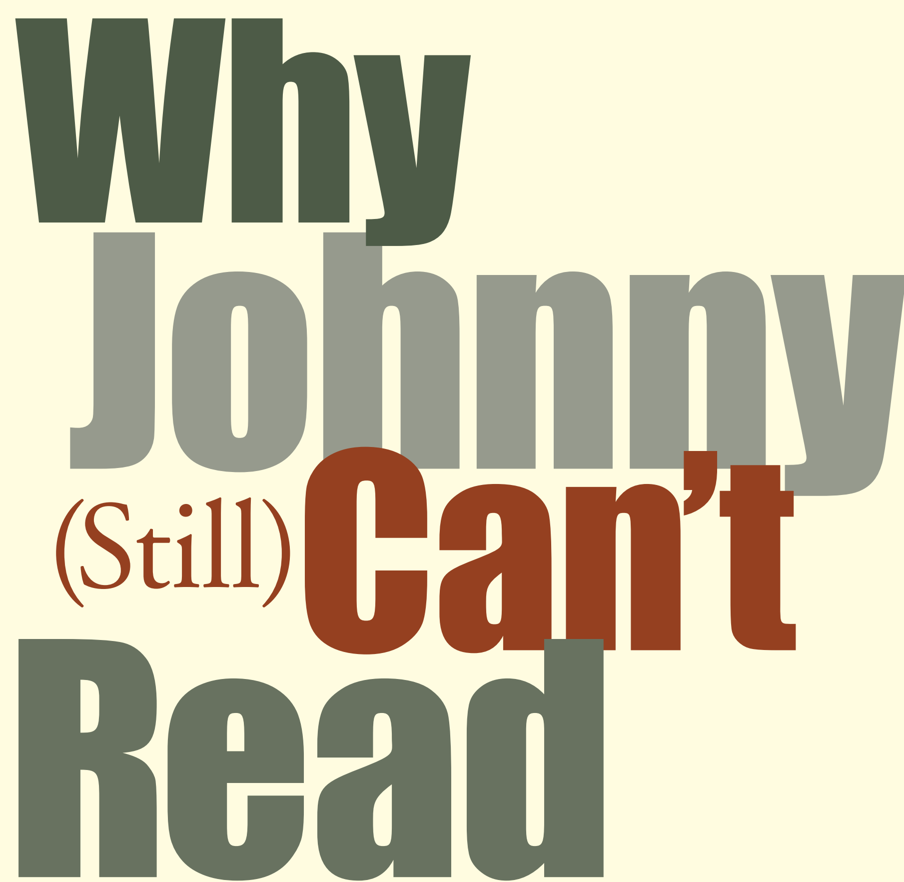

Why Johnny (Still) Can't Read

As reading skills falter, educators push to improve adolescent literacy.

By Carol Guensburg

Even as books take a back seat to technology, reading is more important than ever in an increasingly complicated, information-rich world. Basic literacy no longer suffices. In higher education and the workplace, young people must handle an array of complex texts—narratives, repair manuals, scholarly journals, maps, graphics, and more—across technologies. They need to evaluate, synthesize, and communicate effectively.

Unfortunately, more than 8 million U.S. students in grades 4–12 struggle to read, write, and comprehend adequately. Only three out of ten eighth graders read at or above grade level, according to the 2004 National Assessment of Educational Progress. Readers who fall significantly behind risk school and workplace failure. In 2003, only three-fourths of high school students graduated in four years, the National Center for Education Statistics reports; the previous year, just over half of African American and Hispanic students graduated at all.

Without a high school diploma, it's harder to make a decent salary. In 2004, for instance, high school dropouts earned a median $401 per week, compared with $916 for college graduates. A new report from the National Governors Association, "Reading to Achieve," estimates that deficits in basic skills cost as much as $16 billion annually in lost productivity and remedial costs.

"Older children still need instruction on what you would call the critical reading skills: how to attack text in different subject areas, draw inferences, and bring background knowl-

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edge to bear in ways that make sense," explains Peggy McCardle, who oversees the child development and behavioral branch of the National Institute of Child Health and Human Development (NICHD).

Every teacher, not just English and language arts instructors, plays a role in addressing the literacy needs of kids.

Further complications arise for the nation's 5 million K–12 students with limited English proficiency. They "represent enormous diversity in skills and histories," observes Catherine Snow, a professor and leading expert in literacy at the Harvard Graduate School of Education. Though some students may know English, she adds, others "arrive with high home-language literacy skills and no English, or with a history of failed and interrupted schooling and no English." Few middle schools and high schools are equipped to provide it.

Though the bulk of literacy investment has centered on young children, the quest for improved adolescent-literacy skills has gained ground, thanks to tougher state assessment standards and, significantly, the federal No Child Left Behind Act. By requiring disaggregated scores as part of accountability, the NCLB "forces us as an educational community to look at those who are struggling," Don Deshler, director of the University of Kansas Center for Research on Learning, says approvingly.

The NICHD, part of the National Institutes of Health, has partnered with the U.S. Department of Education to fund ongoing research, including providing grants to five adolescent-literacy experts to explore new ways of learning. Researchers already have determined some scientifically sound practices, summarized in "Reading Next: A Vision for Action and Research in Middle and High School Literacy," a pivotal report coauthored by Snow and released by the Alliance for Excellent Education in 2004. It's one of several recent guides aimed at rallying educators, policymakers, and other stakeholders around adolescent literacy.

"Reading Next" identifies fifteen key elements found in effective programs. Nine promote instructional improvements, such as strategic tutoring and intensive writing. The rest relate to infrastructure, including stronger leadership and extending time for literacy education. Though the elements can be used in different combinations, the authors say three are vital: ongoing assessment of students to immediately address individuals' needs, ongoing assessment of the program to test efficacy and inform research, and professional development.

"Basically, it says every teacher in a middle school or high school plays a role in addressing the literacy needs of kids," says Deshler, an adviser on the project.

HOT LINKS
For Web links offering more information about the report "Reading Next" and the Striving Readers program, go to www.edutopia.org/1446.

That's a new, and sometimes unwelcome, responsibility for subject-area teachers accustomed to leaving literacy instruction to the language arts faculty. Even English teachers may lack training in basic literacy instruction. Most colleges of education require only a single reading course for prospective teachers. To help current teachers improve instruction techniques, some schools are hiring literacy coaches (see "The New Drill," page 37).

Schools with more resources are using digital technology for literacy support. For example, interactive computer programs give students individualized lessons in vocabulary, while monitoring progress.

Deshler and other advocates of improved adolescent literacy praise the Bush administration's new Striving Readers program, which directed $25 million to support reading achievement in poor secondary schools in 2005. (Congress is expected to approve at least another $30 million for 2006.) They also note that its funding is dwarfed by the more than $1 billion in federal funding set aside for Reading First, established by the NCLB to provide comprehensive instruction in poor schools through third grade.

Thanks to Reading First and its precursor, the Reading Excellence Act, says Susan Frost, an education consultant and a former president of the Alliance for Excellent Education, "every K–3 teacher can receive the professional development necessary to teach reading well." As a result, she says, "we're seeing upward movement in fourth-grade" scores. That outcome, she adds, argues for more investment in students in grades 4–12—"most of our nation's students."

Bolstering adolescent-literacy rates takes resolve. Right now that's most pronounced at the state level, advocates say.

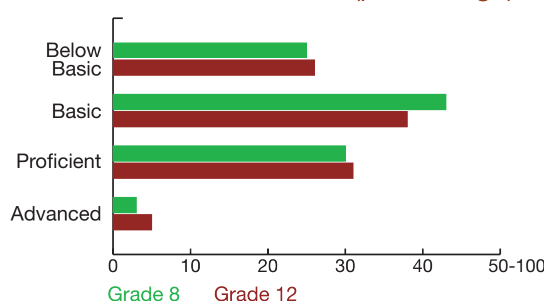
Two states stand out. The Alabama Reading Initiative began in 1998 to build K–12 literacy skills, though budget constraints limit the program to grades K–3. Just Read Florida followed in 2001; this year, the state will spend $99 million from its own coffers on efforts such as assessing K–12 students and dispatching 3,000 reading coaches to them. Other states have targeted their aid, perhaps requiring individual remediation plans for at-risk readers, says Ilene M. Berman, program director for education division of the National Governors Association's Center for Best Practices.

Former West Virginia governor Bob Wise, president of the nonprofit Alliance for Excellent Education since early 2005, says he wants to see every state developing a literacy policy for its secondary schools. "We want to emphasize this is a continuum," he says. It's about time.

Carol Guensburg is a freelance journalist and former founding director of the Journalism Fellowships in Child and Family Policy. She lives in Arlington, Virginia.

In 2002, the reading and writing assessments of the National Assessment of Educational Progress were administered to the nation's students in grades 8 and 12. The NAEP used the following achievement definitions (National Center for Education Statistics, 2003a, 2003b):

Below Basic—Achievement that is less than partial mastery.
Basic—Partial mastery of prerequisite knowledge and skills fundamental for proficient work at each grade.
Proficient—Solid academic performance for each grade assessed. Students reaching this level have demonstrated competency over challenging subject matter, including subject-matter knowledge, application of such knowledge to real-world situations, and analytical skills appropriate to the subject matter.
Advanced—Superior performance.



The New Drill

On-site coaches focus on teachers, not students, in the battle to boost literacy.

By Grace Rubenstein

Janet Fortier had her educational epiphany two years ago, when she started bumping into teachers with their arms full of easy reading assignments. "I'm running off articles because my kids can't read the textbook," they told her.

Fortier, who became a literacy specialist in the Beaverton School District, in Beaverton, Oregon, and coordinator of the district's coaching program, suddenly realized, "We can't move forward with anything, because literacy is the key to success in all their classes."

To halt the tide of students proceeding through secondary school with meager reading skills, Fortier encouraged district administrators to place a full-time literacy coach in each of the sprawling suburb's fifteen middle schools and high schools last fall. More than a dozen new paychecks might seem like a hefty investment, but Beaverton felt it was essential. Says Fortier, "We just can't lose any more kids."

Fortier and her colleagues in Beaverton's secondary schools are on the leading edge of a phenomenon that's gaining steam in secondary schools across the country: They are hiring reading specialists who coach teachers, not students. The coach's role varies from place to place, but the basic challenge is the same—students get little, if any, reading instruction from fourth grade on, though the texts and other content they're expected to absorb become more and more complex. Teachers who specialize in science, social studies, math, or literature are neither trained nor inclined to teach reading skills, so students hack their way through dense, conceptual texts alone. Learning suffers, and teens graduate from high school without the sophisticated literacy skills that are necessary to make a living in our high-tech, postindustrial world.

Students get little, if any, reading instruction from fourth grade on, though their texts become more and more complex.

Rather than shunt hundreds or thousands of adolescents into reading classes, a growing number of schools fill the gap in instruction more systemically. They're hiring literacy coaches to help content-area teachers—science and math wonks included—weave literacy instruction into everyday lessons.

At Beaverton's Sunset High School, coaches Robin Kobrowski and Tricia Hasbrook work one-on-one with a set of teachers for three weeks before rotating to the next group. They model strategies for teaching literacy skills, help create lesson plans, and visit classrooms to watch those plans in action and assess how well they work. They also organize staff-development workshops for the entire faculty.

Science teacher Greg Pillette's coaching session led him to try a new approach to reading assignments last fall. Before giving text to his freshman Science Inquiry students, he went over definitions of key terms they would encounter, such as "chemical reaction" and "the law of conservation of mass." As students paired up and tried to put the definitions in their own terms, Pillette circulated the room, encouraging them to use words that made sense to them and would help them remember the meaning. The "atoms, elements, or molecules" in a chemical reaction became "parts" or "stuff." Chemical "interaction" became "mix." To reinforce the lesson, Pillette asked the students to draw an image of each vocabulary word while they read at home.

It was a science course, not a literacy class, but the kids were practicing skills for successful reading.

With other teachers, the Sunset coaches have worked on note-taking techniques to pinpoint essential themes, self-questioning strategies to analyze the text, and a favorite weapon in the literacy coach's arsenal: "read aloud/think aloud." In the latter strategy—which Hasbrook admits has been difficult for some teachers to model—the instructor reads a passage aloud and comments on it. She might say, "I'm not sure what this word means, but maybe the definition is in the next sentence," or "This description of exothermic reactions reminds me of the time when I accidentally blew up my stove." The idea, Has-

Janet Fortier
Beaverton School District
secondary literacy specialist

GRACE RUBENSTEIN

Tricia Hasbrook
Sunset High School
literacy coach

brook says, is to "convince teachers that every kid in this building is a struggling reader."

Beaverton began its literacy coaching in elementary schools but expanded to upper grades partly because teachers for several years had seen their students reading less and struggling with comprehension, Fortier says. Facing comparable problems, other schools made the same choice. The State of Alabama, confronted with data showing that only one in three students could read at grade level, launched a massive reading initiative in 1998 with literacy coaches as a key component.

In 2004, Florida earmarked $16.7 million to provide coaches for more than two-thirds of the state's middle schools. Just last year, the Annenberg Foundation granted $31 million over three years to train new literacy and math coaches in Pennsylvania. And Market Data Retrieval, a Connecticut-based company that maintains educator registries, saw the number of people on its "literacy/reading coach" list shoot up to 2,237 in the first year after the category debuted in 2004. Of the coaches listed, 341 are at secondary schools.

The concept isn't as new as this flurry of investment would indicate. As early as the 1920s, literacy educators were recommending that middle school and high school teachers help their students with reading and study skills, says Elizabeth G. Sturtevant, associate professor and coordinator of the literacy program at George Mason University's graduate school of education.

Sturtevant wrote a 2003 report for the Alliance for Excellent Education advocating literacy coaches in secondary schools. Some reading specialists in decades past did help teachers, though many worked solely with students, she says; what's different about modern coaching is its primary focus on teaching teachers, not students.

The buzz began with the Reading Excellence Act of 1998 and grew in 2002 with Reading First, an offshoot of the No Child Left Behind Act, says Cathy Roller, director of research and policy at the International Reading Association and a contributor to the recently published IRA standards for secondary school literacy coaches. The two acts injected billions of dollars into primary literacy initiatives, and coaching became one of the most widely chosen uses for the federal money, Roller says. Now the idea is spreading into secondary schools.

NCLB-era vigilance about test scores also spotlighted the needs of adolescent readers, Sturtevant says. The concern isn't about simply reading words off a page, which Roller says almost all middle school and high school kids can do; it's about students deeply understanding what they read, and using reading to access complex information. If they can't do that, she notes, it's hard for them to succeed in any class.

From school to school, the role and qualifications of the person called the literacy coach or the reading coach varies widely. The key elements, the IRA standards say, are that coaches be skilled in both literacy instruction and working collaboratively with other adults. A critical piece, adds James M. McPartland, director of Johns Hopkins University's Center for the Social Organization of Schools, is that the coach be seen not as a part of the teacher-evaluation process, but as a "confidential colleague" who can be trusted.

"You need someone who understands middle school and high school teachers and is accepted by them," Sturtevant says. "Usually, that's someone who has been a middle school and high school teacher." Since people with all those traits are in short supply, many administrators—such as those in Beaverton and Alabama—are hiring seasoned, respected teachers and training them in literacy.

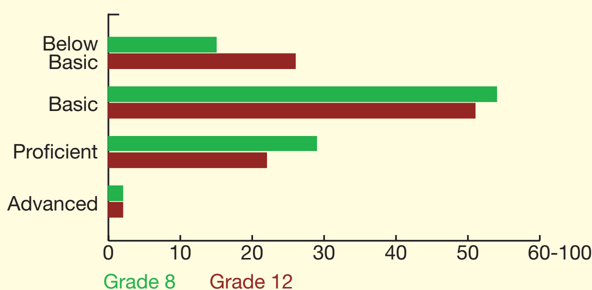
In Beaverton, educators found that implementing a coaching program can be bumpy, but worthwhile. "Suddenly, everybody understands what literacy is and what things need to be done to promote literacy," Fortier says.

Kristi Miller, a Sunset chemistry teacher, says that her work with Kobrowski helps her focus students on key points in her lessons, though it does take precious time to plan. She suspected kids would find some of the strategies—such as drawing pictures of a vocabulary word such as "slathering"—too silly or hokey, but they've gone along with it.

A major challenge lies in convincing more skeptical teachers to change methods they may have used for decades, literacy coaches say. The other big hurdle in coaching is cost. Having a coach means paying an additional full-time salary, typically at the same level as a teacher.

How much bang do schools get for that buck? The effectiveness of literacy coaches is largely untested, but the coaching model and the reading techniques being used are backed up by extensive research, say Roller, Sturtevant, and others. They cite multiple studies showing that drop-in staff development doesn't stick, while long-term training that's

2002 Writing-Achievement Levels in Grades 8 and 12 (percentage)



Note: Categories indicate the degree of mastery of prerequisite knowledge and skills fundamental for proficient work at each grade, according to the National Assessment of Educational Progress: Below Basic—Less than partial mastery; Basic—partial mastery; Proficient—solid performance; Advanced—superior performance.

In other words:

About **68 percent** of grade 8 students and **64 percent** of grade 12 students are reading below the proficient level.

About **69 percent** of grade 8 students and **77 percent** of grade 12 students are writing below the proficient level.

Less than **6 percent** of students in grades 8 and 12 performed at the advanced level in reading.

About **2 percent** of students in grades 8 and 12 performed at the advanced level in writing.

Source: National Center for Education Statistics, U.S. Department of Education

Robin Kobrowski
Sunset High School
literacy coach

GRACE RUBENSTEIN

embedded in a teacher's everyday work does. "This is not just some sort of harebrained scheme," Roller says. "It's based on good, solid research, and there's a lot of reason to believe that it will be effective."

It's still too early to see what broad effects the program may have at Sunset, where the coaches have worked with just a handful of the 120 or so teachers. But in Alabama, Melvina Phillips has a much longer perspective. The Walden University instructor was assistant principal and later principal at one of the first sixteen schools to join the state reading initiative. After a two-week summer training for the staff, Phillips recalls, "we came back to our school and we all had these huge notebooks filled with literacy strategies, and we all sort of looked at each other and said, 'Okay, now what?'" A well-liked language arts teacher started coaching half time, and the school adopted a block schedule and instituted yearlong language and math blocks.

Within two years, Phillips says, Stanford Achievement Test scores at Discovery Middle School, in Madison, Alabama, jumped 5 to 10 percentile points in reading, and more so in the content areas. The number of disciplinary actions dropped from 681 to 127 in the first year, and referrals to special education went down by more than 20 percent. When Phillips walked around the building, she saw students more engaged in class than before. Without coaching, she says, "we would have gone to that training that we attended over the summer and put those notebooks up on the shelf, and maybe used one or two of those strategies."

More broadly, schools participating in the reading initiative have outperformed other Alabama schools on standardized tests since the project began, state officials say. "We're seeing some eyes opened," says Reeda Betts, the initiative's reading specialist for secondary schools. "Our schools are slowly turning around and seeing that you can't teach the old way. They're also looking at their assessments more than they ever have. Teachers are beginning to get into each other's classrooms and talk about strategies."

Betts cautions, however, that the change is slow. "I have been in a school where you walk in a room, the projector light goes on, the overhead light goes off, students take notes for fifty minutes, and the bell rings," she says—and those habits are hard to break, especially with teachers struggling to cover the reams of content students must know for state tests.

For now, skeptical teachers have to take the promise of coaching, to some degree, on faith. McPartland, of Johns Hopkins, has one study under way with the National Institute of Child Health and Human Development. He's comparing teachers who receive training through a workshop alone, a workshop and printed lessons, or both methods plus a coach. The study has three years to go, but he says early observation suggests the coach is key. Despite the need for more research, McPartland and other advocates agree that they're sold on coaching.

McPartland's Talent Development High School model, adopted by eighty-five schools, includes targeted math and literacy programs with peer coaches. He has seen early evidence that the program can boost many students' reading by two grade levels a year and calls coaching "not just a nice add-on; it's fundamental for many teachers."

Phillips, now a consultant to the Alabama Reading Initiative, made coaching a key element in her report last October for the National Association of Secondary School Principals on creating a "culture of literacy." That's because in all the schools she's seen—and there are hundreds—those that have successfully targeted adolescent literacy used coaches as a crux of the program.

Phillips emphasizes, however, that coaching alone is no cure-all for secondary schools' woes. Successful schools must also modify their schedules and reserve more time for literacy instruction, she says. The Talent Development high schools beef up their English classes to ninety minutes a day.

"That's why I talk about a culture of literacy, because it's not one thing, but many things, coming together," Phillips says. "Coaches are an important piece, but just because you hire a coach doesn't mean things are going to change."

"We're trying to convince teachers that every kid in this building is a struggling reader."

Grace Rubenstein is a staff writer for Edutopia.

How-To: Reading-Comprehension Strategies for Adolescents

1. Brainstorming prior knowledge: The class collectively identifies what they already know about a topic before reading.

2. Vocabulary frontloading: The teacher goes over critical and difficult vocabulary before reading. Students may rephrase definitions in their own words.

3. Visual representation: Students draw images of key words or concepts.

4. Read aloud/think aloud: The teacher reads a passage aloud and pauses to explain her own thought processes while reading. Teacher modeling may be useful for other comprehension strategies as well.

5. Paired reading: Students read aloud, identify key points, and process the text together in pairs.

6. Leveled questioning: Students ask themselves questions about the text that require increasing levels of inference, from identifying basic facts to linking themes together to finding connections between the text and their real-world experiences.

7. Structured note taking: An example is Cornell Note-Taking, in which students divide a page into two columns, writing key words or questions in one column and the definitions or answers adjacently in another.

8. Using text structure: Students learn to take cues about themes or meaning from elements other than the text itself, such as chapter headings or illustrations.

9. Predicting: The class predicts what happens next in a story or what lesson comes next in an informational text.

10. Assessing the author's purpose: Students learn to identify fact versus opinion and identify what effect the author is trying to achieve.

11. Summarizing text: Students summarize the main points of what they've read.

12. Group discussion: This is most effective when framed around critical questions for comprehension, such as analyses of cause and effect or symbolism, rather than simply, "Did you like it?"

13. Self-selected reading: The teacher provides time for students to read text of their own choosing, selected from a library of material that is of high interest and appropriate to differing skill levels to avoid frustration. The purpose here is practice and fun.

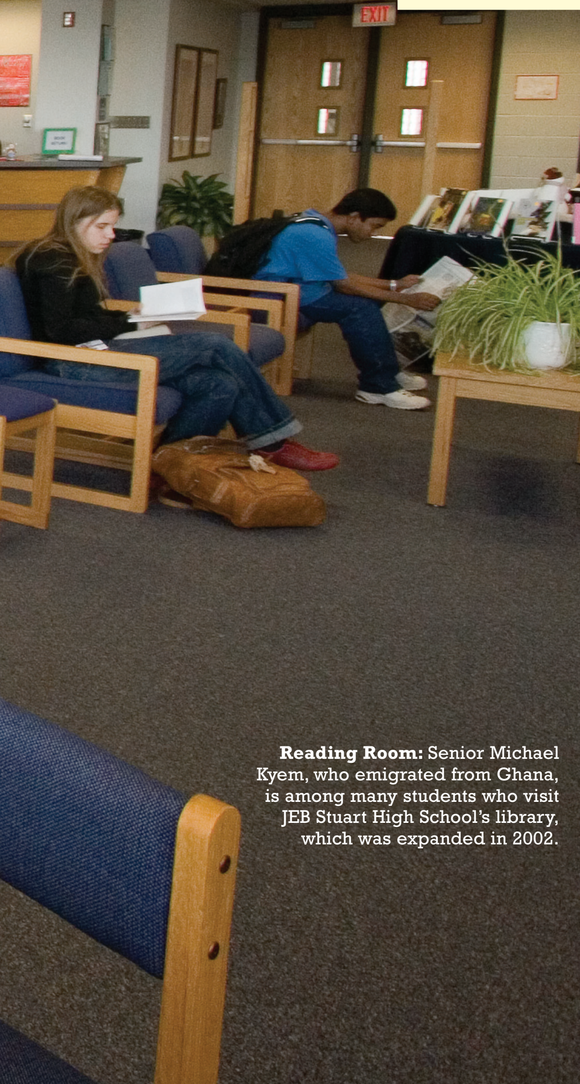
Sources: Janet Fortier, Robin Kobrowski, and Tricia Hasbrook of the Beaverton School District; Melvina Phillips of the Alabama Reading Initiative; and James M. McPartland of Johns Hopkins University.

Reading Rules

At JEB Stuart High, students can't wait to hit the books. How'd that happen?

WRITTEN BY CAROL GUENSBURG PHOTOGRAPHY BY DRAKE SOREY

Lead by Example: Once one of its district's poorest performing schools, JEB Stuart High School is now a standout, thanks to Principal Mel Riddile.



Reading Room: Senior Michael Kyem, who emigrated from Ghana, is among many students who visit JEB Stuart High School's library, which was expanded in 2002.

At JEB Stuart High School, in suburban Falls Church, Virginia, students keep library media specialist Amy Will scrambling to find research materials and new selections. "We had a hundred kids here this morning before 7:15," she reported one recent fall day. But it's a problem others might envy. The library—an inviting expanse with floor-to-ceiling windows, banks of computers, and 19,000 books—may be the most overt symbol of the school's commitment to literacy. "What we're doing is reading across the curriculum," Principal Mel Riddile says.

The focus on literacy, which permeates almost every corner of the building, from the biology lab to math classes to the chorus room, has helped transform Stuart—once ranked among its district's lowest performers on Virginia state exams—into an internationally recognized model of achievement. Banners tout awards from the International Center for Leadership in Education, the Education Trust, the Bill & Melinda Gates Foundation, and other organizations. Remarkably, just over half of the school's nearly 1,500 students come from low-income homes, and two-thirds speak English as a second language.

The most recent accolades came from the National Association of Secondary School Principals, which chose Riddile as 2006 Principal of the Year and named Stuart a Breakthrough High School in 2003. Executive Director Gerald N. Tirozzi praises Riddile for, he says, insisting "that all teachers teach reading. It's ultimately got to be leadership taking it on."

But team effort, a shared sense of responsibility, and an emphasis on assessment fueled Stuart's turnaround, Riddile and school personnel agree. As science chair Sherry Singer notes, "We're all extraordinarily aware of literacy here."

When Riddile arrived in 1997, he asked teachers to pinpoint the biggest obstacles to student achievement. They cited rampant absenteeism and poor reading skills: Kids missed an average of twenty-three days annually, and three-fourths of them read at least two years below grade level.

Increased vigilance and automated 6 A.M. wake-up calls pared the absentee rate to an average of seven days by 2003. Building literacy throughout the school involved a cultural shift, one that has boosted reading-proficiency scores on the Virginia Standards of Learning tests from 64 percent in 1998 to 94 percent in 2004.

Riddile started by hiring a literacy coach and amassing data. Each spring, the specialist administers the Gates-MacGintie reading test to eighth graders in its primary feeder school; those who score poorly also undergo individual screening. Though all freshmen take a required literacy course that includes online, individualized instruction, struggling readers get an additional course—taught by a literacy expert—for remediation on history, science, and other core subjects, and kids who need extra help receive tutoring. Stuart's A/B schedule—classes alternate from day to day, and most

class blocks are just over ninety minutes long—provides ample time for difficult subjects.

Student progress is closely monitored throughout the school. Academic success, Riddile says, "is not about the ability of our students. It's about our ability to teach them."

As a former social studies teacher, he understood some staffers' initial resistance to thinking of themselves as reading instructors, too. "We had new state standards, they had content to cover, and nobody ever taught them how to teach reading," Riddile says. But data convinced them they needed to adapt to students' learning styles.

Professional development began with a college course and continues within the school. Louise Winney, who succeeded Sandy Switzer as literacy coach this year, observes teachers in their classrooms, modeling strategies and offering discreet follow-up suggestions. She also conducts quarterly in-service training for all teachers new to Stuart, so they learn core strategies such as the text-comprehension exercise K-W-L (know, want, learn), which asks students to jot down what they know about a subject before reading, what they want to know as they read and discuss, and finally what they've learned or still want to learn.

Second-year math teacher Y. H. Sbaiti acknowledged at a December in-service that he at first "was hesitant to try. This year, I'm really doing more of the strategies. What really cemented this is, now I'm seeing progress" in students' grasp of concepts. As math chair Stuart Singer later said, "We've found a strong correlation between literacy and math. We don't spend our time exclusively with numbers."

Monthly faculty meetings provide staff development in different kinds of literacy. The music department led a program on dynamic markings, the Italian-based signs that indicate expression on a score. Colin McDaniel, who teaches an upper-level ESL English class, conducted a content-area lesson in Nepali—a by-product of his Peace Corps days—in a faculty meeting so colleagues could experience the challenges confronting English-language learners.

Screen Time: Individualized computer training in reading and language skills provides ongoing assessment.

Over the years, a common instructional language has emerged at JEB Stuart. "This gives students a structure," Winney says, adding that it creates consistency, essential for reluctant readers.

Even the coach gets coaching. Lillian Garrity, a literacy specialist in Fairfax County Public Schools' office of high school instruction, says the school district schedules training for literacy-class teachers at all grade levels as part of an intensified, systemwide literacy focus dating back at least five years.

Academic success is not about the ability of our students. It's about our ability to teach them.

To strengthen alignment, Riddile notes, JEB Stuart is "working with our feeder schools in the area of literacy." For example, once a month, ESL instructor Nancy Svendsen leads as many as forty-five student volunteers to nearby Bailey's Elementary School, where they read to kindergartners. A week in advance, the Raider Readers choose a picture book and polish their teaching techniques. One afternoon, junior Tony Truong practiced reading *Goldilocks and the Three Bears* to his friend, Rayhan Alam. Truong broke from the text to display an illustration and ask, "Which one is the little bear? Who do you think you'll see on the next page?" Han played along: "Maybe Goldilocks?"

Trickle-Down Theory: JEB Stuart junior Tony Truong is one of many volunteers who read to kindergartners at nearby Bailey's Elementary School.

The cognitive strategy of questioning helps "build a bridge from this book to that kid," explains Svendsen, who started the Raider Readers program about six years ago so her students could develop better reading, speaking, and leadership skills.

Spanish, Vietnamese, Somali, Chinese, Urdu, and other languages blend with English in JEB Stuart's halls. The student body is so diverse—41 percent Hispanic, 25 percent white, 21 percent Asian, 10 percent black, and 3 percent "other"—that *National Geographic* featured it as a microcosm of vibrantly changing U.S. society in a September 2001 article.

"We're very lucky, because we have good programs and teachers who have big expectations for the students," says Nelly Samaniego, liaison to the school's Hispanic Parent Teacher Student Association. She translates for teachers when they address the association, a subset of the larger PTSA. Samaniego, whose two children graduated from JEB Stuart, was recently named Virginia's PTA Volunteer of the Year.

At least 90 percent of JEB Stuart's graduates go on to postsecondary education, Riddile says. The nonprofit JEB Stuart Scholarship Foundation, spun off from the PTSA, awards $500 to $2,000 to up to thirty-five students a year. "Some of our kids are not here legally, so they can't get aid from government," career specialist Carol Kelley explains. "Even kids who are legal have trouble affording school."

Literacy and student achievement are frequent topics in *Doc's Docs*, Riddile's weekly newsletter to his staff. "It's an opportunity for me to recognize faculty and to focus on specific education issues," says Riddile, who has written more than 300 issues. "Most principals don't want to write and have a bunch of teachers grading. It was threatening, but I got over it."

Tech Teaches

Once thought to corrode reading skills, computers are a key tool in improving them.

By Grace Rubenstein

The transcript of a typical teenager's instant message correspondence—full of acronyms, symbols, and misspelled and partially spelled words—might bring despair to adults. How, asks the appalled reader, do we improve the literacy of adolescents bent on destroying it through technology?

The answer is surprising: Computers may represent TEOTWAWKI (that's "the end of the world as we know it," in the NetLingo.com dictionary) to the old-school observer, but those computers—and the technology that fuels them—also represent a new world of improved literacy, and not just literacy in the traditional sense. Technology promises to play a crucial role in helping adolescents cope with reading and writing deficits, at the same time teaching digital literacy, an essential skill in the world beyond school.

"There are all these new literacies that kids are engaging in that are in the workplace but haven't made their way into schools yet," says Bridget Dalton, chief officer of literacy and technology at CAST, a Massachusetts-based organization that creates educational technology for all kinds of learners. "We could create a new group of kids who have a literacy disability if we don't prepare them for working in these new environments." The International Reading Association goes so far in its position statement on technology to say students "have a right" to instruction that develops critical forms of literacy for using computers and the Web.

Despite what may appear to be grammar-busting drivel in instant messages and chat rooms, many education researchers report that the unfiltered chatter found online doesn't seriously threaten kids' literacy. Stanford University professor Michael L. Kamil, who researches literacy and technology, analyzed hundreds of random Web sites through a search engine and found that the text consistently hit an eleventh- or twelfth-grade reading level—nearly equal to that of the *New York Times,* on his scale.

Clemson University researcher David Reinking, a co-editor of *Reading Research Quarterly,* believes kids are reading more now because of the Internet's appeal. Overall, Kamil and others say, any drawbacks of computer technology are far outweighed by its potential for aiding struggling readers, engaging kids in their learning, and leveraging instructional time to target students' individual needs.

Because computers enable kids to access text through multiple media, such as image, audio and video, they can dynamically support students' reading and expose struggling readers to stimulating content that would be out of reach to them through print alone, says Dalton. Julie Coiro, a doctoral candidate at the University of Connecticut at Storrs, adds that the interactive nature of the Internet allows readers to choose their own pathways through information in personally relevant and interesting ways.

"The technology does bring in ways of leveling the playing field," Dalton says. "Sometimes it's the kid who's the struggling reader who

DRAKE SOREY

can actually thrive in this environment."

CAST has used software to boost students' development of reading skills. In one model, the software stops students periodically as they read and prompts them to deploy a comprehension strategy, such as summarizing the text, Dalton explains. The program, the basis for Thinking Reader software for struggling middle school readers, responds to students' individual skill levels and nudges them toward independence, giving less and less guidance over time.

The key benefits of computer-based reading lessons are simple: They help students practice reading at their own pace and give individualized instruction and immediate feedback—all when the teacher might be occupied helping other kids, Kamil says. For example, in a study Kamil published recently in *Threshold*, the magazine of Cable in the Classroom, Kamil assigned fourth- and fifth-grade students to read a multimedia lesson on coral reefs with or without an "adaptive agent." The agent, an animated hermit crab, gave lessons on tough vocabulary, asked questions to monitor comprehension, and modeled good reading strategies. Both groups made gains on multiple-choice questions before and after the test, but only the crab-assisted group improved on the short answer questions, which required more inference.

Computers also can engage students in a powerful way, broadening the opportunities to connect to a world outside school, says Mark Warschauer, professor of education and informatics at the University of California at Irvine. He tells the story of a fourth-grade teacher who, in a southern California school with many English-language learners, used Amazon.com in a literacy lesson. The exercise is detailed in Warschauer's upcoming book, *Laptops and Literacy*, from Teachers College Press. After reading *Sadako and the Thousand Paper Cranes*, by Eleanor Coerr, the class critiqued readers' reviews of the book on Amazon. Armed with those self-generated lessons about what makes a good review, the children wrote their own, submitted them to Amazon, and were delighted to see their work posted, Warschauer writes.

Another tool for engagement is WebQuest, a lesson model developed at California's San Diego State University in the mid-1990s in which students embark on a guided inquiry by way of the Internet, beginning with an open-ended problem and culminating in an original solution. Webquest.org archives more than 1,500 ideas for such projects, such as sleuthing Shakespeare's identity, planning a vacation through past and present Egypt, or briefing the UN secretary-general on the situation in sub-Saharan Africa.

Though these possibilities seem inspiring, research on the effectiveness of teaching literacy through computers is thin. A review of the research sponsored by the National Science Foundation in 2003 found that technology had marginal impact on reading performance. Yet author James A. Kulik, who produced the report for SRI International, wrote that the body of work was too patchy to draw sweeping conclusions. In contrast, a 2000 report from the National Reading Panel—a group of experts convened by Congress in 1997 to assess various reading-instruction methods—found generally positive results in the existing research and called for more study on the best uses of technology for teaching. The results of a $10 million study commissioned by the U.S. Department of Education to evaluate reading software are due out in April.

But researchers warn that educators should not focus simply on the ways that technology can teach traditional reading skills. What also needs to be investigated, they say, are ways to teach the sophisticated skills needed to navigate information and communication online.

Donald J. Leu, John and Maria Neag Endowed Chair of Literacy and Technology at the University of Connecticut at Storrs, says the process—and sometimes the purpose—of reading online can be profoundly different than those for reading print. To be digitally literate, Leu argues, students must identify an important problem or question, pinpoint information within an unchecked world of resources, critically evaluate material for bias and reliability, synthesize information from disparate texts, and effectively communicate through email, blogs, and other forums. Those aren't technology issues to be relegated to computer class, he says; those are literacy issues. Both books and computers are technologies for reading.

As Elizabeth Birr Moje, an Arthur F. Thurnau Professor of Educational Studies at the University of Michigan, sees it, the ultimate benefit of technology in teaching reading comes down to a simple maxim: It's all about how you use it. "The potential in technology is enormous; of course, there are lots of risks, too," says Moje.

Without proper supervision, explains Moje, some readers could become dependent on high-tech crutches to understand text. Or the vast scope of the Internet could habituate students to seeking breadth over depth of learning experience. That's no reason to fear computers in teaching or miss out on all they can provide.

"Sometimes it's the struggling reader who can actually thrive in this environment."

COOL LINKS FOR ONLINE LEARNING

BrainPOP: Contains more than 400 animated videos for K–12 kids on subjects ranging from the avian flu to the Harlem Renaissance to graphing linear equations. Videos highlight key vocabulary.

Children's Encyclopedia of Women: Written descriptions and photos of famous women through history, compiled and expanded every year by third and fourth graders at Pocantico Hills School, in Sleepy Hollow, New York.

ReadWriteThink: Provides various lesson plans for integrating Internet content into literacy lessons, with backing from the International Reading Association, the National Council of Teachers of English, and the MarcoPolo Education Foundation.

WebQuest: Archives more than 1,500 WebQuests for various subjects and grade levels, with user submissions and critiques.

Writer's Window: A space for older students to share and comment on writing and write collaborative stories.

For Web links to these sites, visit www.edutopia.org/1449.

Source: Julie Coiro, University of Connecticut at Storrs