online that were not identified in the classroom," explains Linda Pittenger, director of the Division of Virtual Learning at Kentucky Virtual High School. "Many students respond to this learning environment in a way they don't in a classroom."

Tracy Sheehan, who teaches biology and bioethics both for VHS and at Westborough High School, in Westborough, Massachusetts, says she hears from students online who would probably remain silent in class, especially when teaching bioethics. "People don't know you as the kid down the street when you're online," she explains. "In class, if you say you support the right to an abortion, your parents might hear about that. Online, it doesn't matter."

Students also demand more of their teachers. "One of our professors made an interesting comment," says Allen D. Glenn, professor and dean emeritus in the University of Washington's College of Education, an expert in teaching teachers to use technology. "He said, 'I never realized how many of my students' questions I never answered until I taught online.'"

Just as online courses can foster closer relationships between students and teachers, so, too, can they build understanding among far-flung students. For example, the Dalat International School, in Penang, Malaysia, offers courses to its students through FLVS. "It allows our students to interact and take classes with kids in the U.S. and all over the world," explains Karl Steinkamp, the school's principal. "It also gives students in the U.S. a larger worldview." Because teenagers chat about

New Tools, New Methods: In a virtual classroom, the teachers aren't absent; they just assume new roles. For example, Virtual High School site coordinator Gabriel Cruz (left) makes sure students get the support, resources, and (occasionally) prodding needed to succeed in their online courses. Meanwhile, Spanish teacher Joyce McClanahan connects with her students by phone and email.
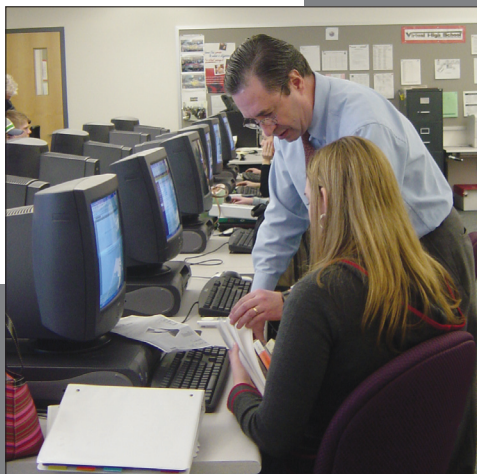
A New Way of Teaching

For veteran teacher Kelly Myers, moving from the traditional classroom to the world of virtual teaching and learning was like starting over. "It was almost as if I was a brand-new teacher again," says Myers, who teaches English for the Florida Virtual School (FLVS). "The transition was more difficult than I ever imagined. It probably took six months until I felt comfortable."

Fortunately for Myers, she had a mentor teacher to hold her hand (virtually speaking) and plenty of professional development through FLVS as she made the transition to online teaching.

Personal and professional support are critical for anyone beginning to teach an online course—regardless of how many years they've taught in a traditional classroom. "There's this persistent opinion that people who have never taught in this medium can jump in and teach a class," says Bob Blomeyer, senior program associate with the North Central Regional Education Laboratory. "A good classroom teacher is not necessarily a good online teacher."

Part of the transition has to do with style. The online teacher has to be more of a guide and director for the students. Teachers who are accustomed to using lectures, rather than projects and other inquiry-based activities, for example, will find their style ill suited to the virtual classroom. Online teachers also quickly discover that developing a relationship with their far-flung students takes time. Lots and lots of time.

Joyce McClanahan is a lead teacher with the West Virginia Virtual School's online Spanish courses. Her day starts at about 6 a.m., when she logs on to her computer to answer email messages. She finally winds up by 10 p.m. or so, after logging many emails and phone calls with students throughout the state.

"You're always available for the students, and they know they can email you anytime and you're going to respond," says McClanahan. "Their class day with you doesn't end at 3:30, like it does with a normal class. They can go home, and any time at night, they can email you about personal problems or school problems." And it's not just email. McClanahan has a toll-free line students can call after school hours when they need a little extra help with their work or to study for a test.

That dawn-to-dusk (and beyond) access is great for students but can be all consuming for the online teacher. FLVS's Myers soon realized that she needed to create some boundaries, or her online teaching would consume every waking hour.

"The biggest struggle is to arrange a schedule, because now you're open to this great flexibility that you've never had before," Myers says. Unlike the traditional classroom, which you lock up and leave at the end of the day, the Internet is always there." —*Roberta Furger*

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what's going on in their own lives, students in, say, Boston might chat with peers living through world events like the tsunami in Malaysia.

Offering students in San Francisco the opportunity to interact with peers in Alabama might go a long way toward putting our "two Americas" back together as well. Even in closer geographical scales, online interaction can enhance community. "A student in the Florida Panhandle and one in Miami might as well be in different time zones," says FLVS's Young.

Not a Panacea

Although virtual schools may open doors for young minds, they're not a cure-all for the shortfalls of public education. In fact, the idea that they are a panacea may be one of the few real dangers of online learning.

"Over the past year, when I've been talking with people about the problems in schools, the answer is always 'distance learning,'" says Rachel Tompkins, president of the Rural School and Community Trust, which advocates for online learning. "I've worked in poor communities in the South that have crumbling facilities and difficulty recruiting teachers and principals. Online learning is not a solution to facilities that are falling down, and it doesn't solve underfunding."

Virtual schools also raise a few problems of their own. For example, though the virtual classroom offers shy students a front-row seat and one-on-one access to their teachers, the instructors have to find time to provide that attention, usually with no additional resources. Add to that the meticulous preparation necessary to teach online, and you have a recipe for a teacher time drain.

Adequate training and screening for virtual teachers becomes a crucial part of the package. The best virtual schools pay enormous attention to teacher training, but others use their programs as a way around traditional teacher requirements.

A good teacher makes a good class. Even with excellent training, some teachers simply don't work well online. Students don't always, either. Initially, some choose virtual classes because they think they'll be easier than their face-to-face counterparts. That's not usually the case. An online class requires discipline and motivation. Some students simply aren't up to it, even if they excel in a traditional classroom setting. "Students must be willing to take responsibility for their own learning," says Matt Wicks, director of virtual learning at the Illinois Mathematics and Science Academy, who oversees the Illinois Virtual High School. Ironically, students who do well in traditional settings may not succeed online. "Unless the student is a bit of a risk taker, they struggle here," Wicks says. "I think that's because the traditional system does not place responsibility on the student."

Another critical issue is course quality. As in traditional classrooms, the caliber of virtual classes can vary considerably. More established schools have developed rigorous content and curriculum standards and require a high level of interactivity in the courses. But the same can't be said for all online courses offered to high-schoolers today. "But if we start applying the same kind of rigor and evaluation to online high school courses that we apply to curriculum in brick-and-mortar schools," says the North Central Regional Educational Laboratory's Blomeyer, "it will even out fluctuations in quality."

Blended Learning

During the past decade, virtual K–12 schools have developed from far-flung hatchlings to a full-fledged industry that has allowed high school students to make excellent use of their high school years by cherry picking among the best teachers in several states.

But what will the next 10 years bring? Will students sit in cubicles? Will everyone stay home? Not likely, say most experts. "Online learning will never replace the classroom," says FLVS's Young.

Some form of blended learning—online and in the classroom—will likely become the norm, as students take one or two online courses to supplement their traditional schedule. And even when they're enrolled in online courses, most students won't be entirely on their own. An in-class teacher will act as a coach, helping students select online courses and making sure they stay on track and manage their time well. The local coach or facilitator might assist students with real labs and virtual ones, join them on real field trips and their online counterparts, and help students find online sources and offline ones. It is a model that will better prepare them not only for college—where these skills are essential to success—but for life in an information-driven society.

"Schools are essential institutions in the community," says the Rural School and Community Trust's Tompkins, and online learning doesn't change that. "Schools play a tremendous role in socialization and in the community," adds the University of Washington's Glenn. "Even the kids don't always want to stay home." @

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Ice Dreams: Without the flexibility of online courses, synchronized skater Zoe McNealy couldn't maintain her rigorous practice and competition schedule. "It's a time thing," says her mom, Nancy Eddy (far right). "Zoe can work on a class at 10 p.m. if that's when we come home from a competition."

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