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We need independent teacher unions to protect teachers’ rights, to sound the alarm against unwise policies, and to advocate on behalf of sound education policies.”

Continued inside: "Why Teacher Unions Are Good For Teachers—and the Public"

—Diane Ravitch

Distinguished Education Historian

Cultivating Solutions

How Teacher Unions Aid Educational Quality

PLUS:

• Cognitive Scientist:
Do Reading Comprehension
Strategies Work?

• Science Careers for the
“Why Study Science?” Crowd



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2 **Letters**

4 **Notebook**

6 **Why Teacher Unions Are Good for Teachers—and the Public**

By Diane Ravitch

Protecting teachers from ill-conceived instructional mandates, intolerable conditions, and poor compensation—these are all reasons why teacher unions were important 100 years ago, and remain so today, says this noted education historian.



9 **Protecting Academic Standards**

How My Union Makes It Possible

By Erich Martel

One teacher's story about how his union is backing his efforts to stop administrators' grade manipulation.

12 **Nurturing Teacher Knowledge**

How Union-Led Professional Development Is Raising Reading Achievement

By Neill S. Rosenfeld

In Toledo, the union and district have partnered to deliver research-based professional development to teachers and research-based curriculum and lessons to students.



16 **Toledo Teacher Union President: Partner When You Can, Fight When You Must**

Remediating the Teacher Experience Gap

26 **Recognize the Real Cause: It's Not Collective Bargaining**

By F. Howard Nelson

Collective bargaining is often assumed to cause teacher turnover in high-poverty schools. But new research shows that the transfer rate is lower in areas with extensive collective bargaining—and higher where there is no collective bargaining.



31 **Critics' Claims Have No Evidence**

27 **Cultivate the Right Solution: It's Attracting and Retaining Experienced Teachers**

By Lynn W. Gregory, Nancy Nevarez, and Alexandra T. Weinbaum

Through the Lead Teacher Project, negotiated between the New York City public schools and the United Federation of Teachers, schools in the South Bronx found a way to attract great teachers—and retain new ones.

34 **Bringing Experience to the South Bronx: A Parent's Story**

36 **Cultivating Solutions Through Bargaining**

39 **Ask the Cognitive Scientist**
Do Reading Comprehension Strategies Work?

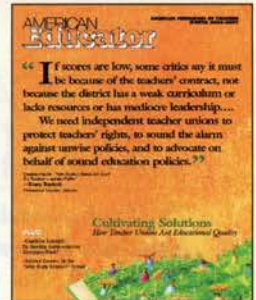
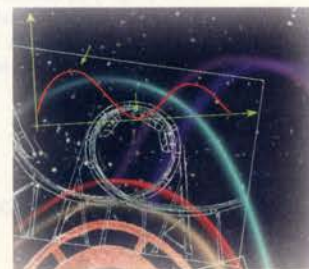
By Daniel T. Willingham

Once students can decode fluently, some brief instruction in reading comprehension strategies can boost their understanding. But the strategies shouldn't be overused because they don't substitute for the background knowledge and vocabulary necessary for comprehension.

46 **Science Careers for the "Why Study Science?" Crowd**

By Megan Sullivan and Steve Metz

Roller coaster designer? Scientific illustrator? Forensics technician? These careers all require knowledge of science. Could this handout inspire your students?



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mjklmk



“The Neglected Muse” Strikes the Right Note

In the article “The
Neglected Muse: Why
Music Is an Essential
Liberal Art” (*American Educator*,
Fall 2006), Peter Kalkavage does such
a great job of explaining the value of
the musical experience. As a singer,
I am in complete agreement with
Kalkavage, especially when he says
that “to sing is to transcend the isola-
tion and vagary of selfhood.”

Through artistic media, we are
given the opportunity to express our
deepest emotions, greatest desires, and
biggest fears. Our humanity takes
shape and is embodied in our creation
of artistic expression. Without art,
language, and music, we are machines,
capable merely of achieving the tasks
set out for us, but with no meaning or
value behind them.

It is art that allows us to make
meaning of our human experience. Art
connects us to each other and unites
us. And it is art that allows us to
express our deepest spiritual desires
and connect with others toward a
greater purpose in our lives.

Thank you for being such a wonder-



ful proponent of
music education for
our children.

—MARION WISE
Former English Teacher
New York, N.Y.

Thank you so much for
Peter Kalkavage’s article
on the value of music in forming and
improving the person, in its power to
make us truly more human. Every
“educator”—from parents to teachers
of every subject to principals—should
read and understand Mr. Kalkavage’s
ideas. His observations are important
not only for explaining the value of
music, but for understanding what it is
that makes an educated person, why
learning how to appreciate something
means that we are learning to “see”
something that is, objectively, there.

I would be happy to see more such
articles.

—LAURA ERWIN
St. Rose of Lima School
Haddon Heights, N.J.

“Brain-Based” Fads Don’t Help, but a Little Neuroscience Might

“Wish I’d said that” is my most fre-
quent response to Daniel Willing-

ham's cognitive scientist column, but his recent remarks about "brain-based" learning are exceptionally valuable ("Brain-Based" Learning: More Fiction than Fact, *American Educator*, Fall 2006). How many shouting matches I've had with colleagues on this subject!

I hope this column will be read by every American school administrator who is planning in-service training. This may help them choose trainers who avoid the simplistic view that brain structures and function are correlated one-to-one with mental functioning, and the equally untenable assumption that plasticity of development in the visual cortex means that all synaptic connections can easily be restructured, and the deceptive analogy created by using the term "hard-wired" in talking about the brain.

As a psychologist involved with infant and preschool mental health issues, I am especially concerned about the belief that mental health interventions directly change measur-

able aspects of the brain, and that treatments are desirable when a connection with brain functioning is possible. Both instructional and mental health interventions should be evaluated in terms of their behavioral outcomes, not in terms of a number of leaps of faith required to make connections between achievements and brain events.

—JEAN MERCER, PH.D.
*Professor Emerita
Richard Stockton College
Pomona, N.J.*

What an eye-opening article about popular myths in education. I am completely guilty of at least two. I play classical music in my classroom because I believe that it stimulates the brain and, therefore, will increase learning. I do indeed believe there are differences between how boys and girls learn. However, I believe these differences have more to do with the process of maturation and, therefore, adjustments in my instructional methods may not be needed.

I give Learning Styles and Multiple Intelligences surveys to my students in order to identify "how best they learn." I use this information as an instructional tool to design project choices for students and to give advice about how to study at home.

Although you have given me invaluable information, there are other reasons why teachers do some of the things you mention in your article. Many students study at home with either music or even the TV playing in the same room. It doesn't seem to distract them. It appears as though it creates a background that prevents other intermittent noises from pulling the student's attention from their work.

Of course, this is not true for all of students. If there is even one student in my classroom who is distracted by the music, I turn it off, amid the moans and sighs.

I have taken several classes in brain-compatible learning and you are absolutely correct in your assessment of what is being taught as fact. I was completely unaware that any of the research-based justifications emerged

from animal research. I also had not thought about how we as educators leap across the divide between neuroscience and cognitive development. Thanks for the lesson.

In my opinion, learning has more to do with the individual student's environment and gene pool. Teachers who personally care about their students and strive for professional excellence can, however, overcome environment and genetics to produce students who strive to do their personal best. What more can we ask of our children? As for me, I'm sincerely hoping to do better.

—CYNTHIA HINSON
*Valhalla Middle School
Valhalla, N.Y.*

Daniel Willingham's article carries some important warnings for general educators, and indeed exposes some learning myths. However, those who teach severely neurologically impaired students can benefit from an understanding of basic neurology. This knowledge does translate into classrooms with profoundly mentally and physically handicapped, severely autistic, and severely emotionally handicapped students.

For example, gaining knowledge of stereotypical, repetitive movement patterns common in many autistic learners enables teachers to better deal with them. An understanding of reflex arcs and flexion and extension synergies allows teachers to effectively position their students for best access to the curriculum. A special educator who has some understanding of conditions such as cortical blindness, nystagmus, vestibular dysfunction, muscle spasticity, dysphagia, and seizure disorders can consult effectively with specialists such as occupational, physical, vision, and speech therapists and will have more success in implementing modifications in instruction.

Although I'm not advocating advanced coursework in neuroscience, in the age of inclusive schools and therapists moving toward a "consult only" model, special needs teachers will benefit from a basic course.

—MELISSA MORGAN
*Magnolia School
Orlando, Fla.*

Let us know what you think!

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NOTEBOOK



Washington Post Editorial Argues for Greater Investment in Schools

Globalization and Schools It's time to recall Martin Luther King's challenge

Back in 1979, the average worker with a college degree earned 75 percent more than the average high school graduate. Because of technology and globalization, the gap has leapt to 130 percent. This rising "college premium" does much to explain the growth of inequality over the past generation, so any serious response to inequality must make access to college broader and fairer. It should be broader because a higher rate of college attendance would share the fruits of globalization more widely. It should be fairer because, if the prizes for attending college are growing, it's essential that everyone begin life with a decent shot at winning them.

Because education boosts economic growth, and because it threatens no powerful lobby, virtually everyone claims to support it. The question is how it should be improved. Some commentators, pointing to the fact that schools in low-income districts already spend more per pupil than schools in affluent ones do, argue that failures at poor schools reflect complacent management rather than a lack of resources. Signaling at least partial acceptance of that theory, the Bush

administration has tried to improve schools by holding them accountable and subjecting them to competition. Choice and accountability are attractive in principle, but studies of voucher programs in New York City, Milwaukee, and Cleveland have found negligible gains from them. Costlier interventions must also be part of the solution.

The first opportunity for extra investment in education comes when children are young. That's when they are most malleable and when poor children start to fall behind: Even at age 3, researchers find class-based differences in linguistic and emotional maturity. The federal Head Start program, bolstered by a variety of state preschool programs, has succeeded in reaching many poor 3- and 4-year-olds. In 2001, 49 percent of 4-year-olds whose mothers were high school dropouts attended some type of preschool program, up from 36 percent a decade earlier. But that participation was still way below the 70 percent rate for children of college graduates. And the quality of many preschool programs is poor.

Head Start requires that only half of its teachers have two-year college degrees. In contrast, a 1960s experi-

Although it's true that low-income districts already spend more per pupil than do rich ones, this slight advantage is swamped by the challenge of teaching poor children, who on average have more discipline problems and require more remedial attention.

ment in Michigan known as the Perry Preschool program provided a fully qualified teacher for every six or seven students, and teachers visited each child at home weekly. The program raised IQ test scores by eight to 10 times the increase achieved by Head Start. It also reduced the likelihood that a student would require special education (by 43 percent), drop out of high school (by 25 percent), or be arrested (by 50 percent). A range of other studies, including recent ones in

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Michigan and Chicago, confirms that high-quality programs have lasting effects on poor children. Upgrading the 900,000 children in Head Start programs to something like the Perry program might require around \$2 billion a year, according to W. Steven Barnett of Rutgers University. But quality preschools reduce spending on special education, jails and welfare, saving money for society in the long term.

Early intervention would help schools from kindergarten through 12th grade do their job properly, since teachers would face fewer students who can't keep up. But it also makes sense to invest in K-12 education directly. Although it's true that low-income districts already spend more per pupil than do rich ones, this slight advantage is swamped by the challenge of teaching poor children, who on average have more discipline problems and require more remedial attention—and will continue to do so even if preschool is improved. Because of the challenge of teaching poor children, the higher cost of special education and other factors, schools in low-income neighborhoods have less-experienced teachers and worse facilities than do schools in affluent ones, according to research by Cecilia Rouse of Princeton and Lisa Barrow of the

Federal Reserve. These schools might spend more money per pupil, but they lack more money per pupil, too.

Which K-12 investments would be effective? Smaller classes are a leading candidate: A Tennessee experiment that divided pupils into classes of differing size in kindergarten and then returned them to regular-size classes in third grade found benefits from smaller classes that persisted to high school. Improving the quality of teachers is also likely to boost performance, though teacher quality is not necessarily linked to teacher certification. Publicly funded summer school could make a difference. The performance gap between privileged and poor children appears to be linked to the way they spend their summers, with the privileged attending enrichment programs while the poor are underoccupied.

Nearly 30 years ago, Martin Luther King, Jr. declared that the challenge for schools is “to teach so well that family background is no longer an issue.” By increasing the rewards for education, globalization has added urgency to King's argument, but globalization paradoxically creates a temptation to ignore him, too. By driving down the cost of tradable goods such as cars and DVD players, it leaves untradable ones such as education

A higher rate of college attendance would share the fruits of globalization more widely. If the prizes for attending college are growing, it's essential that everyone begin life with a decent shot at winning them.

looking expensive. There's a tendency for policymakers to say that education spending is growing a bit faster than inflation—isn't that generous enough? But inflation is low partly because globalization brings us goods from cheap foreign suppliers. The economic challenge posed by those cheap foreign suppliers is precisely the reason we should invest more in our children.

Searching for a Comprehensive Reform Model? Skip the Sales Pitch, Now There's an Independent Review

If you've ever been on a school or district team charged with selecting a comprehensive school reform model, you know just how confusing it is: Slick brochures, flashy PowerPoint presentations, and anecdotes of success abound. There's some real research mixed in, but it sure is hard to find. Fortunately, the Comprehensive School Reform Quality (CSRQ) Center has done the digging for you.

In two new reports, one on elementary school models and one on middle- and high-school models, the CSRQ Center distills that heap of papers down to thorough, trustworthy, useful guides for educators and administrators who are seeking a comprehensive reform model. Both reports rate the models on their evidence of having produced gains in student achievement and four other criteria, including their services to schools to enable successful implementation.

Because the CSRQ Center holds the models to very high standards, no model has yet achieved the top rating, “very

strong,” on evidence of positive effects on student achievement. In the elementary school report, two of the 22 models reviewed came close: Direct Instruction and Success for All were rated as having “moderately strong” evidence. In the middle- and high-school report, the highest rating on evidence of positive effects on student achievement was “moderate”—and that went to just four of the 18 models reviewed: America's Choice, School Development Program, Success for All—Middle Grades, and Talent Development High School.

In both of these reports, the reader is asked to keep in mind that many of the models are aiming to turn around low-performing schools with high percentages of students from low-income homes. When these models do produce strong evidence of effectiveness, it means they've succeeded in very challenging conditions.

Where the models are very strong is in demonstrating that they offer professional development and technical assistance during implementation.

To read the CSRQ Center's reports, go to www.csrq.org/reports.asp.

Why Teacher Unions Are Good for Teachers—and the Public

They Protect Teachers' Rights, Support Teacher Professionalism, and Check Administrative Power

By Diane Ravitch

We live in an era when leaders in business and the media demand that schools function like businesses in a free market economy, competing for students and staff. Many such voices say that such corporate-style school reform is stymied by the teacher unions, which stand in the way of leaders who want unchecked power to assign, reward, punish, or remove their employees. Some academics blame the unions when student achievement remains stagnant. If scores are low, the critics say it must be because of the teachers' contract, not because the district has a weak curriculum or lacks resources or has mediocre leadership. If some teachers are incompetent, it must be because of the contract, not because the district has a flawed, bureaucratic hiring process or has failed to evaluate new teachers before awarding them tenure. These critics want to scrap the contract, throw away teachers' legal protections, and bring teacher unions to their collective knees.

It is worth recalling why teachers joined unions and why unions remain important today. Take tenure, for example. The teacher unions didn't invent tenure, despite widespread beliefs to the contrary. Tenure evolved in the 19th century as one of the few perks available to people who were paid low wages, had classes of 70 or 80 or more, and endured terrible working conditions. In late 19th century New York City, for example, there were no teacher unions, but there was already ironclad, de facto teacher tenure. Local school boards controlled the hiring of teachers, and the only way to get a job was to know someone on the local school board, preferably a relative. Once a teacher was hired, she had lifetime tenure in that school, but only in that school. In fact, she could teach in the same school until she

retired—without a pension or health benefits—or died.

One problem with this kind of tenure was that it was not portable. If a teacher changed schools, even in the same district, she would lose her tenure in the school where she was first hired, and she would have to go to the end of the line at her new school.

Pay for teaching was meager, but it was one of the few professional jobs open to women, and most teachers were women. Pay scales were blatantly discriminatory. Teachers in the high schools were paid more than those in the elementary schools. Male teachers (regardless of where they taught, though almost all were in high schools) were paid more than female teachers, on the assumption that they had a family to support and women did not.

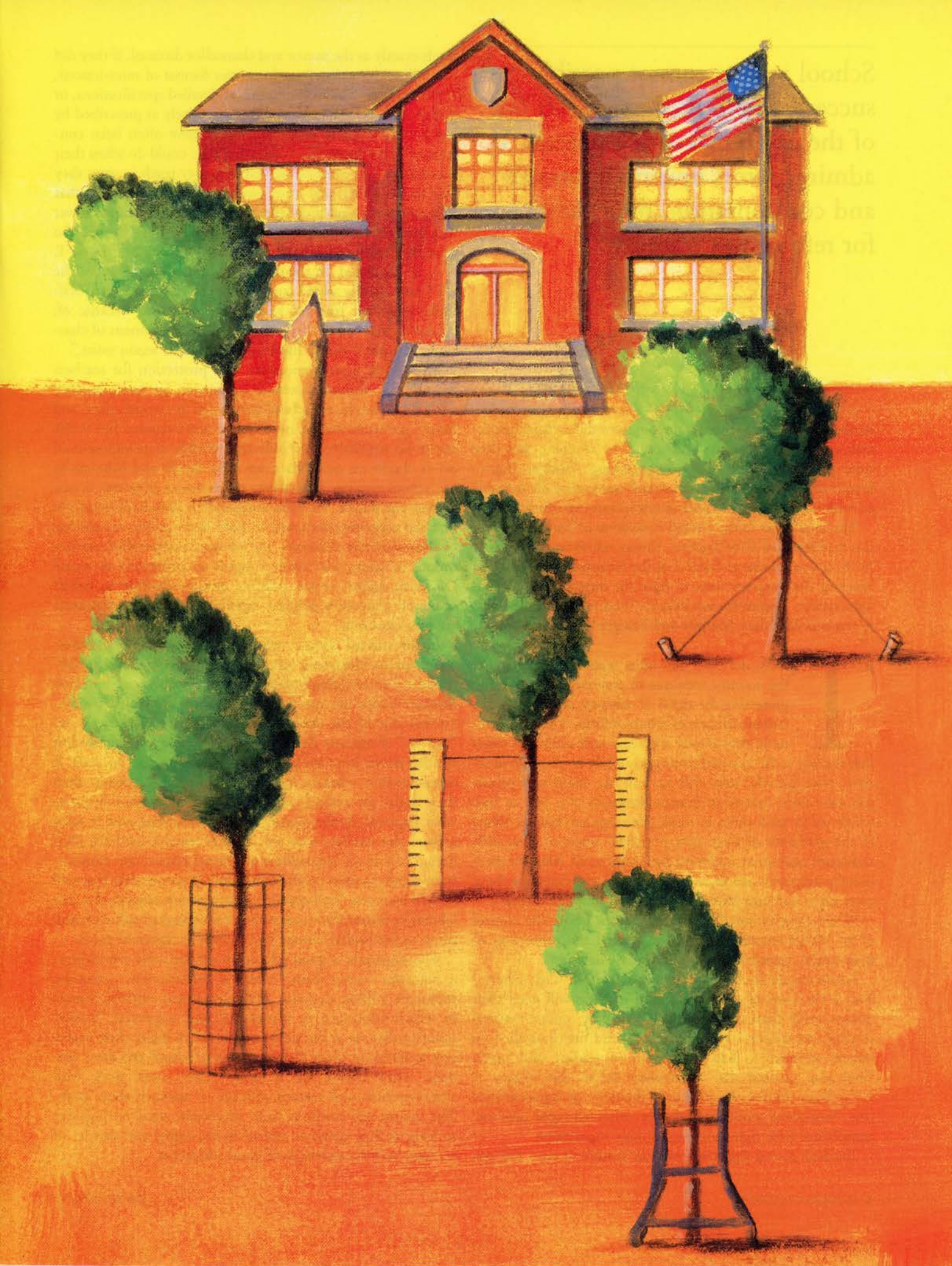
I would like to remember some of the forgotten heroes of the movement to establish fair and equitable treatment of teachers in New York City.

First, there was Mary Murphy. She started teaching in the Brooklyn schools in 1891. Ten years later, in 1901, she got married. That was a mistake. When she got married, the Board of Education charged her with gross misconduct and fired her. Teachers were not allowed to marry. She sued the Board. She lost in the lower court, but then won in the state court of appeals, which ruled that marriage "was not misconduct" and ordered the Board of Education to reinstate her.

Second, there was the Interborough Association of Women Teachers. They started a campaign in 1906 to wipe out the salary differentials between male and female teachers. Their slogan was "equal pay for equal work." When the state legislature passed the Association's bill for equal pay, it was vetoed by the governor. These stalwart female teachers finally won pay equity in 1912.

Then there was Bridget Pexitto, a veteran teacher of 18 years in the Bronx. She took advantage of the new right to get married without losing her job. But then she got pregnant. That was a mistake. The Board of Education fired her on charges of "gross negligence by being absent to have a baby." Not only that, the Board ordered the superintendent of schools to discover whether there were any other pregnant

*Diane Ravitch is Research Professor of Education at New York University and a senior fellow at the Hoover Institution at Stanford University and the Brookings Institution. She was Assistant Secretary of Education under President George H.W. Bush. Her latest book is *The English Reader: What Every Literate Person Needs to Know*, which she edited with her son Michael, Oxford University Press.*



School reform cannot possibly succeed when teachers are left out of the decision-making process. If administrators operate by stealth and confrontation, then their plans for reform will founder.

teachers in the city's schools. He somehow did a visual inspection of the city's teachers and found 14 of them, and they were promptly suspended from teaching. Bridget Pexitto fought the decision in state court and was eventually reinstated with back pay by the state commissioner of education.

The forerunner to the United Federation of Teachers (UFT) was the New York City Teachers' Union, which was founded in 1916. It was known as Local 2 of the American Federation of Teachers. Its purposes were to fight for improved salaries, to fight against "oppressive supervision," and to defend the rights of teachers like Mary Murphy and Bridget Pexitto.

Today, the UFT and other teacher unions around the country continue to play important roles in protecting the rights of teachers, especially in the current climate of school reform. There's a common view among corporate-style reformers today that the way to fix low-performing schools is to install an autocratic principal who rules with an iron fist. Many new principals have been trained in quickie programs of a year or less, which try to teach them to think like corporate leaders. Many of the graduates of these new principal programs have little classroom experience, and some have none at all. Many of them lack the judgment and knowledge to make wise decisions about curriculum and instruction or to evaluate seasoned teachers.

When experienced teachers must work under the control of an inexperienced principal, they need the protection of their union against arbitrary and unwise decisions.

Furthermore, to the extent that New York City, where I live, is the wave of the future, then teachers will need their unions more than ever. In New York City, under mayoral control, the mayor—a businessman—and his chancellor—a lawyer—selected a new curriculum in reading and math. They also insisted that all teachers across this system of 1.1 million children adopt exactly the same pedagogical style (the "workshop model"), and they micromanaged teachers' compliance with tight, sometimes daily supervision.

Teachers found that they were in trouble if they did not

teach exactly as the mayor and chancellor dictated, if they did not follow the scripted cookie-cutter format of mini-lessons, if their bulletin boards did not meet detailed specifications, or if their classroom furniture was not precisely as prescribed by regulation. In these past few years, I have often been confronted by teachers who asked what they could do when their supervisors and coaches insisted that they teach in ways they (the teachers) believed were wrong. I could only answer that they should be glad they belonged to a union with the power to protect them from "oppressive supervision," to use the term that was familiar to the founders of Local 2 of the AFT.

As it happened, in the contract negotiations of 2005, the UFT successfully added language to the contract that specifically protected teachers from being punished because of: "a) the format of bulletin boards; b) the arrangement of classroom furniture; and c) the exact duration of lesson units."

The union is thus necessary as a protection for teachers against the arbitrary exercise of power by heavy-handed administrators. In our school systems, as in our city, state, and federal governments, we need checks and balances. Just as the executive, legislative, and judicial branches of government all act as checks on each other, we need checks and balances in our school systems. It is unwise to centralize all power in one person: the mayor. We need independent lay school boards to hire the superintendent and to hold open public discussions of administrative decisions, and we need independent teacher unions to assure that teachers' rights are protected, to sound the alarm against unwise policies, and to advocate on behalf of sound education policies, especially when administrators are non-educators.

In the current climate, when it is in vogue to select non-educators to administer school systems, it is vital that teachers have a voice. School reform cannot possibly succeed when teachers—who are on the frontlines of implementation—are left out of the decision-making process. If there is no "buy-in," if teachers do not willingly concur with the orders handed down from on high, then reform cannot succeed. If administrators operate by stealth and confrontation, then their plans for reform will founder. They cannot improve what happens in the classroom by humiliating and bossing around the teachers who are in daily contact with the children. Only in an atmosphere of mutual respect can administrators and teachers produce the kind of partnership that will benefit students. And administrators cannot achieve this collaborative atmosphere unless they are willing to talk with and listen to the leaders chosen by teachers to represent them.

The essentials of good education are the same everywhere: a rigorous curriculum, effective instruction, adequate resources, willing students, and a social and cultural climate in which education is encouraged and respected. Teacher unions today, as in the past, must work to make these essentials available in every district for every school and every student. They cannot do it alone. They must work with administrators and elected officials to advance these goals. The unions will continue to be important, vital, and needed so long as they speak on behalf of the rights and dignity of teachers and the essentials of good education. □

Protecting Academic Standards

How My Union Makes It Possible

By Erich Martel

Seeing a student who has just failed a required class walk across the stage on graduation day is a degrading experience that a teacher never forgets. It is compounded when one then discovers that the principal had secretly approved both “erasing” the failing grade and altering the student’s official records to make it appear legitimate. Such an act sabotages the integrity of a high school diploma and unravels bonds of teacher-administrator trust.

Those were my thoughts in June 2001, when a student who had just failed my Advanced Placement (AP) U.S. History class confidently walked across the stage in her graduation gown—the same morning that she handed me a long overdue, plagiarized research paper, and angrily demanded that I raise her low *F* to a *D*.

How did this happen? The assistant principal in charge of senior class grades readily admitted his decision to “average” her *F* from my yearlong AP class with a *C+* she had earned in a one-semester American History course taken two years earlier at an American international school in Ethiopia. He further entered a year’s worth of passing grades from an entirely fictional American History class (Section 00!) that she had never taken. The new result: a final grade of *D+*. He later told the *Washington Post*, “We’re talking about the day before graduation. That’s the only thing the child needed to graduate. I thought I was doing the right thing.”*

According to the agreement between my union, the Washington Teachers’ Union (AFT Local 6), and my district, the District of Columbia Public Schools (DCPS), the process of chang-

ing a grade requires that the teacher be informed and given an opportunity to “substantiate the grade given”; and further, “in no case shall a grade be changed by the Board,” unless the teacher fails to provide such substantiation. I was never given that opportunity. Fortunately, the language of the collective bargaining contract, together with a sharp and aggressive union building representative, made it possible for me to challenge the assistant principal’s action.

Following graduation, my union building representative and I met with the principal and assistant principal to demand that the grade I reported be entered in the student’s records, the fictitious course be removed, and the student’s diploma and transcript be placed on hold pending successful completion of a legitimate U.S. History course, for which there was still time to enroll in summer school.

Although I was led to believe that all of our demands were met, I soon learned that she was not attending summer school and had received a diploma anyway. In exchange for doing an “assignment,” the assistant principal released the diploma to the student. I notified the principal, who was shocked and unaware. He requested the return of the diploma, but he refused to require valid completion of a full U.S. History course as a condition for releasing the student’s transcript. Instead, he tried to pressure me and the department chair into allowing the student to receive a “packet of assignments” for course credit. The union building rep and I disagreed, but appeals to the principal’s superiors were met with silence. The assistant principal, it was later reported, was “disciplined”—and promoted to principal of an elementary

One teacher vividly recalled the disrespect he felt when a student who rarely attended class tauntingly informed him that the assistant principal just changed her *F* to a *D*.

school! (Many months later, I saw the student’s transcript. The fictitious U.S. History course was gone; along with the final grade of *F* for my AP U.S. History course, the principal had entered: “Summer, 2001—completed requirements for graduation. Not ranked.”)

A couple months later, in August 2001, the principal, surprisingly, gave all Wilson High School teachers read-only access to the Student Information System (SIS), the electronic records database. I checked on a few of my former students whose records I suspected had been altered. Sure enough, they had been. A few other teachers asked me to check some of their grades. I found over a dozen grades that had been changed without teacher authorization.

Over the next several months, I spoke with over 60 of my teacher colleagues. Not one of them asked me *not* to look at their class lists. Instead, most expressed appreciation that, at last, someone was showing respect for their grading decisions by asking them whether they had authorized the ques-

Erich Martel continues to teach modern world history at Woodrow Wilson High School in Washington, D.C.

* Justin Blum (2002). “Changes In Grades Found at Top School: Teacher’s Discovery Prompts D.C. Inquiry,” *Washington Post*, June 9, 2002, C.01.

tionable grade changes. Some told of demanding parents who successfully pressured administrators into raising grades. One vividly recalled the disrespect he felt when a student who had rarely attended class tauntingly informed him that the assistant principal had just changed her *F* to a *D*. Another teacher learned for the first time that an administrator had yielded to a parent's demand that a generously awarded *D* be changed to "Passing" so as to boost the student's grade point average and class rank.

Just the Tip of the Iceberg

Like most teachers, I thought that changing a teacher's grade without following challenge rules was the main procedural way in which the integrity of teacher grades and the sanctity of the diploma were being undermined. I was wrong. As my familiarity with these student records grew, I became aware of an entirely new category of previously unknown violations: awarding credits that hadn't been legitimately earned. Among the ways in which students received these phantom credits were: 1) adding courses to the transcript that were never taken; 2) altering transcripts from previous schools by, for example, boosting grades, inflating credits, changing course titles, and pretending like a course was on the transcript; and 3) allowing students to earn more credit by giving credit two or more times for the same course, giving full-year credit for a semester course, and giving credit for clearly bogus "independent studies" courses. Quite a few students received a diploma despite never having passed or even taken a required course.

Based on my own informal, but thorough, review of 300 students' records, mainly from the class of 2001, but also from 2002, I found 202 inappropriate alterations and requirements not fulfilled. These resulted in 92 students being certified as eligible to receive a diploma despite missing requirements.

I wondered: Why were these alterations happening? How were missing requirements not being noticed? The answer was obvious and shocking: The

I wondered: Why were these alterations happening? Then it struck me: Why respond to teachers' requests for an orderly school or for more trained reading teachers when the numbers of graduates can be so easily fixed?

principal doesn't want them to be noticed, nor does the superintendent, nor do most Board of Education members. Then it struck me: This is how a dysfunctional school hides its failure to educate the majority of its students! Why respond to teachers' requests for an orderly school or for more trained reading teachers when the numbers of graduates can be so easily fixed? If this is happening at Wilson, an acclaimed public high school in Washington, D.C., what does that say about what's happening at other schools?

In early May 2002, I wrote up my findings for a report to the principal and the superintendent and requested that the school and district records accurately report the credits that each student had actually earned. On the advice of an attorney from the Government Accountability Project who represents whistleblowers, I labeled my reports "protected disclo-

tures," citing my statutory obligation under the 1998 Whistleblower Act. As expected, rather than welcome my report, the principal denied me further access to student records and threatened disciplinary action. I received no response from the superintendent. At that point, I reported my findings and the principal's response to *Washington Post* reporter Justin Blum and announced my decision in a letter to the faculty. I was overwhelmed by the support I received from my colleagues. Although reluctant to see the school portrayed in a negative light, most saw that the only other option was to let a Wilson High School diploma become a meaningless piece of paper.

The *Washington Post* article appeared on June 9, 2002, two days before graduation. DCPS's response was far from adequate, but it did contract with an accounting firm, Gardiner Kamy and Associates (GKA), to conduct a review of the records of the 15 Class of 2002 students I had questioned as well as a sampling of records and records-management procedures in all 16 DCPS high schools.

The GKA report was completed in September 2003, but not released until December 2003, following the resignation of the then-superintendent, a close friend of Wilson High School's principal. The examiners affirmed my conclusions regarding 12 of the 15 Class of 2002 graduates I had cited. They also found records management in disarray in almost every high school, suggesting in many cases that tampering could have occurred without being verifiable.

The Significance of the Diploma

The high school diploma, like final course grades, is a summary of performance that attests to the student's successful completion of all supporting standards. A student who receives an unearned diploma has learned all the wrong lessons—and will carry a false sense of "how to get ahead" into adulthood. He will also have a false sense of readiness for higher education or the workplace.

For our high-achieving students, the diploma is often a momentary symbol, soon replaced by a college degree. But

for our most vulnerable and disadvantaged students, for whom the diploma is their only educational credential, its prestige is critical. If a diploma is based on counterfeit grades and fabricated course completions, it will become like a debased currency, with less and less value in the eyes of the community and prospective employers, further dimming these students' chances in life.

The assumption that school administrators are disinterested custodians of student records who can be trusted to protect their integrity fails to recognize their interest in maximizing the number of graduates. In a time of heightened concern over graduation rates, principals have no incentive to ensure that each diploma candidate has met all graduation requirements. Shielded by confidentiality laws and their administrative authority, the tendency to not look too hard for missing requirements faces few restraints.

Five Years Later, Nothing Has Changed

In late March 2006, in an effort to ensure the integrity of the Wilson High School diploma, the Wilson High School union chapter requested that the principal provide the staff with a list of prospective graduates and a list of potential failed classes. When he didn't respond, the chapter asked teachers to submit a list of seniors in danger of failing. Forty-seven teachers, virtually every teacher of seniors, responded with a total of 227 names, which were compiled and submitted to the principal, assistant principals, and counselors. The list was ignored.

It was against this backdrop that I reviewed the records of the class of 2006. The very first transcript showed an inflated credit for a semester math course; then, one or two transcripts later, repeat credit for a course. These were the same violations I had reported in 2002. For days after classes, I reviewed the transcripts and several other supporting documents. The numbers were staggering—I found dozens of examples of credit being given twice for one course, course credits being inflated, required courses never being scheduled, students trans-

Without the union contract, I would not have a foundation for opposing the mismanagement that stands in the way of improving my school and increasing the value of its diploma.

ferred from failing classes to night school without notifying their teachers, and other serious violations.

In the first two weeks of June, I sent the principal and the superintendent reports on the problems with the transcripts and credits earned of over 180 seniors from the Class of 2006. Unfortunately, I was not surprised when I saw that 90 of those students were on the "official" list of diploma recipients sent to the Board of Education after graduation. At most, a handful of these students could have legitimately completed the requirements necessary to earn a diploma. The rest were clearly given diplomas they did not earn. Five of those "official" graduates are currently enrolled in Wilson High School and another student actually received two diplomas: one from Wilson High School and one from another high school in Washington, D.C.

Although the school system has yet

to address this ongoing disregard for academic standards, one important and hopeful development was the decision of the Office of the Inspector General (OIG) of the District of Columbia to audit the records of my high school's Class of 2006. It is a hopeful sign: Because the OIG is independent of the D.C. public schools, it will post the audit results on its Web site and will use the audit results as a guide for auditing other DCPS and charter high schools.

For all my efforts to restore the meaning and value of the Wilson High School diploma, I've been, in essence, demoted. On August 17th, a week prior to returning to school, I discovered that the principal had taken the three sections of Advanced Placement U.S. History that I had successfully taught for 19 years and transferred them to an uncertified teacher who never taught the subject before. Despite the efforts of the Washington Teachers' Union President George Parker, as well as e-mails from former students, their parents, and my colleagues, the superintendent has yet to rectify the situation. This type of retaliation does not hurt me so much as the students who were looking forward to taking my AP U.S. History classes. Having served as a grader of AP U.S. History essays for the College Board for nine years, I have in-depth knowledge of what students must do to perform well on the exam. For their sake, for my own, and for the lesson in integrity that it might teach my principal, I look forward to teaching AP U.S. History again soon.

As teachers, our professional responsibilities begin with helping our students meet challenging academic standards. Without the union contract, and especially the building representative and rules for grade changes that the contract gives me, I would not have a foundation for opposing the mismanagement that stands in the way of improving my school and increasing the value of its diploma. The union and the contract allow teachers to be agents of accountability and to be professionals in the service of educational integrity.

Nurturing Teacher Knowledge

How and Why Union-Led Professional Development Is Raising Reading Achievement

By Neill S. Rosenfeld

It's spring 2006 and third-grader Bryonna McAlister is in tears. She has failed the state's reading test. In a typical district, she would face two bleak options: either being retained in the hope that a second dose of third grade would be more effective than the first or being socially promoted and spending 4th grade—and possibly the rest of her academic career—struggling to catch up. But Bryonna has a better option—a research-based, highly effective summer school designed for students just like her. It's one of several programs offered by Toledo's Reading Academy, which was formed six years ago when the Toledo Federation of Teachers (TFT) teamed up with the school district to improve literacy. Today, the Reading Academy provides everything from professional development for teachers to summer school to intensive interventions for students in elementary and junior high school.

It took a lot of hard work to get to this point. As the 20th century drew to a close, the Toledo school district—an urban system with more than 50 schools—was in trouble. Ohio had imposed a fourth-grade reading guarantee, meaning that no child could move to the fifth grade without being proficient in reading. For the first time, the state was holding schools accountable for student achievement.

“We doubled the amount of time spent on reading, tried to bring in tutoring programs, but nothing was having any effect,” recalls Peter Silverman, who at that time was president of the school board. “We started to look at the curriculum.”

Neill S. Rosenfeld is a freelance writer. For 18 years, he was deputy director and later director of the United Federation of Teachers' Communications Department.

Fortunately, TFT President Francine Lawrence knew where to look for the right curriculum and how to start implementing it. “We wanted to identify accomplished teachers who could work well with one another and provide their colleagues with state-of-the-art, scientifically-based research,” she says. So she turned to the American Federation of Teachers' Educational Research and Dissemination (ER&D) program, a research-based professional development program that offers courses such as Instructional Strategies That Work, Managing Antisocial Behavior, and—just what Toledo needed—Beginning Reading Instruction and Reading Comprehension Instruction.

TFT and the Toledo school district had a long history of partnering to improve instruction and student achievement. Back in 1981, for example, they forged a groundbreaking labor-management agreement that gave Toledo's teachers (not principals) the primary responsibility for mentoring and evaluating their first-year peers and, in certain circumstances, veteran teachers who were struggling to do their jobs well. So, Lawrence and then-Superintendent Merrill Grant quickly agreed to give AFT's ER&D a try; when Eugene Sanders became superintendent in September 2000, his team continued support of the initiative.

ER&D's approach to reading instruction is the same as that endorsed by the National Reading Panel (2000). The Panel, formed at the direction of Congress by the National Institute of Child Health and Human Development in consultation with the Secretary of Education, spent more than two years reviewing research on reading instruction and holding hearings around the country. It found that effective reading instruction focuses on the following five components:





Above, literacy support teacher Joyce Lawniczak (right) gives feedback to a special education teacher on “Word Building,” an instructional strategy that improves students’ decoding and word recognition. Right, a teacher in a Reading Academy school delivers targeted instruction by meeting with a small group of students. Photographs © Lori King.



- **Phonemic awareness.** With this foundational skill, children learn to identify, segment, and manipulate phonemes (the smallest speech sounds capable of delineating a distinction in meaning).
- **Phonics.** Students focus on the correspondence between letters and sounds, learning how to blend individual sound-spellings into whole words, and how to decode multisyllabic words.
- **Fluency.** As students become more adept at decoding words, they need to develop automaticity (that is, the ability to recognize words accurately and quickly) so that they can read phrases and sentences with comprehension.
- **Vocabulary.** Explicit vocabulary teaching, along with oral and written exposure to a variety of words, helps students expand their knowledge of the language, which is essential to understanding texts.
- **Comprehension.** That, of course, is the reason for reading. It requires students to learn strategies that keep them focused

on understanding the text, but more importantly, it requires building students’ vocabulary, proficiency with language, and background knowledge.

ER&D’s courses in reading present a synthesis of this research and then explain the most effective strategies for applying it to the classroom.

Shortly before Toledo’s cash-strapped board of education faced up to its looming reading crisis, it had invested in instructional materials that short-changed the reading skills that the National Reading Panel defined as essential. Says Craig Cotner, who was at that time Toledo’s chief academic officer, “Our reading scores were dropping off a cliff. All you had to do was put the scores on a chalkboard and people would say this isn’t a one-year blip; it’s a definite downward trend. It became evident to everybody that we needed to do something differently.”

He says the district had struggled with how to effectively use its resources. Traditional approaches—such as bringing people in for three-hour professional development sessions on reading—“didn’t get us where I wanted to go, which was to increase the capacity within our district to provide quality instruction to our staff in how to teach reading, not to rely on outside presenters who may or may not bring their own agenda to the table.”

In July 1999, the district and union started down a new path. Three teachers, selected by their peers, flew to Virginia for the ER&D training that would prepare them to launch the Reading Academy in September 2000; with scientifically based knowledge in hand, their goal was to deliver intensive, ongoing professional development in research-based reading instruction to their colleagues. Over the years, the Reading Academy—not a building, but a professional development program—has grown to include six literacy support teachers who are released full-time from the classroom to work with district teachers.

“ER&D training was the defining moment” for reading instruction in Toledo, says Georgianne Czerniak, one of the Reading Academy’s first three literacy support teachers, all of whom have since trained an ever-growing number of teachers in ER&D’s approach to reading instruction. “That’s when the tide started to turn.”

Denise Johnson, a literacy support teacher with the Reading Academy, recalls a pivotal presentation that Czerniak gave to the school board's curriculum committee. She took her time explaining the drawbacks of both phonics-only and the district's unsuccessful reading program, which de-emphasized phonics and all the other skills recommended by the National Reading Panel. She then turned to the research and the five principles that the National Reading Panel had endorsed. As Johnson remembers it, then-board President Silverman said, "Now, I finally understand what's missing."

Delivering Support Where It Is Most Needed

"We need *all*," a first-grade teacher says to her class of 13 students. She is leading her class through a phonics lesson called "Word Building" that is part of the district's new, research-based reading program.

Dressed in the district's uniform of white or blue shirts and tan or black slacks, the children have spread out their reading mats—blue fabric with rows of clear plastic sleeves into which they can place letter cards. Their hands begin moving the three cards that are needed from their storage places on the top row. Their teacher bought the mats with her own money last year and has just enough for this class.

"How come some of the letters are red?" one boy asks.

"We talked about that. Do you remember?" she responds.

"Oh, vowels," the boy recalls.

"Does everyone have the word? Sound it out."

"*Aw-ull*," the class says in unison.

"Blend it quickly," the teacher says.

"*All*."

"Then put a *B* in the front and what do you have? Sound it out."

"*Bub-aw-ull. Ball*."

The boy observes, "You could put a *D* and make it *dall*."

The teacher lets that slide as she asks the class to change the beginning letter to a *T*, then an *H*, then an *M*. She has them leave the *M* and adds an *S* in front of it. "*SSS-mmm-aw-ull. Small*."

These first-graders, most of whom come from low-income homes, are in a Reading Academy school, meaning that 80 percent of the eligible teachers voted to participate in the Reading Academy's intensive professional development, committing themselves to learning and using the ER&D approach. This creates a critical mass of teachers who have chosen to change how they teach reading and to support one another. (Czerniak notes, however, that teachers who vote "no" are not required to participate. "We want to bring people with us who want to change," she says. "It's difficult to work with people who resist change." Sometimes, after the reluctant teachers see the results, they also seek ER&D training.)

After the vote to become a Reading Academy school, the teachers enrolled as a group in the "university cohort" program, in which they worked toward an 18-credit reading endorsement to their Ohio state teaching license. It's offered through a partnership with the University of Findlay, whose

The district and union started down a new path. Three teachers, selected by their peers, flew to Virginia for the ER&D training that would prepare them to launch the Reading Academy.

professors co-teach the courses with Reading Academy literacy support teachers. A Reading Academy coach also conducts weekly one-hour discussions where cohort members talk about what's going well and figure out solutions to difficulties. In exchange for all this extra work, the school system pays the teachers' tuition, and teachers who earn the reading endorsement as part of, or in addition to, having earned a master's degree, receive an additional \$3,010 a year. Along with the Reading Academy, the university cohort program began in the 2000-2001 school year.

Not long ago, there were 10 Reading Academy schools—all with the most disadvantaged students and the most struggling readers. However, three of them have since closed, two because of declining enrollment, the other because of poor physical conditions. Unfortunately, the Academy-trained teachers from the schools that closed were scattered among other buildings in the district; most are no longer part of a

(Continued on page 19)

Partner When You Can, Fight When You Must

Francine Lawrence, president of the Toledo Federation of Teachers (TFT), spoke with me about the union's continual—and often successful—struggle to forge a working partnership with the school district. Results include the Reading Academy and the landmark 1981 Toledo Plan for assisting and evaluating first-year teachers and, if necessary, dismissing teachers for unsatisfactory performance. This conversation occurred on Election Day 2006 amid chronic deficits; a school board divided since the 2005 election; and the departure last spring of the superintendent and a dozen top deputies, which left an inexperienced caretaker administration in charge. Lawrence is also the chairperson of the AFT's preK-12 Teachers Program and Policy Council.

—Neill S. Rosenfeld

Neill Rosenfeld: Administrations and school boards come and go, while the union remains. How has the TFT used that fact of life?

Francine Lawrence: Typically there's a void of leadership and ideas from management. The union and the teachers we represent have the opportunity to fill that void and to lead with ideas. The best ideas come from our teachers and the elected leadership of the union about what can effectively make schools work. Any type of school reform initiative will only succeed if there is ownership by teachers, and ownership only comes when teachers are at the table.

Over the last three or four decades, we've used collective bargaining to get teachers a seat at the table. We've done that contract after contract, because any genuine profession has a meaningful influence over entrance standards, professional development, and who remains in the profession—and we negotiated those elements for our teachers in Toledo. Our vision has been building a genuine profession for teachers and more effective schools for our students.

Rosenfeld: How did those principles

Our scores began to improve and teachers were not only willing participants in professional development and peer coaching, but were asking for it. Schools where it didn't exist were asking for it.

play out with the Reading Academy, an idea that arose after a previous proposal to create a professional development laboratory school fell through?

Lawrence: There were many differences between the union and the district's mid-level management, which wanted the dominant role in the professional development school to be played by them rather than having the teachers be the primary leadership. Real professionals don't look to those outside their profession for leadership. Doctors don't do it; neither should teachers. We were about two and a half days away from a strike when a settlement was reached in March 1998. The superintendent, Merrill Grant, and I didn't communicate for several months following this contentious period. But toward the end of his tenure, he made a decision to establish a relationship with our union. The thaw in relations opened the door for discussions that led to our Reading Academy.

I was able to convince then-Chief Academic Officer Craig Cotner to give us an opportunity to initiate research-based professional development. The initiative sold itself and management invested more financially and gave more authority to the teachers as a result.

We started small and demonstrated results; ultimately, a report developed by us really guided the literacy initiatives in our district. Our scores began to improve and teachers were not only willing participants in professional development and peer coaching, but were asking for it. Schools where it didn't exist were asking for it. Here, when the union says there's a better way, our members pay attention.

Once we had a breakthrough and the administration saw that the empowerment of teachers led to their willingness to take responsibility for results, they became a willing partner. They realized that school improvement comes through genuine labor-management collaboration. Otherwise it's imposed by management and resisted by those who teach in the classroom. For example, curriculum specialists in management's ranks try to design professional development in English, or other areas, that is not meaningful to instructional practice. Teachers don't respond positively and stop attending.

As I look back, so many of our initiatives have depended on the credibility of the teachers involved. Our three teachers who, in 1999, were sent to the AFT for ER&D reading training are not only great teachers, they have that something extra that enables them to work effectively with other adults. They have credibility with our members and inspire the trust of management.

Rosenfeld: You negotiated additional pay for teachers who have earned both a reading endorsement to their state license and a master's degree.

Lawrence: Yes, \$3,010 additional



Toledo Federation of Teachers President Francine Lawrence.

compensation is added to their salary step on top of the master's lane in the salary schedule. And it's not just for those with the state reading endorsement, but for anyone who earns a "master's-in-field." It's a master's degree in a liberal arts subject-specific discipline, exclusive of a graduate degree in education. The reading endorsement qualifies an elementary teacher to receive the master's-in-field differential. We also have master's-in-field pay for early childhood, K, 1, and 2.

Rosenfeld: Has TFT's involvement in educational issues strengthened the union?

Lawrence: No question. We've brought in many people through our professional issues focus. We have a constituency within our union leadership that is focused on school reform.

However, a significant part of our union's success with our membership has been by maintaining our traditional adversarial role. Because management is often incompetent, we

We also need to pursue issues on behalf of our members—like getting people paid on time and taking care of abuses in working and learning conditions, such as insufficient curriculum materials and supplies, or the administration's failure to enforce the district's student discipline code or provide a safe working environment.

need to pursue issues on behalf of our members—like getting people paid on time and taking care of abuses that happen in working and learning conditions, such as insufficient curriculum materials and supplies, or the administration's failure to enforce the district's student discipline code or provide a safe working environment. But it is also important to get beyond the adversarial relationship. We always hope for collaboration, but I'm not hesitant to criticize the school board or the superintendent if I need to, and members see that.

Rosenfeld: What is the union looking for in a new superintendent?

Lawrence: Tomorrow morning I'll be interviewed by a search firm on the qualities I think the new superintendent should possess. I'm taking a few of our elected leaders along. The attributes will add up to a profile that no man or woman can fulfill, but here's our vision: Someone who advances teaching and learning. Someone who views teachers as instructional leaders and will support teacher instructional leadership. Someone who believes in and will enforce high academic standards. Someone who believes in competence for all employees and will apply that to the

highest management people, just as we do for our own colleagues. Management doesn't take care of its own incompetent people. That sends a message throughout the district. High standards for performance need to begin at the top levels of management.

We're looking for a superintendent who doesn't think that top-down management is the model to employ, who is collaborative, because that has been an important ingredient to our success, and who understands and values good labor-management relations. Those aren't typical attributes of many superintendent candidates.

Once someone is selected, you need to build a relationship around trust, and then a partnership is formed. Most superintendents would love to have a union that aspires to what our union does and one that is a willing collaborative partner.

Rosenfeld: For you, and the leaders of other locals around the country, what are the stakes in finding a good superintendent and a good board, and building strong, collaborative relationships with them?

Lawrence: If we, as teacher union presidents, don't provide leadership for student achievement, not only do our public schools fail, but we will fail as a union. If our students don't succeed, public schools won't succeed.

ER&D: Twenty-Five Years of Union-Sponsored, Research-Based Professional Development

The American Federation of Teachers' Educational Research and Dissemination (ER&D) program provides research-based professional development to local unions, thereby building their capacity to deliver high-quality professional development, either on their own or in collaboration with their school district.

The AFT has long recognized that a knowledge base grounded in research is essential to professional practice. ER&D was created in 1981 to encourage classroom educators (both teachers and paraprofessionals) to improve their practice and their students' performance by becoming users of research. Beginning with a single course delivered to teachers in three pilot sites, the program now offers 12 courses through a train-the-trainer model—

in more than 200 locals across the country.

ER&D represents one of the union's major efforts to improve student achievement by making a difference in practitioners' performance and professional growth. ER&D meets the criteria for "high quality professional development" as defined in the No Child Left Behind Act of 2001.

In many places, ER&D is offered for continuing education units to earn salary increments or meet state requirements for license renewal. In some sites, ER&D courses are offered in collaboration with a nearby university, allowing members to earn undergraduate or graduate credits through ER&D.

Teachers have long been subjected to inservice sessions that are offered sporadically, based on the latest education fad, and often delivered by "outside experts"—the type of staff development that typically has little impact on classroom practice. ER&D, on the other hand, offers a focused, coherent program of professional development that is delivered by local practitioners and provides ongoing support.

ER&D is unique because it:

- provides solid, research-based content;
- is created and delivered by classroom teachers and school personnel;
- is an ongoing process, rather than an inservice event;
- offers a nonthreatening, non-judgmental learning environment;
- provides opportunities for thoughtful discussion about teaching, learning, and implementing instructional strategies among colleagues and researchers that result in real change in practice;
- encourages professional

growth; and,

- builds pride in the union's commitment to quality.

All of the courses offered by ER&D have two main components: research translations and classroom-based activities. *Research translations* are the basis for all ER&D courses. The AFT collaborates with leading researchers in the field of education to synthesize reliable findings on best practice and translate them into a user-friendly format that connects the research to its applications in the real world of classrooms and schools. *Classroom-based activities* help participants connect the research findings to their daily work. ER&D classes model strategies that research finds provide the most effective adult learning experiences. These activities include small group interaction, role-play, case studies, simulations, Socratic seminars, and shared reflection.

ER&D currently offers the following 12 courses:

- Foundations of Effective Teaching I: Organizing the Classroom Environment for Teaching and Learning
- Foundations of Effective Teaching II: Building Academic Success
- Beginning Reading Instruction
- Reading Comprehension Instruction
- Thinking Math 1: Foundations
- Thinking Math 2: Extensions
- Thinking Math 3: Connections
- Instructional Strategies That Work
- The School-Home Connection: Partnerships Supporting Student Learning
- Managing Antisocial Behavior
- Managing Student Behavior (for Support Staff)
- Delivering Effective Professional Development

For more information about the ER&D program, please send an e-mail to er inquiries@aft.org.



(Continued from page 15)

team that takes this collegial, research-based approach to reading instruction. Thus far, student achievement in the seven remaining Reading Academy schools has been mixed, demonstrating just how hard it is to turn-around low-performing schools. But the Reading Academy's literacy support teachers remain confident that they are heading down the right path because of the spectacular results they have had using the same research-based approach to reading instruction in summer school.

Launching Summer School

With the university cohort program and the Reading Academy schools, the Reading Academy was off to a strong start, but things really got rolling in 2002.

Lending a hand was Marsha Berger, who had just retired to Ohio after 11 years in the AFT's Educational Issues Department, where she had coordinated the national union's reading initiative; for the prior 28 years, she taught in Rhode Island. Lawrence sought her help while developing the Reading Academy idea, and then, in 2002, Chief Academic Officer Cotner hired her as a literacy consultant at the union's urging. Berger had the expertise to adapt the ER&D program to fit the specific needs of Toledo's students, so she coordinated the effort to develop a targeted intervention for the struggling readers.

When the Reading Academy began in September 2000, one of the main concerns was how to make good on Ohio's reading guarantee—and, more importantly, to make sure that students like Bryonna were ready for the next grade. The union and the district decided to launch a summer school specifically for the fourth-graders who had failed the state reading test in March. By developing an intensive, reading-only program that extended right up until the test was given in the summer, they hoped to enable as many students as possible to go on to fifth grade. For those students who were too far behind to catch up during summer school, the intervention still provided needed remediation, prevented summer learning loss, and gave them a better chance of succeeding when they repeated fourth grade.

Greatly increasing students' ability to read in such a short period of time would be quite a challenge. The Reading Academy knew that in order to properly support the teachers, they would have to provide small classes, a detailed curriculum, and ongoing professional development.

"Rather than a usual [summer] program, which the district had and is typical in most districts—where teachers are hired for summer school and are given some minimal materials and are left pretty much on their own about what to teach—we saw our summer school as an intervention program," Berger says. The Reading Academy put together "a structured, formal curriculum.... We gave them some very specific materials we had identified for students who needed that intervention." In addition, they limited class size to 15 students—and typically, there are just 10 to 12 students per class.

Before summer school begins each year, the Reading Acad-

The union and the district decided to launch a summer school specifically for the fourth-graders who had failed the state reading test in March.

emy provides teachers with four paid days of professional development. They study the curriculum, materials, instructional strategies such as "Reciprocal Teaching," and methods such as "Word Building" and "Syllasearch," in which students learn to look for parts of words. Then, during the summer school, Reading Academy literacy support teachers conduct demonstration lessons, model how to implement strategies, and coach teachers. They also conduct weekly meetings where teachers can share their experiences and reflect upon their practice.

The Reading Academy team wrote a six-week daily curriculum, complete with materials and directions on how best to teach them. (The program has since been reduced to five weeks because the state pushed back the date of the summer test, but by teaching five days a week instead of four, it still has the same number of instructional hours.)

The Reading Academy's summer lesson plans are detailed, with instructional materials, a framework for what is to be covered each day, and suggested questions that teachers can ask throughout each lesson. These are far from the word-for-word scripts that some programs require teachers to follow verbatim. Literacy support teacher Lynn Taylor, one of the Reading Academy's first three literacy support teachers, made this distinction concerning a program she had taught in: "We were given literal questions. You weren't supposed to deviate one iota from the framework. Our [Reading Academy] ques-

Reading Academy literacy support teachers continually visit classrooms and chat informally with teachers, gathering ideas for making lessons more effective.



Above, Georgianne Czerniak, a literacy support teacher (left), discusses lesson planning with a second-grade teacher in a Reading Academy school who recently started using literacy centers in her classroom. Left, a second-grader in a Reading Academy school works on his fluency. His teacher just modeled fluent reading of a passage for him; now he is rereading the passage while his teacher provides support and feedback. Photographs © Lori King.

tions are more conceptual.”

One important difference between the detailed summer school lesson plans and a scripted, published reading program is that the summer school teachers have a great deal of input into developing the lessons. As part of the weekly meetings with Reading Academy literacy support teachers, classroom teachers discuss their concerns and share their ideas for how best to teach the material. In addition, Reading Academy literacy support teachers continually visit classrooms and chat informally with teachers, gathering ideas for making lessons more effective. According to Czerniak, one big change that teachers suggested was redoing the framework to place some key comprehension-building work earlier in the day so it wouldn't get squeezed out.

In 2002, the first year of the summer school, 50 percent of the students passed the state's reading test when they retook it at the end of the summer program. The next year, the passing rate rose to 68 percent. Then, in 2004, Ohio switched to

a third-grade reading guarantee. Reading Academy literacy support teachers rewrote the summer curriculum to accommodate younger children; 64 percent passed. In 2005, the passing rate rose to 80 percent. This past summer, 73 percent of students passed, with 31 percent scoring at the basic level, 25 percent rated proficient, and 16 percent scoring accelerated or advanced.

“I've heard principals say they must be cheating when they hear that 73 percent passed,” says Ralph Schade, Toledo's acting director of curriculum and, until August, an elementary school principal who coordinated the summer program. “I say, just sit in on the training. It is very intense and targeted. The proof is in the results.”

By the summer of 2006, the buzz about summer school had spread. It drew some proficient students whose parents wanted them to keep studying and even attracted students from charter schools, which do not provide anything like this instruction. In addition, the district decided to encourage

second-graders who were having difficulty to participate.

Elaine Burton, an elementary school principal, praises the summer school. "I've noticed that my second-graders have a better understanding going into third grade because they were given strategies to help them understand," Burton says. "The Syllasearch helps them learn how to look at vocabulary words. That's a skill they can carry into fourth, fifth, and sixth grades. If I had any say, all classroom teachers would be able to have this training to enhance their reading [instruction] skills."

So what happened to third-grader Bryonna McAlister, who had broken down in tears when told she had failed the spring reading test? Summer school provided just what she needed. She says proudly that when she took the test in July, "My teacher said I got the second-highest score. The teacher was very nice. She taught us easier ways to read." Her score rose from 351, at the limited level, to 408, proficient.

Her mother, Yvonne McAlister, said that after this summer, "She's reading a lot better. She always did her homework, but from second to third grade is a big step. They go from 10 spelling words to 20; the books go from small paperbacks to one-inch books, and it scares the kids." She said Bryonna was very emotional last spring when she found out she hadn't passed the reading test. "It was sad. I don't like to see my baby cry. But the first day of summer [school] this year she was happy."

Now, in fourth grade, Bryonna is getting *As* and *Bs*. Her mother said, "She had a big smile on her face when she brought me her progress report. She is more confident. She didn't miss a day [last summer]. She just wanted to come to school."

Ten-year-old Julio Sifuentes, another fourth-grader, soared from 382, limited, to 417, beyond proficient to accelerated, as a result of summer school. "I was having trouble reading. There were a lot of hard words I had to sound out, but in summer school they helped me," he says. "Now my reading is good. I got an *A* on it. I read any kind of books—*Goosebumps* books, I like them, and one of my favorite books is *Charlotte's Web*."

Julio comes from a family with three older brothers, two of whom are married. His parents, immigrants from Mexico, have difficulty with English and he often acts as translator both at home and in school for his principal.

When he's there, Julio's brother Hector helps him with reading. "I have two little sons of my own, and a lot of times on our visits to my mother's home I'd see he wasn't comprehending well," Hector Sifuentes says. "He would get really annoyed because he felt he wasn't smart enough. I saw his report card and he was struggling, but after summer school it's like day and night in reading and English."

"You don't say I want an engine but not the tires because I have another set of tires in the garage. The more at-risk the student population, the more necessity there is to give the teachers all the tools."

—Former Chief Academic Officer
Craig Cotner



Reading Academy Ideas Go Districtwide

Improving instructional strategies only goes so far. Teachers need books and other materials in order to effectively teach their classes, but, as the Reading Academy got under way, Toledo was still stuck with its ineffective reading program. It was time for the district to adopt a reading program that was rooted in scientific research.

A teacher-majority committee that included all of the Reading Academy literacy support teachers searched for new research-based textbooks and unanimously chose the Harcourt *Trophies* series. "They sold us on a complete package," then-board President Silverman says. "We were persuaded and voted millions of dollars to make it the centerpiece of our curriculum reform. It's probably the smartest thing we did as a board. We concluded that to really change a public education system, the first thing you needed to commit to was reading. And you needed to commit to it 100 percent. If you compromise on reading, trying to change other things doesn't make sense."

Racing a budget deadline in the spring of 2003, Silverman pushed through an amendment to adopt the new textbooks.

For example, many of the teachers who participated in the university cohort are now tutors and summer school teachers. That leads to really powerful instruction for the district's neediest students.

For financial reasons, the district started with kindergarten and grades 1 and 2 and committed to adding one grade a year up to grade 6 (they're now up to grade 5). The exception was in the schools identified for improvement, which got the entire K-6 set of books right away.

The board made the expensive decision to buy every component of the textbook package. Cotner likened it to buying a car. "You don't say I want an engine but not the tires because I have another set of tires in the garage. The more at-risk the student population, the more necessity there is to give the teachers all the tools. Our populations are very heterogeneous from a developmental standpoint, so making sure teachers have all the materials and ongoing professional development on how to use them is critical," he says.

"The advantage of having one series for everyone is that we have a very transient student body," Czerniak says. "Now, everybody in every school is using the same materials and has access to the components that are most effective in getting children to read." (Actually, the faculty in one elementary school chose to stick with its Direct Instruction program, and two others decided to keep Success for All in the early grades and then use the new district program as soon as children are able to read at the second-grade level. Having schools use different programs is not ideal given the high level of student



Second-graders in a Reading Academy school are engaged in Paired Reading, an instructional strategy that improves fluency. These students are taking turns reading a passage to each other while their teacher monitors their reading. Photograph © Lori King.

mobility, but unlike the other programs that schools abandoned, these two are in line with the National Reading Panel's findings.)

The Reading Academy's Lynn Taylor mentions another plus: Previously, dedicated teachers used to supplement reading series out of their own pockets, which not only routinely shifted educational costs to them, but also created inequalities among classrooms. "Now every teacher is given the same things and it is so much that they don't have to add anything," she says. Of course, some teachers still purchase extras with their own money—but these really are extras, not essential instructional materials.

Speaking of the new program, Czerniak says, "We finally

have a reading program that meets the needs of all of our students. Gone are the days when teachers have to go scrounging for supplemental materials." In addition, with one program for the whole district, the Reading Academy teachers are able to expand upon the professional development offered by the program's publisher.

To reach out to more students across the district, the Reading Academy decided to seize the opportunity provided by the supplemental educational services provision of the No Child Left Behind Act. NCLB requires that tutoring (which in the law's jargon is called supplemental educational services, or SES) be offered to students at Title I schools that are in their second year or later of "school improvement" status, as long as the youngsters qualify for a free or reduced-priced lunch.

The Reading Academy crew put together a 12-week-long tutoring program called ACE (Achieving Content Excellence) that the Toledo Public Schools offers each term. Tutoring sessions last 90 minutes, two days a week, and they deliver the same type of intensive intervention that is offered in the summer school. ACE is now the largest of the 50-plus providers of supplemental educational services, last year drawing 264 of the 757 students participating citywide.

If you ask elementary school principal Romulus Durant, there's no comparison between ACE and the other providers. "ACE is by far the best. It's the most effective and it's research-based." About 160 of his students are in ACE.

Durant is a principal who wants results and tracks the progress of individual students on a large marker board in his office. His 680 students fall into every category that must be followed for determining adequate yearly progress under NCLB, and 98 percent live in poverty.

He runs through the sales pitch he gives parents: ACE tutors are all Toledo public school teachers who are specially trained for this job. The Reading Academy provides them with ongoing lesson plans. It's impressive to see the time the teachers put in and the student-to-student dialogue they encourage. Besides, he adds, the students don't have to travel because they are already in school, where the instruction takes place.

Durant laughs when he talks about the providers that offer gimmicks like free computers to draw in students. "I get calls saying, 'Mr. Durant, my computer isn't working,' and I say, 'I tried to tell you.' These are outdated computers that can't handle modern software. So I tell them, 'For next year, you may want to change to ACE.'"

Spinning a Comprehensive Web of Supports

The Reading Academy reaches out to teachers and students in many different ways—but it also seeks out ways to coordinate its efforts for maximum impact. For example, many of the teachers who participated in the university cohort are now ACE tutors and summer school teachers. That leads to powerful instruction for the district's neediest students.

In a Reading Academy school classroom, a second-grade teacher is doing an "echo read" of a poem with her 14 students, an exercise designed to increase fluency. She reads a

"All this stems from our vision of teachers as professionals. In Toledo, teachers are instructional leaders. That's the driving force for me."

—Francine Lawrence, President
Toledo Federation of Teachers

line aloud, modeling intonation and pacing, then the students echo her in unison. They add two poems a week to a looseleaf notebook she has provided; they will take it home over the summer to be sure they have something to read to practice their skills.

The students break into pairs and read a story aloud to one another, again building fluency. Then they turn to a "word ladder," a phonics exercise that is used with the most proficient second-graders. They start at the bottom of a page with a word and, making changes to it on each rung, climb a ladder to the top in a process that makes them think about the way words are put together.

This exercise, called "In the Doghouse," starts with a dog and a clue for the first word: a small round spot. "We are going to make a new word that has three letters by changing a letter in *dog*," the teacher says.

The class asks, "*Hog*?"

"No."

"*Dig*?"

"No. Change a *G* to a *T*. What does that make?"

"*Dot*," the class says in unison.

"Very good." She moves up the ladder, asking the children to change one letter to make a word that is short for Donald, being sure that they capitalize it on their sheets. Then she



In both photographs, a special education teacher in a Reading Academy school uses a technique called "Syllasearch." In *Syllasearch*, students take words apart and put them together again by syllables. *Syllasearch* helps students learn how to decode multisyllabic words. Photographs © Lori King.

stumps them by asking them to change one letter in *Don* to make a kind of fish.

"A *dod*?"

"A *tod*?"

"A *nod*?"

"A *sod*?"

"No," she says. "It starts with a C."

"*Catfish*?"

"No. I'll give it away," she says.

"*Cod*. That was a tricky one. The next clue is to form a four-letter word meaning a secret way of writing."

"*Code*."

"Oh my goodness. Who can spell that for us?"

Moving up the ladder, *code* becomes *Coke*, which becomes *cone* and, in the last clue, mutates into what a dog likes to chew on. "*Bone*," all the students yell.

Meanwhile in another classroom, a special education teacher is working with a combined class of 16 students who are in grades 4, 5, and 6, but who read at kindergarten through second-grade levels. She's focusing on an instructional strategy called "Syllasearch," used to help students learn to hear the sounds of and break apart multisyllabic words—although to these students it appears to be more of a game.

She uses cards that break up the syllables of the words *bottle*, *bottom*, *cattle*, *order*, *student*, *stupid*, and *indent*. She calls upon students to come to the front of the room and place specific syllables into columns to indicate whether they are the first or second syllable. She asks a student which letters make the *tul* sound in *bottle*. She asks whether the letters are already on the board to make the *bot* sound. They are, because another student has already formed *bottom*.



By combining the classes, she also is accomplishing something beyond teaching the students: She's spreading her knowledge of instructional techniques to the two other special education teachers who are in the classroom—one, whose students read at kindergarten or first-grade level, and another, whose students read at second-grade level. "These teachers aren't familiar with the strategies I am using, and I'm trying to demonstrate them," she says.

Looking Ahead

The Toledo school system is under stress, and although there are signs of

resurgence, it's anyone's guess what the future holds.

On the plus side, thanks to Reading Academy initiatives and other efforts, the district as a whole moved up two notches in August 2004 from "academic emergency," the lowest category in Ohio's five-tier district rating system, to "continuous improvement"—the first urban district in Ohio to do so. Toledo remained in the continuous improvement category in 2005 and 2006.*

"We are at or above the statewide average with our summer school scores, including the wealthiest districts," union President Lawrence says. "It's a tribute to the research-based professional development and the commitment of our accomplished teachers to share what they have learned with their colleagues. All this stems from our vision of teachers as professionals. In Toledo, teachers are instructional leaders.

Thanks to Reading Academy initiatives and other efforts, the district as a whole moved up two notches in August 2004 from “academic emergency,” to “continuous improvement”—the first urban district in Ohio to do so.

That’s the driving force for me. If teachers do not view themselves as the instructional experts, there isn’t much hope for public education.”

On the minus side are administrative instability and financial crisis. Superintendent Sanders left last spring to head Cleveland’s system. Twelve top administrators then left as well, most of them for Cleveland, including the chief academic, curriculum, financial, and business officers. Toledo’s Interim Superintendent John Foley, who has a 13-month term, is trying to fill the leadership vacuum, but most of his appointees lack experience in running an urban school district and had no opportunity to shadow the people whose positions they were assuming.

Meanwhile, the board made drastic choices to meet a seemingly never-ending deficit, which a newspaper account predicts will rise to \$109.8 million five years from now. The deficit is fueled primarily by rising costs and enrollment decline. Rust-Belt Toledo has lost tens of thousands of residents in recent times, many to the suburbs and their schools, as well as to a host of aggressively marketed charter schools. To help save \$12 million, the district shuttered five schools in June and laid off staff. Among them were 97 teachers who

almost immediately had to be summoned back for service—a demoralizing approach to labor relations.

Parents who are considering withdrawing their children from the public school system doubtlessly worry about the impact that the district’s sketchy finances will have on education. To increase revenue and bring stability, three members of the fiercely divided board proposed a substantial new tax levy, but failed to get the fourth vote needed to place it on the November ballot. Much of the money that would have been raised in the first year would have funded \$11.7 million in retroactive pay for teachers and other unionized school employees, which has been due since December 2002.

Nevertheless, in January, the Reading Academy is expanding its supplemental educational services operations into junior high schools that have been placed in school improvement status. Czerniak says that discussions are underway about whether or not to offer other support to adolescent students as well. Over time, the number of junior high school students who need support should diminish, as students who’ve been through the Reading Academy program in elementary school get older, but there will always be a need to help some students, including those who move into the district. The district could further reduce the need for junior high remediation if it expanded the number of elementary Reading Academy schools. (Since many of those ER&D-trained teachers remain in the system, the district would not have to bear the full cost of starting an Academy school from scratch.)

Marsha Berger, the district consultant who used to work for the AFT, is optimistic about the strength being built through the university cohort program. “If you have a critical mass in a school going through this university program and getting coaching in how to implement strategies, this will spread through the school. The Reading Academy has managed to keep each new cohort of 25 to 30 teachers going, and it’s as if they’ve been spreading apple seeds around the district. This is the most powerful joint activity in an urban school district that I have seen in all my years of unionism.”

The Toledo Federation of Teachers’ Lawrence concurs. “I hope the new leadership recognizes the significance of collaboration,” she says. “We are the leading urban district in Ohio and we want that to continue. But only time will tell.”

Meanwhile, Lawrence finds that professional development has been a valuable union-building tool. “The vibrancy of this union stems from the traditional role we play in advocating for good working conditions for our teachers, but we also have individuals in leadership positions who have come through professional initiatives. We engage and empower our membership and each becomes part of the fabric of the union.”

Silverman, who did not seek re-election to the board when his last term ended in 2005, no longer has to worry about school politics, but agrees that professional development and cooperation with the union are crucial to the future of Toledo’s schools. He says, “Our teachers are excited. It’s been an incredible success in a model of everybody working together.” □

*Here’s a related indication of change: As of August 2006, the number of Toledo schools in the lowest category fell from 16 to 10, and three schools are now on the list of “excellent” performers; 11 schools are rated effective, the second highest category. The precise number of schools in the district varies because of closings due to construction and consolidation, but according to the system’s Web site as of November 2006, Toledo has 41 elementary schools, seven junior high schools, eight senior high schools, and various specialized learning centers.

The Teacher Experience

Recognize the Real Cause

The data show: It is not collective bargaining

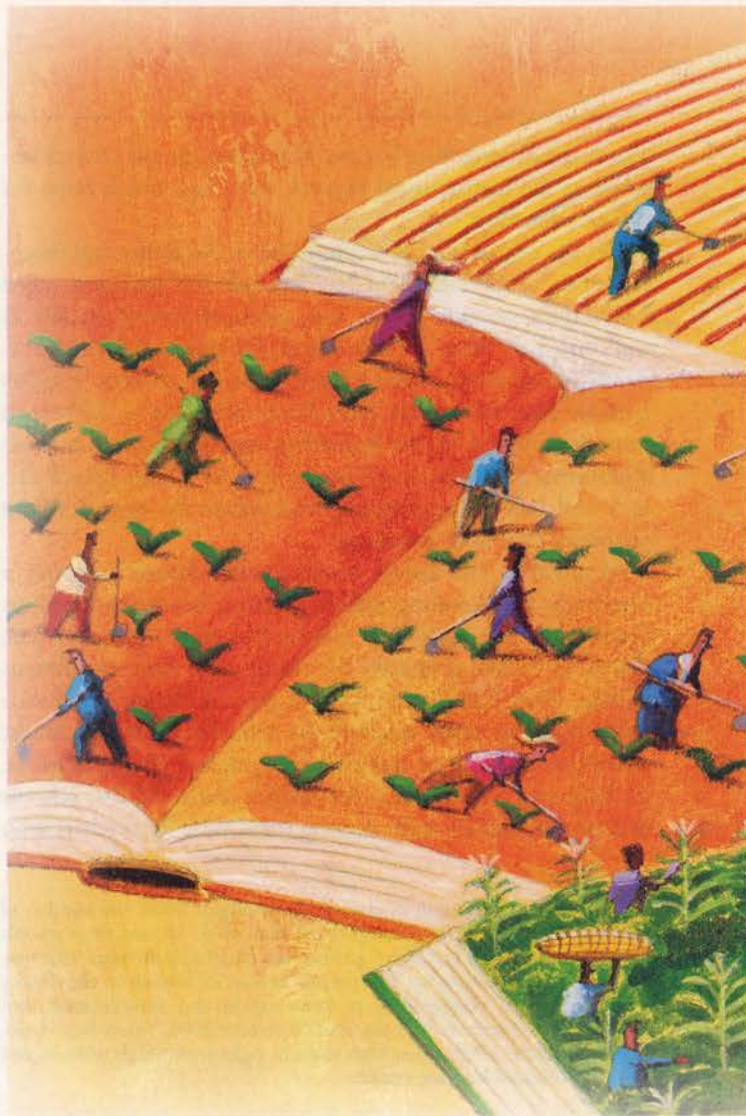
By F. Howard Nelson

According to data from the National Center for Education Statistics, 19 percent of teachers in the typical high-poverty school have three or fewer years of experience, compared to 15 percent in low-poverty schools and 16 percent in medium-poverty schools. Like all averages, this one masks the much more extreme experience gap that exists in some areas (and the nonexistent one in other areas). Since new teachers are, on average, less effective than experienced teachers, closing this teacher experience gap is an important ingredient in closing the student achievement gap. But how do we best do it?

The policy debate around this problem has often been characterized by assumptions rather than evidence, with the premier assumption being that the seniority provisions in collective bargaining contracts are to blame for high-poverty schools' difficulty in retaining more experienced teachers. The reasoning behind this assumption goes as follows: Collectively bargained contracts allow teachers to use their seniority to claim vacant jobs, and experienced teachers use those seniority rights to transfer to more middle-class schools within the district. (For examples of the critics' claims, see box p. 31.)

But in fact, these assumptions, and the recommendations that flow from them, are not informed by data on the actual transfer activity of teachers within and between school districts, including the characteristics of teachers who transfer, what types of schools they leave, and where they move. Most of the research on teacher transfers consists of case studies of contract language in a handful of districts with collective bargaining. Some find that seniority plays a role in transfers, some don't. But the fact is, neither case studies nor reviews of

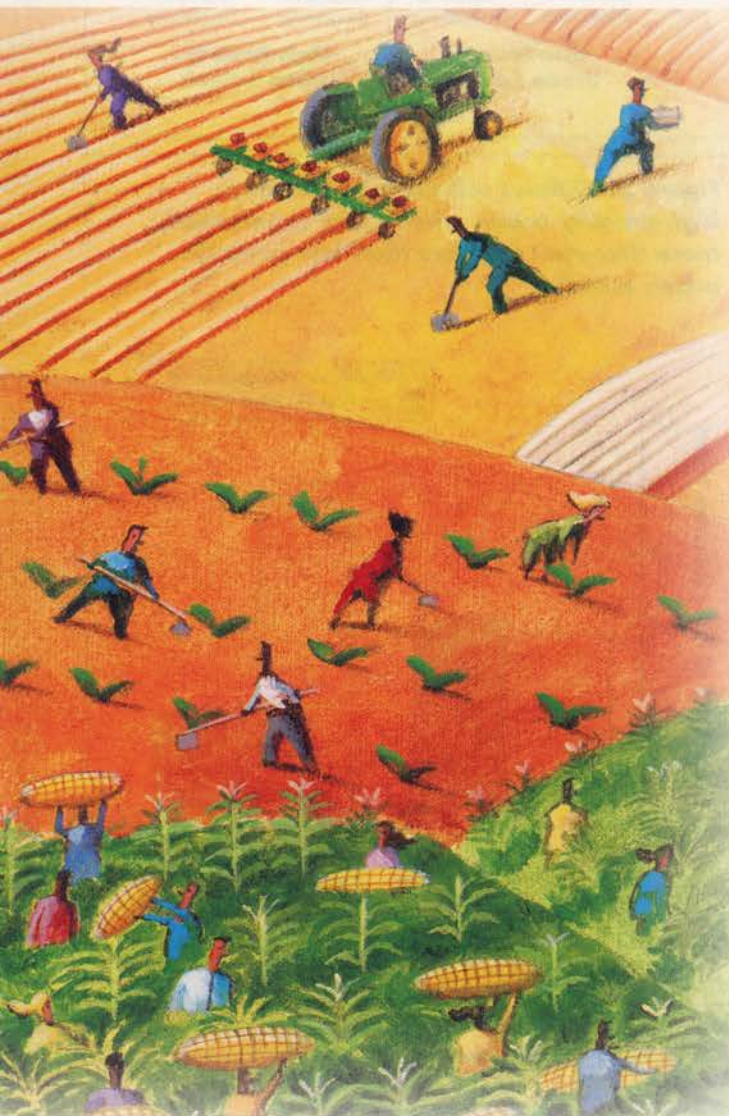
(Continued on page 28)



Gap: What Is the Remedy?

Cultivate the Right Solution

*It is attracting experienced teachers to high-poverty schools
and strengthening teacher retention*



Schools in the South Bronx section of New York City have struggled for years with low student achievement. Ten years ago, fueled by the discovery that only 17 percent of a local school's students were meeting city and state reading standards, parents and community members decided to take action. They began by focusing on the problems in that one school, but eventually—after many years of struggling with the school system—decided that better organization, broader support, and a more ambitious agenda were the way forward. Along with several local organizations, in 2002 they formed a partnership that is now known as the Community Collaborative to Improve Bronx Schools, or CCB.*

CCB fixed as its first target the high teacher turnover rate in 10 low-performing schools. The turnover kept the schools' staff in constant churn, left too many children learning from brand new teachers, and meant the schools had too few teachers with the wisdom gained from long experience. CCB worked with NYU's Institute for Education and Social Policy (which is now part of the Community Involvement Program of the Annenberg Institute for School Reform at Brown University), the city's Department of Education, and the local teachers' union, the United Federation of Teachers (UFT), to devise a solution. The proposal that emerged from these discussions was the Lead Teacher Project (LTP), designed to attract experienced teachers from around the city—and provide such extraordinary support for the new teachers and such a terrific professional environment for all teachers, that school staff would want to stay.

The LTP is now two years old. A new two-year evaluation describes the program and documents its positive effects—on instruction, retention, and what ultimately matters, student achievement. Here's the story, drawn from the evaluation conducted by the Academy for Educational Development.

—EDITORS

(Article begins on page 32)

ILLUSTRATION BY PAUL ZWOLAK

(Continued from page 26)

a limited number of contracts can determine whether collective bargaining is generally to blame for the teacher turnover problem or whether this popular claim is a myth.

To determine if this claim is true, researchers need to compare the effects of teacher transfers on high-poverty schools in states where there is extensive collective bargaining and in high-poverty schools in states where there is no collective bargaining. This is the research that I have undertaken and that is highlighted in this article. For purposes of space, I'm going to limit my comparisons to those involving urban schools. (My full study* also examines non-urban schools.)

My research draws on the 1999-2000 Schools and Staffing Survey and the related 2000-2001 Teacher Follow-Up Survey, nationally representative surveys conducted by the U.S. Department of Education's National Center for Education Statistics. I approached this research expecting to find that collective bargaining was less linked to transfer activity and to relative levels of inexperience in high-poverty schools than union critics had claimed. In fact, I was surprised to see that, if anything, the evidence indicates that *collective bargaining is associated with lower transfer rates out of urban high-poverty schools*. Perhaps more importantly, in urban districts with a collective bargaining agreement, high-poverty schools are no more likely than low-poverty schools to replace transferring teachers with first-year teachers. In stark contrast, in urban districts without a collective bargaining agreement, high-poverty schools hire first-year teachers at three times the rate of low-poverty schools.

Let's start by looking at urban teachers' mobility rates according to whether or not their schools are high or low poverty and whether or not they have collective bargaining. Figure 1 reveals two important findings. First, low-poverty urban schools have much lower percentages of teachers transferring or leaving the profession than high-poverty urban schools. Second, teachers in urban schools (regardless of their poverty level) in states without collective bargaining are much more likely to transfer and slightly more likely to leave teaching than teachers in states with extensive collective bargaining.

So we can clearly see that both high poverty and the *lack* of collective bargaining are associated with more teachers transferring and more teachers leaving the profession.

The vacancies created in these high-poverty urban schools force administrators to spend considerable time searching for new staff and place extra stress on the teachers who often have to temporarily fill the gaps and integrate new colleagues into schoolwide instructional strategies. But, the impact that the vacancies have on student achievement is at least partially mediated by those who fill those vacancies. On average—and regardless of how good they may eventually become—first-year teachers are the least effective, so it's

Figure 1: Without collective bargaining, teachers are much more likely to transfer and slightly more likely to leave teaching.

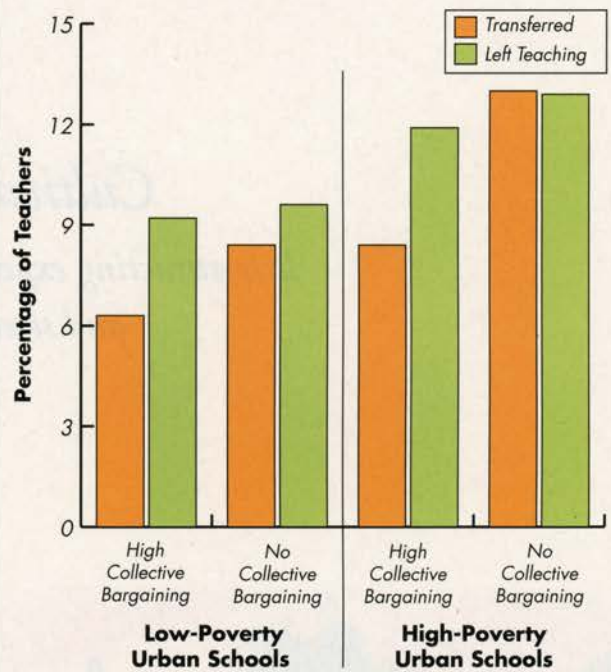
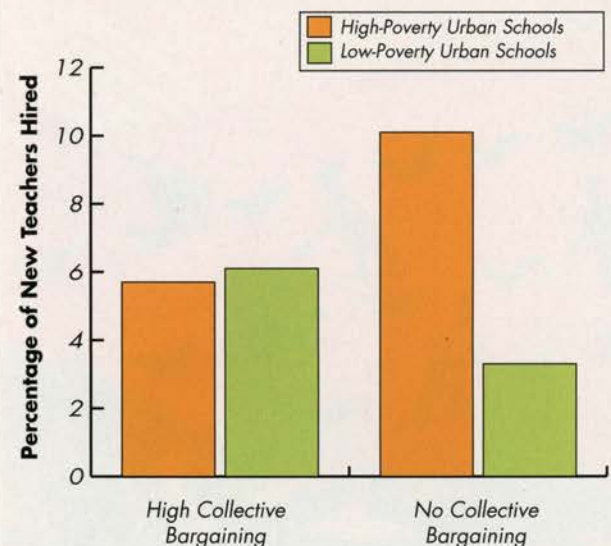


Figure 2: Without collective bargaining, high-poverty urban schools hire dramatically more first-year teachers than low-poverty urban schools.



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*My full results, as well as an explanation of my methodology, are available at www.aft.org/topics/teacher-quality/downloads/Teacher_Transfer_Rates.pdf.

If anything, the evidence indicates that collective bargaining is associated with lower transfer rates out of urban high-poverty schools.

important that all schools fill their vacancies with a mix of new and more experienced teachers; high-poverty schools should not be saddled with a disproportionate share of these new teachers. On this score, high-poverty urban schools without collective bargaining are at a severe disadvantage. As Figure 2 shows, collective bargaining is associated with both high- and low-poverty urban schools hiring roughly the same low percentage of first-year teachers. But in areas without collective bargaining, high-poverty schools hire three times as many first-year teachers as low-poverty schools.

Who Stays? Who Goes?

So, it appears that collective bargaining is not to blame for teachers transferring out of high-poverty urban schools. Indeed, collective bargaining seems to help keep teachers in such schools. But, is it keeping the “right” teachers? With the dataset I used, I was able to examine teachers’ years of experience and whether or not they were certified. In Figure 3, it’s clear that among high-poverty urban schools, those with collective bargaining are holding on to slightly more experienced teachers and are losing slightly less experienced teachers than high-poverty urban schools without collective bargaining.

Likewise, in Figure 4, the evidence suggests that collective bargaining is not associated with the flight of qualified teachers from high-poverty urban schools. In states with extensive collective bargaining, 75 percent of the teachers who transferred from high-poverty urban schools were certified, compared to 81 percent of the teachers who transferred from such schools in states without collective bargaining.

If Collective Bargaining Is Not to Blame, What Is?

As Figure 1 made clear, there is greater teacher mobility in high-poverty than in low-poverty urban schools. But it doesn’t seem that transfer provisions in collective bargaining contracts are to blame because teacher mobility is much high-

Figure 3: With collective bargaining, high-poverty urban schools hold on to slightly more experienced teachers, and lose slightly less experienced ones.

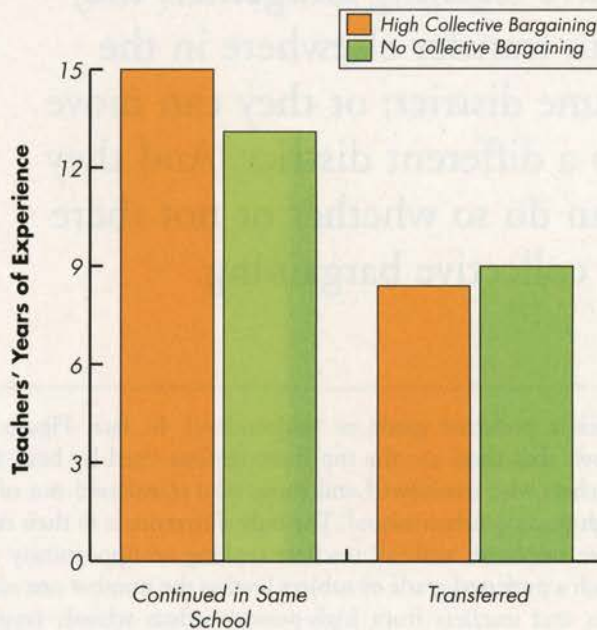
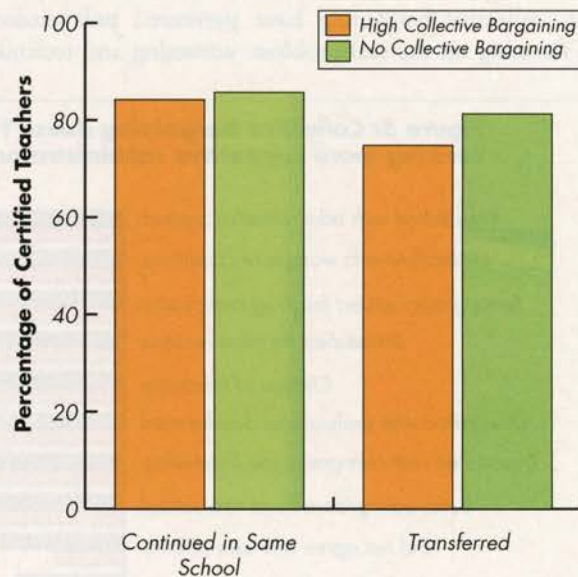


Figure 4: With collective bargaining, high-poverty urban schools hold on to virtually the same percentage of certified teachers, and fewer of those who transfer are certified.



er without collective bargaining. So what is to blame? Teachers who transfer cite a lack of administrative support, dissatisfaction with workplace conditions, and an opportunity to

As in virtually all occupations, teachers who are unhappy can leave teaching altogether; they can transfer elsewhere in the same district; or they can move to a different district. And they can do so whether or not there is collective bargaining.

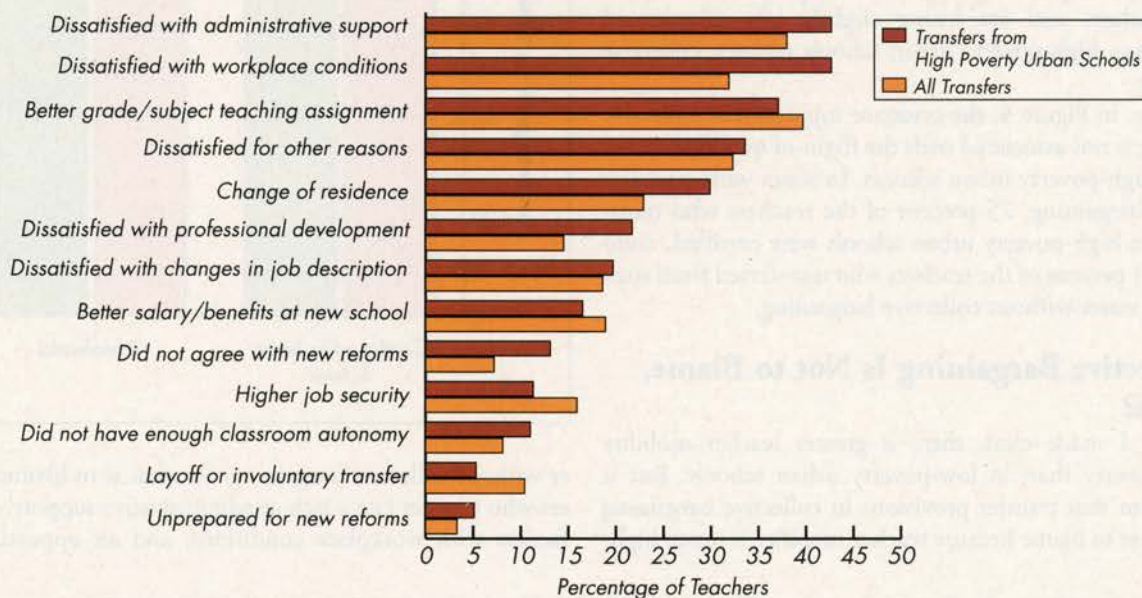
teach a preferred grade or subject level. In fact, Figure 5 shows that these are the top three reasons cited by both all teachers who transferred and those who transferred out of a high-poverty urban school. The only difference is in their relative emphasis, with all teachers ranking an opportunity to teach a preferred grade or subject level as the number one reason, and teachers from high-poverty urban schools saying problems with support and conditions tie for first.

In contrast to the assumptions often made, the evidence indicates that collective bargaining is associated with 1) lower transfer rates out of urban high-poverty schools, and 2) a more equitable distribution of first-year teachers among schools of different poverty levels. Unfortunately, all the attention on, as well as assumptions about, collective bargaining have prevented policymakers from focusing on the real problem: attracting and retaining

teachers who are prepared to teach successfully in high-poverty urban schools.

As in virtually all occupations, teachers who are unhappy with their circumstances have options. They can leave teaching altogether; they can seek a voluntary transfer from a difficult situation in one school for a better situation elsewhere in the same district; or they can move to a different district, which for many urban teachers can mean switching to a district with a less challenging student population and/or higher salaries and greater school and parental resources. And they can do so whether or not there is collective bargaining. Despite the positive impact of collective bargaining on reducing teacher mobility, we can also see in the data presented here that teachers in poor, urban schools exercise this option to move to other occupations, other schools, or other districts more often than teachers in schools with little poverty. Why? For the reasons just listed. Teaching in a high-poverty, urban school is very challenging work even under the best of circumstances. If the school is not well run and decently resourced, the teaching challenge is often overwhelming. If we want a stable, strong teaching force in these schools, we need incentives to attract teachers to these schools and retain them. The primary incentive is teaching conditions that make it possible for teachers to achieve their primary goal—success with their students. We should focus on improving school and neighborhood safety, establishing and maintaining orderly schools, providing teachers—especially new teachers—with professional and administrative support, giving teachers reasonable workloads and class sizes, ensuring that all classrooms are well stocked with the appropriate instructional materials, and keeping school facilities in good repair. But, in addition, as in other industries, if we want to attract qualified employees to more difficult, challenging jobs, we need to use market incentives as well, including higher pay. □

Figure 5: Collective bargaining doesn't impact teachers' decision to transfer—but seeking more supportive administrators and better assignments and conditions does.



Claims That Bargaining Is the Culprit Are Based on Assumptions, Anecdotes, and a Handful of Case Studies



It has become popular to claim that where there is an experience gap, the fault is collective bargaining. But a look at these claims demonstrates that they are not based on serious evidence and, as “Recognize the Real Cause” (see page 26) shows, the actual data refute the claims. A leading proponent of the claim that collective bargaining agreements are to blame for teachers transferring out of high-poverty urban schools is the Hoover Institution’s Terry Moe. For example, in a recent essay, he asserts that “hard evidence or no, there are compelling reasons for thinking that transfer rights should have profoundly negative effects on the schools.... transfer rights give senior teachers much more latitude in choosing where to teach, and they can be expected to use it to leave ... schools filled with disadvantaged kids.... In districts with transfer rules, then, disadvantaged schools should find themselves burdened with even more inexperienced teachers than they otherwise would.”¹

Based on anecdotal evidence, but calling it “easy to see,” Paul Hill, the director of the Center on Reinventing Public Education, describes a scenario in which senior teachers, on their own or at the behest of a principal, have first claim on vacant jobs that become available, preventing principals from making their own hires.² Further, he claims that when senior teachers are displaced by school closings or enrollment shifts, they invoke seniority to dislocate less senior teachers, who in turn “bump” even less experienced teachers. Hill argues that this cycle of displacement is especially harmful in urban districts because new teachers cannot be hired until the rounds of displacements end. According to Hill, seniority rights mean that principals in even the most attractive schools in a district must oversee staffs they do not hire and cannot fire. Like Moe, Hill

asserts that teachers always prefer to work in more attractive schools and neighborhoods, and that they use their seniority to pick those jobs. Moreover, they claim, after one or two years at a “bottom-of-the-barrel school,” relatively new teachers use their seniority to move to slightly more attractive schools in the district.

Similarly, Marguerite Roza, Larry Miller, and Paul Hill, in a paper they wrote for the Center on Reinventing Public Education, argue that “it has long been acknowledged that teacher preferences dictate the assignment of teachers across schools within a district because teacher preferences are usually honored according to seniority, frequently backed up by labor contracts.”³

Roza, Miller, and Hill also argue that the most experienced (and highest-paid) teachers are assigned to schools with the fewest teaching challenges, while the “greenest” (and lowest-paid) teachers are generally assigned to struggling schools. (They cite as evidence of these patterns average salary differentials of about \$2,000 per teacher, or \$80 per pupil for a class of 25 students, between low-poverty and high-poverty schools within a school district. This amount approximates the difference between a teacher with 13.7 years of experience and one with 15.4 years of experience, which is the difference in experience between teachers, on average, in high- and low-poverty schools according to the 1999–2000 Schools and Staffing Survey.)

Andrew Leigh and Sara Mead, in a report published by the Progressive Policy Institute, relied in part on a paper by Roza and Hill to claim that seniority-based collective bargaining provisions encourage senior teachers to choose placements in less challenging schools, rather than letting administrators assign them where their skills are most needed.⁴

After studying two large school districts, the Harvard Civil Rights Project claims that teacher distribution is determined by seniority rules, teacher preferences, and principal discretion.⁵ Citing Eric Hanushek, a senior fellow at the Hoover Institution, and others⁶ in a study of Texas—a state which prohibits collective bargaining—the Project concludes there is evidence that teachers favor higher-achieving, non-minority, non-low-income students, a preference which extends across districts (i.e., teachers prefer suburban over urban districts), as well as to schools within a district, resulting in teachers moving to more middle-class schools when the opportunity arises.

The New Teacher Project’s reviews⁷ of teacher transfers have been cited by some as showing that seniority provisions in collectively bargained agreements contribute to disparities in staff qualifications among high- and low-poverty schools—even though TNTP reviewed just a handful of unnamed districts and TNTP itself did not reach such a conclusion. For example, in a Brookings Institution report, Robert Gordon, Thomas Kane, and Douglas Staiger cite TNTP as a source for this statement: “Understandably, once teachers accumulate sufficient seniority, they frequently exercise contractual rights and transfer into wealthier schools.”⁸

—F.H.N.

Endnotes

¹Terry Moe (2006). “Union Powers and the Education of Children” in *Collective Bargaining in Education* (eds. Jane Hanaway and Andrew Rotherham), Harvard Education Press, p. 238.

²Paul Hill (2006). “The Cost of Collective Bargaining Agreements and Related District Policies” in *Collective Bargaining in Education* (eds. Jane Hanaway and Andrew Rotherham), Harvard Education Press.

(Continued on page 51)

Cultivate the Right Solution

(Continued from page 27)

By Lynn W. Gregory, Nancy Nevarez, and
Alexandra T. Weinbaum

The Lead Teacher Project (LTP) is a unique partnership of CCB, the New York City Department of Education (DOE) and its Region 1 Superintendency, and the local teachers' union, the United Federation of Teachers (UFT).

In the 2004-2005 school year, 36 lead teachers provided support to approximately 124 teachers in 10 schools—eight elementary schools, one middle school, and one K-8 school. In the 2005-2006 school year, 37 lead teachers provided support to approximately 93 teachers in 11 schools—the original 10 plus another middle school. Although lead teachers are more frequently asked to work with new or less experienced teachers, they also work with experienced teachers.

The initial LTP design called for assigning two lead teachers to one classroom, allowing each to work half-time providing professional development to other teachers and half-time teaching in his or her own classroom, which could serve as a lab for trying out instructional strategies and a place for others to observe expert teaching. This worked well in elementary schools; however, in the middle schools (where teachers specialize instead of teaching all subjects), lead teachers were not paired with one another, but instead were each paired with a regular teacher who taught the same subject. Since the lead teacher was still only teaching half-time, this was a workable model.

In exchange for the extra work lead teachers take on, they are paid an extra \$10,000. This is just as much a part of CCB's teacher retention strategy as the support for inexperienced and struggling teachers. By offering a leadership role to teachers, the LTP aims to keep expert teachers in South Bronx classrooms.

To oversee the LTP and ensure smooth implementation, a Lead Teacher Coordinating Committee was established, which consisted of CCB parent and community group representatives, representatives from the UFT, principals of the LTP schools, and regional administrators. Representatives from the UFT's Teacher Center took the lead in developing the process and criteria for one of the committee's primary tasks: helping schools select lead teachers. The committee reviewed resumes, conducted interviews and reference checks, and then compiled a list of recommended candi-

When asked to distinguish lead teachers from other professional development providers in their schools, teachers inevitably described the legitimacy that comes from working with a colleague who is also teaching in the school.

dates for the LTP schools. Final selection and hiring has been done at the schools; they have their own hiring committees that consist of parents, teachers, and administrators.

While lead teachers are selected because they are successful, experienced teachers, they do not generally enter the program with much experience as mentors. Responsibility for professional development—which has been provided throughout the 2004-2005 and 2005-2006 school years—is divided equally between the UFT Teacher Center and the Region 1 Learning Support Center. The UFT focuses on increasing the lead teachers' coaching and mentoring skills;

Lynn W. Gregory is a researcher as well as the founder and executive director of an evaluation consulting firm, Partnerships for Creative Action. Nancy Nevarez is a program officer in research and evaluation at the Academy for Educational Development. Alexandra T. Weinbaum is a vice president and director at the Academy for Educational Development.

* The original name was the Community Collaborative to Improve District 9 Schools, or CC9. At the time, New York City schools were divided into 32 community school districts, and CC9 focused on 10 low-performing schools in District 9. Not long after CC9 was formed, the mayor and chancellor announced that the 32 districts would be replaced with 10 regions, each of which would create networks of 10 to 12 schools. The schools that CC9 was involved with fell into Region 1, and CC9 convinced the Region 1 superintendent and the chancellor to make its 10 schools into a network.

Region 1 focuses on New York's state standards and the city's math and literacy curricula. In addition, the UFT Teacher Center has developed a number of tools to support and structure the lead teachers' work in their schools. These tools include the *Lead Teacher Project Manual*; weekly schedules that are submitted to the principal; interactive planning logs, which include goals, objectives and professional work plans and are developed collaboratively with the supported teachers; daily work logs, in which the lead teachers describe the "who, what, when, and where" of their activities; and personal portfolios that enable lead teachers to reflect on their work with colleagues.

Lead Teachers Are Regarded as Credible, Knowledgeable, and Trustworthy

To better understand the kind of the support offered by the lead teachers, the Academy for Education Development (AED) developed 12 case studies of lead teacher-supported teacher interaction. The case studies were based on interviews, observations, and reviews of lead teacher portfolios.

These analyses revealed some common characteristics of the lead teacher role and its effects on the instructional practice of the teachers they support. In brief, lead teachers proved themselves quite skilled at identifying problems and offering solutions in a way that earned the trust of supported teachers.

Lead teachers are highly skilled at unpacking and diagnosing the needs of the supported teachers with whom they work.

In almost every case study, AED found that the supported teacher asked for help with issues that were ultimately diagnosed differently by the lead teacher. It is notable that in most cases, the supported teacher wanted help with time management and specific procedures relating to the workshop model of instruction that is mandated by the Department of Education (DOE).

The lead teacher often recognized that the supported teacher's difficulty with fitting aspects of the required instruction into the schedule resulted from larger issues. For example, some supported teachers struggled to keep the attention of students who had learning challenges and were diverted from the initial mini-lesson by students who either did not pay attention or were disruptive to the rest of the group. These same students made it difficult for the independent work segment of the lesson to succeed as well. Consequently, it was not unusual for the supported teacher to fall behind and not have time to complete the lesson or for student reflection. The case studies show that once they

By offering a leadership role to teachers, the Lead Teacher Project aims to keep expert teachers in South Bronx classrooms.



observed the supported teacher's class, lead teachers often redefined the goals of their work and began by modeling approaches to classroom behavior management, differentiated instruction, and creating a classroom environment that was appropriate for the students' academic level.

Lead teachers are very good at helping supported teachers make instruction more comprehensible and engaging for students.

As noted above, in many cases AED saw supported teachers who were new to teaching who felt overwhelmed by the extent to which the workshop model "overstructured" their lessons. Time pressures, which were exacerbated by difficulties with classroom management, sometimes resulted in supported teachers ending a section of the lesson before it had been completed, talking too fast, being distracted, or skipping parts. In such cases, lead teachers made suggestions, modeled instructional techniques, and provided supported teachers with instructional materials to help

them slow down and be more confident that the students were learning.

In one case, a kindergarten teacher observed a lead teacher who conducted a lesson to model not only the way she interacted with students who were reading books to her, but also the way she placed herself physically so that she would always be attending to the entire class as well as the individual student. This way of positioning herself provided the class with a feeling of order and general control. In another case, a supported teacher who was new to the grade level had “decorated” the room with posters and other learning materials that were much too advanced for the students. The lead teacher noticed immediately that the students were not attending to the classroom’s physical environment and helped the supported teacher replace the

materials with others that were more age-appropriate.

Lead teachers are skilled at providing support without being authoritative or prescriptive.

When asked to distinguish lead teachers from other professional development providers in their schools, teachers inevitably described the legitimacy that comes from working with a colleague who is also teaching in the school. Lead teachers are trained and their roles and responsibilities are defined in ways that encourage them to be helpful and provide critical friends’ feedback. They do not play a supervisory role within the school’s administrative structure, and their records with teachers are not shared with principals.

As noted above, lead teachers often found that the problems presented by supported teachers were symptomatic

How We Brought Experience to the South Bronx

By Ocyntia Williams

After 30 years of having to deal with as many as 25 different area superintendents, corrupt school board members, and an unstable teaching force, parents and community groups in the South Bronx decided it was time for real change. Five years ago, we formed CC9 (the Community Collaborative to Improve District Nine Schools*), a parent-led community group made up of parent leaders, six community-based organizations—ACORN, Citizens Advice Bureau, Highbridge Community Life Center, Mid Bronx Council, New Settlement Apartments, and the Northwest Bronx Community and Clergy Coalition—and New York University’s Institute for Education and Social Policy.** Our focus was 10 schools that had been at the bottom of the totem pole in academics, parent involvement, and resource distribution for far too long.

Ocyntia Williams is a parent leader with the Community Collaborative to Improve Bronx Schools. This article is adapted from “A Community-Led Reform: Improving Schools in the South Bronx.” Voices in Urban Education, Fall 2004. Reprinted with permission from Annenberg Institute for School Reform at Brown University.

Together, we convened numerous meetings, held retreats, and came up with a three-point plan calling for: a highly skilled and well-trained teaching force, effective principals to lead the school-change process, and real family and community partnerships. Using this plan, we further reached out to New York City Department of Education (DOE) representatives, the teachers’ union, administrators, local political leaders, and other school reform organizations, like New Visions for Public Schools, Lehman College, and NYU’s School of Education. We then held a public rally to demonstrate the public support for our cause.

The part of the plan we decided to tackle first was our call for a highly skilled and well-trained teaching force. The lower-performing schools in the South Bronx on which CC9’s efforts were focused all had something in common: a big teacher retention problem and, as a result, a lot of teachers with only one or two years’ experience. The retention issue had to be dealt with on two levels—among the new teachers who were overwhelmed and among the existing staff who could apply for other jobs

within the district—or leave for a nearby suburban district, where they would likely get higher pay and a less challenging assignment.

To design and implement the program, we needed expert advice. We soon saw that there was no better expert advice than that of teachers. With the commitment of the United Federation of Teachers (UFT), Michelle Boddien, UFT’s vice-president of elementary schools, and Herb Katz, the district UFT representative, joined our team. We were off and running.

Over the course of the next four months, Michelle and Herb worked tirelessly with us in ironing out all the kinks to make sure we had a smooth strategy for implementation of the program. They also accompanied CC9 to the Chancellor’s office to shop our proposal. Working with the teachers’ union proved to be a very rewarding experience. It opened the lines of communication with parents and was the start of what has become a very rewarding and ongoing relationship between parents, the community, and the UFT.

By the end of April 2003, we had designed a proposal for lead teachers

* CC9 has since expanded to work with other Bronx schools; our name is now CCB, the Community Collaborative to Improve Bronx Schools.

** This is now part of the Community Involvement Program of the Annenberg Institute for School Reform at Brown University.

of larger issues that needed attention, but during our observations, lead teachers were never observed to jump in and say that a supported teacher was wrong. Instead, lead teachers integrated the supported teachers' perceived needs into their support process. It is also apparent that by "walking the walk," lead teachers spent much time both team teaching and modeling instruction in supported teachers' classrooms. Supported teachers were grateful for the help and especially enjoyed having the assistance of another professional when they taught classes and worked together with students.

Targeted Support, Schoolwide Results

In both the first and second years of implementation, we surveyed lead teachers, supported teachers, and the other

teachers in the LTP schools to find out whether or not they judged the lead teacher program helpful. As expected, supported teachers found the lead teacher program very helpful in many aspects of their teaching. A less expected finding was that over half of the other teachers, those not supported by the program, described it as helpful to the school. These benefits to the broader school community likely derived from the professional development sessions and study groups run by lead teachers that were open to all teachers. The table on page 38 summarizes the relevant survey results.

Teachers who responded to the question "If you could change one aspect of LTP, what would you change and why?" most often called for increasing the availability of the pro-

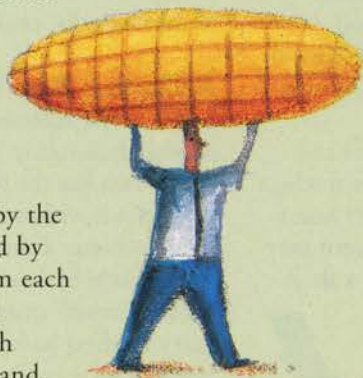
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that could meet the needs of both new and experienced teachers. We proposed that each school employ a highly skilled "lead" teacher who would serve half-time in the classroom and half-time providing coaching, leadership support, and professional development to new teachers. The CC9 proposal called for a citywide posting to attract the best candidates, a salary adjustment of \$10,000 to reflect the differentiated responsibilities of the position and to attract highly skilled teachers from other parts of New York City, and a budget of \$2.2 million for the full implementation of the proposal.

CC9 formally launched the Lead Teacher Campaign in January 2004 at a reception hosted by the UFT and attended by the principals from each of the 10 targeted schools, along with parents, teachers, and a DOE representative.

Over the course of the next several months, we spent countless hours meeting with grant-making foundations—and received a \$400,000 grant from the Booth Ferris Foundation. Then, we knocked on doors, held house meetings, and met in schoolyards and subway stations to

CC9 formally launched the Lead Teacher Campaign in January 2004 at a reception hosted by UFT, the teachers' union.



collect signatures that we could use as leverage with the leader of the city school system, Chancellor Klein. Armed with 10,000 signatures, letters of support from our elected officials, and the secured funding from the Booth Ferris Foundation, CC9 met with the

chancellor on April 2, 2004. CC9 was stunned at how quickly the chancellor embraced our proposal. Historically in our community, chancellors have almost never met with parent groups, let alone awarded them money for programs that they had developed. It was even more shocking that he agreed that a salary adjustment should be paid to reflect the differentiated responsibilities of the lead teachers.

That brought us to the final step: the DOE's negotiations with the UFT over the salary differential. In an unprecedented move, the UFT president invited members of CC9 to attend *and participate in* the negotiation session with the DOE. We left the meeting without an agreement, but we followed up by pushing both parties as hard as we could. At one point, CC9 delivered a large roll of red tape and scissors to key DOE staff—a symbolic action urging them to cut through the red tape.

All the pushing paid off. By mid-June the contract language had been agreed to. The final step was for the UFT to present the contract to its executive board for approval at an emergency session. In another historic event, CC9 was invited to attend the meeting, which ended with a nearly unanimous vote in favor of the contract. Our Lead Teacher Campaign was over—and the search for 36 lead teachers was on.

gram (n = 52), mainly through reducing lead teachers' other responsibilities so that they could be more consistently available to the teachers they were supporting. Similarly, in response to another survey item, 56 percent of other teachers agreed that they would like to work with a lead teacher in the future, providing further evidence of the perceived success of the program.

Given these results, it should come as no surprise that from 2004-2005 to 2005-2006, the turnover rate among supported teachers in seven of the 10 LTP schools for which data were available decreased: 9 percent in 2005-2006 versus 19 percent in 2004-2005. The overall staff turnover rate in these schools was also lower, although this cannot be attributed to lead teacher support. It is notable, however, that supported

teachers and other teachers both perceived improvement in overall school conditions, which affect retention of teachers, especially administrative support and encouragement and collaboration among teachers. Although it is too early to tell whether these effects will endure and can be spread to other parts of the schools, the early data are promising.

Early student achievement data are also promising. Student outcomes in English language arts for third grade, the grade in which most lead teachers worked with supported teachers, were very positive. From spring 2004 (just before the LTP began) to spring 2006, their gains exceeded gains made by students in all New York City schools and by all District 9 schools. Other grades did not post gains as great or compare as favorably with city and District 9 averages. When

Cultivating Solutions at the Bargaining Table

Closing the Teacher Experience Gap

Attracting more experienced teachers to high-poverty schools that lack them is vital—but it is not easy. Policymakers have sometimes called for mandatory transfers, believing that this could eliminate the experience gap. But, since teachers, like other employees, are free to change jobs if dissatisfied, such an approach would likely lead to an exodus of teachers from the district, leaving high-poverty schools with fewer experienced teachers. Other commentators (see box p. 31) have blamed negotiated transfer rules for the inequity. But the data show that collective bargaining is not associated with the experience gap. To the contrary, where there is bargaining, the proportion of teachers who leave high poverty schools is lower than where there is no bargaining!

What to do? Understand the problem's real causes and devise relevant solutions. The reality is: 1) turnover is, on average, higher than the norm at high-poverty schools (though the problem is less serious in areas where there is extensive collective bargaining), and 2) school principals generally have the authority to offer positions to the teaching applicants they prefer—and teachers choose which offer to accept by considering such factors as proximity to home

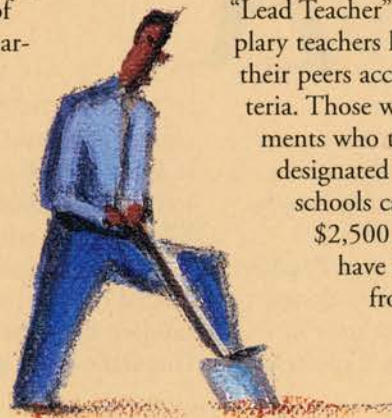
and, importantly, their perception of the school as a place where conditions enable effective teaching.

Districts and unions together can do much to encourage teachers to remain in, or transfer to, high-poverty schools by assuring the conditions that make effective teaching possible, such as supportive principals, smaller class sizes, adequate access to vital interventions (in reading, for example), a professional atmosphere that includes safe, orderly schools and excellent professional development—and acknowledging of these extra demands of reassignment with such incentives as premium pay.

Since the specific conditions and incentives that matter most to teachers may differ among districts (for example, in some districts the concern may not be an experience gap but a shortage of certain kinds of teachers), collective bargaining is the perfect vehicle for cultivating the right solution. It creates a conversation with district teachers, who are ultimately in the best position to know what pushes teachers out of a district's high-

poverty schools and, conversely, what would attract them to such schools for the long haul. In some places, more effective principals may be the greatest draw, in others, it may be safer parking, access to terrific professional development, the chance to earn a larger salary, or to teach with respected colleagues. The example of CCB (see p. 27) provides a perfect example of an inventive solution to a tough problem. Here are additional examples of solutions negotiated to meet specific challenges.

Rochester, New York: As in the South Bronx schools that CCB targeted, the challenge in Rochester is not just to stabilize the teaching force, but to bolster it with exceptional expertise. The Rochester Teachers Association and the school district negotiated for a "Lead Teacher" category. These exemplary teachers have been selected by their peers according to rigorous criteria. Those without other assignments who teach in district-designated "low-performing" schools can earn an additional \$2,500 annually. Teachers who have earned certification from the National Board for Professional Teaching Standards and agree to teach at a



compared with schools matched demographically and by size and grade levels, LTP schools were on a par with their peers. Although their overall scores were even lower than those in comparison schools (which is not surprising since LTP schools were selected because of their low achievement), the gains of LTP schools were comparable to those in comparison schools, with LTP schools making slightly larger gains in third- and fourth-grade ELA, and slightly smaller gains (or no gains) in third- and fourth-grade math.

Citywide Replication Raises Big Concerns

After the first year of implementation, the LTP was deemed such a success that the UFT and school system decided to extend it to other low-performing schools throughout the

city—they even included the lead teacher program in the UFT/DOE contract. The contract committed DOE to maintain the basic LTP model as part of the replication: Lead teachers would be paid an additional \$10,000 annually and would work one-half of their time in a shared classroom and the other half supporting other teachers.

In late 2005 and into early 2006, the Lead Teacher Coordinating Committee devoted considerable time to discussing its recommendations for DOE's replication of the program. After the DOE cancelled meetings with the committee, the committee was disappointed to learn that DOE had decided that the committee's input was not needed.

The citywide replication was announced in a press release
(Continued)

district-selected low-performing school can earn up to \$10,000 in premium pay. Also, most teachers who leave high-poverty schools leave for other districts or jobs—not other schools in the district. Therefore, the contract includes a unique benchmarking formula that keeps district teachers' salaries among the county's top five—at the entry-level as well as at five other points along the salary schedule.

Dade County, Florida: Operating on the premise that our most challenged children need the best and the most that we can provide—from teacher experience and skill, to professional development for teachers, to extra time beyond the school day—the United Teachers of Dade and the Dade public schools agreed to designate a group of struggling schools as School Improvement Zone schools, where the best and most would be provided. These schools get extra reading and math coaches and help from special support

teams; and students have a longer day and year, including a daily period for tutoring or enrichment. Especially in the elementary grades, these tutoring classes can be as small as 7-10 kids. For working a longer day and year, teachers (who both choose to be in these schools and are selected by the schools) receive premium pay of 20 percent. These changes have improved teacher retention—and student achievement has increased dramatically. (A similar program in New York City made possible substantial student achievement increases in that district's Chancellor's District, see "Using Well-Qualified Teachers Well," *American Educator*, Winter 2002, www.aft.org/pubs-reports/american_educator/winter2002/UsingTeachers.html.)

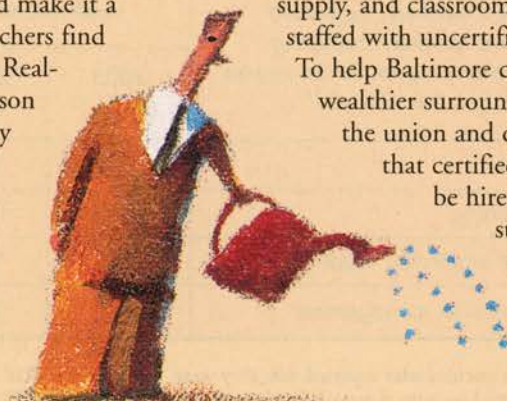
Cincinnati, Ohio: Working in a high-poverty school is challenging, but with the right conditions and recognition, it can be, in the best sense of the word, the challenge of a lifetime. What would make it a challenge that teachers find worth taking on? Realizing that one reason teachers might shy away from transferring to a high-poverty school is because they would have to abandon their teaching colleagues of

many years and start anew to build those important professional relationships, the Cincinnati Federation of Teachers and the school district came up with an intriguing incentive: Take your colleagues with you. In Cincinnati, teachers who agree to teach in a high-poverty school can move together with a group of selected colleagues. Furthermore, throughout the district, school-based staffing committees make the hiring decisions, assuring that schools are able to choose teachers who "fit" the school.

Baltimore, Maryland: In Baltimore, as in many urban districts, staffing high-poverty schools with well-qualified teachers can't be addressed by attracting teachers from one school and channeling them to another: Virtually all the schools in the district are high-poverty. Despite the requirements of No Child Left Behind, the demand for certified teachers in Baltimore exceeded the supply, and classrooms were being staffed with uncertified teachers.

To help Baltimore compete with wealthier surrounding counties, the union and district agreed that certified teachers would be hired on the fourth step of the salary schedule, the equivalent of a \$4,700 raise.

—EDITOR



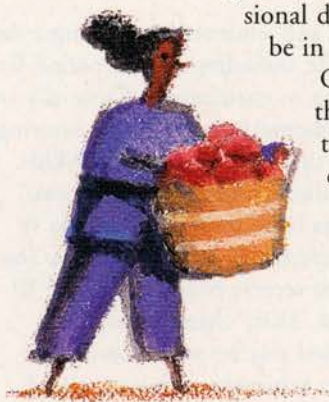
The turnover rate among supported teachers in the seven LTP schools for which data were available decreased: 9 percent in 2005-2006 versus 19 percent in 2004-2005.

committee met frequently to discuss how lead teachers were being used and to make sure that their role stayed true to CCB's original vision. Through the committee, parents, community members, UFT leaders, district and school level administrators, and lead teachers all had a voice in lead teacher selection and program implementation. Unfortunately, the expanded version of the LTP does not include a Lead Teacher Coordinating Committee, leaving its monitoring and problem-solving roles to individual principals.

The second year of the LTP ended with a combined sense of accomplishment regarding the good work that had been done, and uncertainty regarding the direction the program would take in the future. However, there was assurance that there would be a year three in the participating schools with the same configuration of lead teachers. Decisions regarding the administration, support structure (including professional development), and assessment of the LTP would be in the hands of DOE.

Given the current highly centralized nature of the NYC public school system and the insular tendency of its leadership, CCB's power to influence how its own initiative would be expanded to other parts of the city was limited. While CCB could proclaim that its organizing had produced a significant change in systemwide policy regarding teacher support and recruitment in low-performing schools, it also had to conclude that it lacked the power to ensure appropriate implementation across the city. Among CCB leaders, this experi-

ence crystallized the need to work with other parents and groups to build a citywide parent collaborative with the requisite power to impact citywide education policy. Toward that end, CCB leaders have joined with leaders from the Brooklyn Education Collaborative and the Brooklyn-Queens for Education Collaborative to form the NYC Coalition for Educational Justice. The UFT is a close collaborator on this new initiative, which aims to unite parents, community residents, and teachers behind educational excellence and equity. □



dated March 9, 2006. According to the announcement, 100 low-performing schools could apply to have one pair of lead teachers, one of whom would be paid for by DOE and the other by the school itself. Some committee members expressed concern that the program was being "watered down" as it was replicated throughout the city such that it would lose its intended impact. In interviews, committee members expressed disappointment that DOE was relegating the role played by the committee to individual school principals. In the first two years of implementation, the

2005 and 2006 Teacher Survey Respondents

Percentage of lead teachers, supported teachers, and other teachers indicating that the lead teacher program is "somewhat helpful," "helpful," or "very helpful" ...	Lead teachers		Supported teachers		Other teachers	
	2005 n=21	2006 n=31	2005 n=124	2006 n=81	2005 n=158	2006 n=150
... in their school	100%	97%	81%	100%	56%	74%
... with their teaching	100%	100%	82%	97%	42%	53%
... with their own classroom organization	95%	97%	77%	92%	34%	39%
... with their classroom management	94%	97%	66%	83%	31%	35%

These results exclude teachers who reported that they were "not at all familiar" with the program. Between 2004-2005 and 2005-2006, the percentage of other teachers who were at least somewhat familiar with the LTP increased from 60 percent to 87 percent.

HOW WE LEARN

ASK THE COGNITIVE SCIENTIST

The Usefulness of *Brief* Instruction in Reading Comprehension Strategies

How does the mind work—and especially how does it learn? Teachers' instructional decisions are based on a mix of theories learned in teacher education, trial and error, craft knowledge, and gut instinct. Such gut knowledge often serves us well, but is there anything sturdier to rely on?

Cognitive science is an interdisciplinary field of researchers from psychology, neuroscience, linguistics, philosophy, computer science, and anthropology who seek to understand the mind. In this regular American Educator column, we consider findings from this field that are strong and clear enough to merit classroom application.

By Daniel T. Willingham

Question: In a recent column* you said that background knowledge is essential for reading comprehension. What about reading comprehension strategies? Isn't it important to teach children comprehension strategies to help them get everything out of what they read?

Daniel T. Willingham is professor of cognitive psychology at the University of Virginia and author of Cognition: The Thinking Animal. His research focuses on the role of consciousness in learning. Readers can pose specific questions to "Ask the Cognitive Scientist," American Educator, 555 New Jersey Ave. N.W., Washington, DC 20001, or to amerred@aft.org. Future columns will try to address readers' questions.



ILLUSTRATION BY ROBERT BARKIN

The effectiveness of teaching reading comprehension strategies has been the subject of over 500 studies in the last 25 years. The simple conclusion from this work is that strategy instruction improves comprehension. Much more difficult to answer are the interesting questions that follow: How much do strategies help? How do they work? Do all students benefit? How much time should be spent on them? The answers are not yet clear, but combining what cognitive scientists know about reading with patterns of data from experiments conducted in classrooms allows us to draw some tentative conclusions. It appears that reading strategies do not build reading skill, but rather are a bag of tricks that can indirectly improve comprehension. These tricks are easy to learn and require little practice, but students must be able to decode fluently before these strategies can be effective.

Let's begin by considering what cognitive scientists know about the process of reading comprehension, because that will help us understand what strategies might do for the student. Reading comprehension actually overlaps quite a bit with the comprehension of spoken language. Children

*See "How Knowledge Helps" in the Spring 2006 issue: www.aft.org/pubs-reports/american_educator/issues/spring06/willingham.htm.

Listening comprehension processes greatly aid reading comprehension, but most speaking and reading situations differ in an important way. Speakers monitor their listeners' comprehension.

mean?") or indirectly ("And so we took the subway, you know, the blue line?"). You, the listener, signal comprehension by answering these questions affirmatively, and by nodding and acknowledging comprehension ("right, uh huh") even when the speaker has not posed a question. If you signal that you're confused, the speaker will describe the confusing material in another way. Speakers do not typically continue until they are sure that the listener understands (Clark and Schaefer, 1989). In addition, listeners typically monitor their own comprehension, even if they are not prompted by the speaker. Although this ability becomes more sophisticated as children grow, even kindergartners show that they know when they do or do not understand (Flavell, Speer, Green, August, and Whitehurst, 1981).

Reading is different in two ways. First, the burden of monitoring comprehension is entirely on the reader. The author cannot monitor your comprehension the way a speaker does when you are listening. Surely you have had the experience of reaching the bottom of a page and realizing that you weren't really following what the author was saying, or that you were thinking about something other than the book entirely, even though your eyes had passed over the words. In either case, you would start reading the passage again. In so doing, you are monitoring your comprehension, finding that it is incomplete, and trying to correct it. The second important difference between reading and conversational speech lies in what can be done when you're confused. In reading, you are stuck with the one description that the author wrote. You cannot (as you could when listening) ask for a different phrasing or easily find out the definition of a word.[†]

So how do students understand what they read? Understanding individual sentences can usually be supported by listening comprehension processes and, therefore, does not pose a problem for a proficient decoder, provided he knows the vocabulary and has sufficient background knowledge. But, relating sentences to one another does pose a challenge, and it is essential for reading comprehension. There are two levels at which the effective reader will relate sentences: a textbase, which is derived from the text, and a situation model, which relies on both the text and the reader's background knowledge. Let's look at examples of each, beginning with the textbase. A textbase is a web of connected ideas created from what you've read. Ideas are linked when sentences refer to the same people or things, or if a causal connection can be drawn between them. Consider these three sentences:

Bill came to my house yesterday. He dropped a cup of coffee. My rug is a mess.

The first two sentences would be connected in a textbase because both refer to the same object—Bill. The third sentence doesn't share a referent with either of the first two sentences, but it can be related causally to the second. You

come to school having already learned the complex process of using grammatical rules to extract meaning from strings of words, and they use these same processes to enable reading comprehension. The contention that listening comprehension contributes to reading comprehension is supported by data showing that there is a very strong relationship between adults' reading comprehension and listening comprehension abilities (e.g., Gernsbacher, Varner, and Faust, 1990). Children's reading comprehension and listening comprehension are also correlated, but not as strongly because they vary in their decoding ability (e.g., Curtis, 1980). It might seem, then, that teaching children to read should just be a matter of teaching them to decode letter strings into words fluently; and that once they have decoded the words, they can understand them by using listening comprehension processes that are already in place. (This generalization assumes that they know the vocabulary in the sentence, and have some familiarity with the subject matter, issues that I'll take up later.)

Listening comprehension processes greatly aid reading comprehension, but most speaking and reading situations differ in an important way. Speakers monitor their listeners' comprehension. For example, when a friend tells you a story, she does not just plow through from beginning to end. Periodically she asks a question, the purpose of which is to ensure that you understand what she's saying. The question might check your understanding directly (e.g., "You know what I

[†]There are exceptions to these generalizations. For example, when one listens to a speech, or to radio broadcast, the speaker does not monitor the listener's comprehension, and comprehension checks do take place for some written communications, e.g., instant messaging conversations.

How does one get a rich understanding? By relating what you are reading to other material that you already know.

you don't really know what logistic regression is good for. You know it's good for predicting group membership, which is provided as an example of a discrete outcome, but you can't generalize beyond that example. When you are able to relate what you read to information that you already know, you can develop a situation model. As the name implies, it describes your understanding of all the component ideas, coalesced into a grander model of the situation. Consider this set of sentences:

I approached the carnival game hesitantly. The goal was to throw a ping pong ball toward a table on which sat dozens of small bowls. If your ball landed in a bowl, you won one of the enormous stuffed bears that lined the top of the booth. Three throws for a dollar. The bowls seemed close together—how could I lose? The man working the booth was old, and had uneven, tobacco-stained teeth. When he noticed me lingering nearby, he winked and said, “Come along. You look like a winner.”

The textbase for this paragraph would include the interrelations of the ideas in the sentences. The situation model would include more, for example, the idea that if I play, I'm likely to lose. Although that information is not in the text, it would be in long-term memory—possibly from having been to a carnival and tried this game yourself—and would be relevant to your full understanding of the text. As I will discuss further at the end of this article, this is why it is so essential to build students' background knowledge. The more information they have stored in long-term memory, the more likely they are to be able to develop a situation model, and the better their reading comprehension.

To review, I've named three factors that are important in reading comprehension: monitoring your comprehension, relating the sentences to one another, and relating the sentences to things you already know. The key question is this: Can we instruct students to do these things? Most of the strategies that educational researchers have tried to teach to developing readers target one of these three processes. The table (on page 43) shows 16 strategies that have been tested in classroom experiments between 1980 and 1998. Fifteen of these strategies are distinct; the remaining one, called “multiple strategy instruction,” combines several strategies (usually summarization, prediction, question generation, and clarification of confusing words or passages). These categories of strategies were distilled from 481 studies evaluated by the National Reading Panel (2000), a group of outstanding researchers gathered by the National Institutes of Health. The panel spent two years evaluating different methods of teaching reading. As part of that effort, they evaluated research on teaching students reading comprehension strategies. I've organized their list of 16 strategies to emphasize the cognitive process that each one targets. As the table indicates, most of the strategies that reading researchers have tested target one of the three cognitive processes that I've said are important to reading with understanding: monitoring your comprehension,

assume that Bill's spilled coffee created the mess.

Building a textbase is necessary, but it's not sufficient for real comprehension—that requires a situation model. Consider these three sentences:

Logistic regression allows one to predict a discrete outcome such as group membership from a set of variables that may be continuous, discrete, dichotomous, or a mix. Because of its popularity in the health sciences, the discrete outcome in logistic regression is often disease/no disease. For example, can presence or absence of hay fever be diagnosed from geographic area, season, degree of nasal stuffiness, and body temperature? (Tabachnick and Fidell, 2007)

Each of these sentences shares referents, so you could build a textbase. You could use that textbase representation to answer some questions about the paragraph, even if you didn't understand the meaning very well. For example, if I asked you, “What does logistic regression do?” you could use the textbase to answer, “Predict a discrete outcome, such as group membership.” But unless you have some background in statistics, you won't feel that you have a rich understanding of the paragraph's meaning.

How does one get a rich understanding? By relating what you are reading to other material that you already know. For example, if you don't know what a “discrete outcome” is,

Three factors are important in reading comprehension: monitoring your comprehension, relating the sentences to one another, and relating the sentences to things you already know.

relating the sentences to one another, or relating the text to what you already know. So, do these strategies help students?

Evidence That Strategy Instruction Helps

The National Reading Panel conducted a comprehensive review of all of the 481 studies on reading strategies published between 1980 and 1998. The Panel set stringent criteria as to which studies to consider in drawing their conclusions: The studies had to 1) be peer-reviewed and published in a scientific journal, and 2) show a causal relationship. Many studies that showed that better readers are more likely than poor readers to use reading comprehension strategies were not considered by the panel because they did not meet the second criterion. One cannot conclude a causal relationship (i.e., strategies make you a better reader) from the correlation (better readers tend to use strategies).[‡] Ultimately, the NRP deemed 205 of the studies worthy of consideration as they tried to determine the effectiveness of reading comprehension strategies. As the table indicates, some strategies have been studied much more often than others. Across all of these studies, there was a range of student ages, but the majority ranged from grade three to grade six.

The Panel concluded that eight of the 16 strategies “appear to have a firm scientific basis for concluding that they improve comprehension in normal readers.” Those eight are

indicated in the table. Just how much do the strategies help? Unfortunately, at this point we can only answer that question for two of the eight effective strategies—question generation and multiple strategy instruction. Here’s why: Statisticians measure the size of an effect with a metric called “effect size,” signified as d . It’s basically a measure of how much a treatment (e.g., training students to use a reading strategy versus not training them) affects an outcome (e.g., performance on a reading test). The advantage of d is that it’s independent of the particular measure used, so you can compare the size of an effect even if experimenters used different tests. Most of the 205 studies did not provide enough detail for the Panel to calculate d , but they could do so for studies on question generation and multiple strategy instruction.

The important finding from those two groups of studies is that the apparent helpfulness of a strategy depends on how reading comprehension is measured. In virtually all of the studies, the experimenter selected the reading material and designed the comprehension test. In some experiments, the authors also used a standardized reading test, often the Gates-MacGinitie (Gates-MacGinitie, 1989). A consistent finding was that the d for the experimenter-written tests was much larger than for the standardized reading tests. For the studies on question generation, d averaged about 0.90 for experimenter-written tests, which is an enormous effect—comparable to a student moving from the 50th to the 82nd percentile. For standardized tests, d was a still-respectable 0.36—comparable to a student moving from the 50th to the 64th percentile. The pattern was very similar for the multiple strategy instruction experiments (experimenter-written tests, $d = 0.88$; standardized tests, $d = 0.32$). Even though the Panel was unable to calculate effect sizes for the six other effective strategies, it did note that for those experiments too, statistically significant effects were more often observed when an experimenter-designed test was used than when a standardized test was used. Studies that have been published since the Panel review and that used different instruction strategies show a strikingly similar pattern in effect sizes for experimenter-designed versus standardized tests (e.g., Alfassi, 2004; Johnson-Glenberg, 2005; McNamara, 2004; VanKeer, 2004).

Why was the effect so much smaller on standardized tests? The likely explanation concerns the reading material that would be used on each test. Researchers have found that the strategies that students learn are not equally applicable to every text that they read (Magliano, Trabasso, and Graesser, 1999; Narvaez, van den Broek, and Ruiz, 1999). Some texts have a lot of details (e.g., a description of a trip to Hawaii) and are well suited to students asking themselves questions. Other texts are organized rather obviously around a single, main idea (e.g., a text about the first settlement of Hawaii by Polynesians). Laboratory tests also show that asking readers to use different strategies leads them to make different inferences (Narvaez et al., 1999). If I ask you to generate questions as you read (who, what, why, where, when, how) you might not stop to think about what the main idea of the text is.

When creating a reading test, an experimenter might unconsciously select passages that are well-suited to the strat-

Strategy	Number of studies	Evidence of effectiveness	Strategy description
<i>Strategies designed to encourage students to monitor their comprehension:</i>			
Comprehension monitoring	22	Yes	Readers are taught to become aware of when they do not understand, for example by formulating what exactly is causing them difficulty.
Listening actively	4	Research inconclusive	Students learn to think critically as they listen and to appreciate that listening involves understanding a message from the speaker.
<i>Strategies designed to encourage students to relate sentences to one another:</i>			
Graphic organizer	11	Yes	Students learn how to make graphic representations of texts, for example, story maps.
Question answering	17	Yes	After students read a text, the teacher poses questions that emphasize the information students should have obtained from the text.
Question generation	27	Yes	Students are taught to generate their own questions, to be posed during reading, that integrate large units of meaning.
Summarization	18	Yes	Students are taught techniques of summarizing, e.g., deleting redundant information and choosing a topic sentence for the main idea.
Mental imagery	7	Research inconclusive	Students are instructed to create a mental visual image based on the text.
Cooperative learning	10	Yes	Students enact comprehension strategies—for example, prediction and summarization—in small groups, rather than with the teacher.
Story structure	17	Yes	Students are taught the typical structure of a story and learn how to create a story map.
Multiple strategy instruction	38	Yes	Multiple strategies are taught, often summarization, prediction, question generation, and clarification of confusing words or passages.
<i>Strategies designed to encourage students to relate sentences to things they already know:</i>			
Prior knowledge	14	Research inconclusive	Students are encouraged to apply what they know from their own lives to the text, or to consider the theme of the text before reading it.
Vocabulary-Comprehension relationship	3	Research inconclusive	Students are encouraged to use background knowledge (as well as textual clues) to make educated guesses about the meaning of unfamiliar words.
<i>Other strategies:</i>			
Curriculum	8	Research inconclusive	Instruction is carried to the curriculum beyond reading. Thus, students might study story structure during reading time, apply the structure themselves during writing time, and look for story structure during social studies.
Mnemonic	2	Research inconclusive	Students are taught to associate a keyword with some aspect of the text to help memory for that aspect; it is designed for use with very unfamiliar texts.
Psycholinguistic	1	Research inconclusive	Students are taught language conventions that will help comprehension; for example, how to find the antecedent of a pronoun like “she.”
Teacher preparation	6	Research inconclusive	Teachers learn techniques by which to teach reading strategies.

Source: National Reading Panel (2000). Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction. Washington, D.C.: National Institute of Child Health and Human Development.

egy that students are learning. The texts that appear on standardized reading tests, however, are more unpredictable and varied. That probably explains why reading strategies look so much more effective when experimenters' tests are used as the measure. But make no mistake, when standardized read-

ing tests are used, there is still a positive effect of teaching students reading strategies, and the effect is not trivial.

A Deeper Look at What Reading Comprehension Strategies Do

Most research has evaluated whether or not teaching reading comprehension strategies is effective; it has not evaluated which strategies are most effective, or what type of student

‡ In fact, it's known that poor readers may fail to use strategies (e.g., monitor their comprehension) because their other reading processes don't work well (Otero and Kintsch, 1992).

Reading strategy programs that were relatively short (around six sessions) were no more or less effective than longer programs that included as many as 50 sessions.

benefits most from learning them. Still, patterns in existing data provide clues about what reading strategies do and, therefore, how they should be taught.

First, the evidence for the effectiveness of reading strategies is weak for students in the third grade or earlier. The National Reading Panel claimed that positive results could be observed at all grade levels, which is true, but it's also true that the results are more consistently positive in grades four and later. Furthermore, the data for grades three and earlier look much weaker when one limits the analysis to experiments that used standardized test scores. Data published since the Panel's report support this pattern: Effects for third-graders are weak or absent (e.g., Johnson-Glenberg, 2000; Janzen, 2003; Vaughn et al., 2000). This finding seems sensible in light of the cognitive processes necessary to implement reading strategies. Strategies require attention and space in working memory (e.g., Cain, Oakhill, and Bryant, 2004; Calvo and Castillo, 1998). Students who are still learning to decode fluently do not have enough working memory space available to implement strategies. Their working memory is occupied by decoding. A natural conclusion is that there is not much point in teaching reading strategies before students have gained that fluency—for most students, that will be in the third or fourth grade.

A second important finding from studies of reading strategies concerns how much time students should spend practicing

them. In two meta-analyses, Rosenshine and his colleagues (Rosenshine and Meister, 1994; Rosenshine, Meister and Chapman, 1996) reported that spending a lot of time practicing the strategies did not have an effect. Reading strategy programs that were relatively short (around six sessions) were no more or less effective than longer programs that included as many as 50 sessions. How can it be that practice doesn't add to the effectiveness of reading strategies? Practice is usually essential for the development of a skill.

Based on my reading of the research and my knowledge of cognitive science, I think that the answer may be that successfully implementing a reading comprehension strategy is not a skill at all. It may be more like a trick in that it's easy to learn and use, and the only difficulty is to consistently remember to apply it. An analogous process may be checking one's work in mathematics. There is not a lot to learn in checking your work; it's not a skill that requires practice. But you do have to remember to do it. Checking your work is analogous to reading strategies in another way. Checking your work will make it more likely that you get a problem right, but it doesn't tell you how to solve the problem. Similarly, reading strategies don't get reading comprehension done. They encourage the student to apply reading comprehension processes. If the comprehension processes can't do the job, reading strategies won't help much. For example, in order to "summarize," you need to comprehend enough to differentiate the main idea from subordinate ideas. For "comprehension monitoring" to be useful, not only do you need to recognize that you don't understand a passage, but also to be able to comprehend the material when you reread it.

If reading comprehension strategies are quickly learned tricks, that has another implication for the studies I've discussed here. The studies may well underestimate how much reading strategies actually help. When a teacher presents a reading strategy to students, we can assume that there are three types of students in the class: students who have already discovered the strategy (or something similar) on their own, students who are not fluent enough decoders to use the strategy, and students who are good decoders but don't know the strategy. Only the last group of students will benefit from reading strategy instruction. When a researcher finds an average effect size of $d = 0.33$ for teaching students the strategy, that effect is probably actually composed of many students who showed no benefit and a smaller number of students who showed a large benefit. To evaluate whether or not this is true, reading researchers would have to conduct studies designed to evaluate the progress of each child, rather than the average progress. To my knowledge, such a study hasn't been done.

There is another way in which published studies may have underestimated the impact of teaching one reading strategy in particular: comprehension monitoring. The point of this strategy is to get students to recognize when they do and do not understand something and to realize that if they do not understand, they need to reread the passage. But standardized reading tests present students with questions immediately after they read a passage.

Teaching reading strategies is a low-cost way to give developing readers a boost, but it should be a small part of a teacher's job. Acquiring a broad vocabulary and a rich base of background knowledge will yield more substantial and longer-term benefits.

These questions make it evident to the student whether or not she understands. Thus, students in the control condition of a study (who have not been taught to monitor their own comprehension and normally would not do so) have their comprehension monitored for them—the test questions make it evident to the student if they do not understand a passage. Thus, reading tests may underestimate how much it helps to teach students to monitor their own comprehension.

Reading Strategies in the Classroom

We can summarize what we know from the last 25 years of research on reading comprehension strategies fairly concisely:

- Teaching children strategies is definitely a good idea.
- The evidence is best for strategies that have been most thoroughly studied; the evidence for the less-studied strategies is inconclusive (not negative) and, therefore, there is not evidence that one strategy is superior to another.
- Strategies are learned quickly, and continued instruction and practice does not yield further benefits.
- Strategy instruction is unlikely to help students before they are in the third or fourth grade.

These facts, along with what we know about the cognitive processes of reading, give us a broader view of what strategy instruction might do for the young reader. In my view,

the main effect of strategy instruction may be to push the reader toward a new understanding of reading. It is not just a matter of decoding words, but is more a matter of comprehending a meaningful message that the author is trying to communicate, and the student hasn't truly "read" the material until he or she understands the message. This new view of reading leads the student to engage different processes when she reads—for example, rereading material that is not understood and seeking clues in the text to help comprehend difficult material. It is likely that the student would eventually come to this understanding of the purpose of reading on her own, but it confers a significant advantage to comprehension, and should certainly be taught, rather than waiting for the student to stumble on it.

I suggest that the main effect of reading comprehension strategies is to encourage a new view of reading because I don't believe that students continue using these strategies into adulthood. Literate adults do not construct story maps as they read the morning paper, nor do they pose and answer questions for themselves. They do, however, understand that the goal of reading is to obtain meaning, and they monitor their own comprehension; that understanding is likely what remains with the tenth-grader who was taught a set of reading strategies in fourth grade.

This view of reading strategies leads to straightforward suggestions for classroom application. Students must have achieved some level of fluency for reading strategies to be effective, so there is little point in teaching them before the third or fourth grade. Students will, of course, vary in fluency, so some students will be ready when others are not. Therefore, it may be sensible to teach one reading strategy in each of the fourth, fifth, and sixth grades (or later for students who are slow to develop fluency). Doing so should be feasible because strategy instruction need not be lengthy—five or six sessions will do—and teachers can avoid repetition by teaching different strategies each year. Teaching reading strategies is worthwhile, but we should bear in mind that knowledge of strategies is only a small part of what makes an effective reader. A good reader also decodes fluently, has a broad vocabulary, and has wide-ranging background knowledge.

The need for a broad vocabulary should be self-evident. It's hard to understand the meaning of a sentence if you don't know the meaning of the constituent words. There are times when you can deduce the meaning of an unknown word from the context, but you need to understand most of the text to be able to puzzle out the meaning of the unknown word. Your ability to do so drops rapidly, however, as the number of unfamiliar words increases (Laufer, 1997).

Background knowledge also has profound effects on reading comprehension. Have another look at the three classes of strategies in the table—two of them rely on or are facilitated by background knowledge. Encouraging students to relate the text they are reading to background knowledge won't help much if the students don't have the relevant background knowledge. Less obvious is the fact that relating sentences to

(Continued on page 50)

Science Careers for the “Why Take Science?” Crowd

By Megan Sullivan and Steve Metz

Budget cuts in high school guidance offices often make it difficult for students looking for information about careers. It is easy—and common—to drift through school science and math classes wondering, “Why do I need to learn this?” Many students do not see a college science major or science career in their future, making the need to learn science less than obvious. Of course, the best reason for learning science is that understanding science is important in and of itself, as part of humankind’s search for knowledge and meaning. Understanding science makes everything—a walk in the woods, reading a newspaper, or watching the news on TV, a family visit to a science museum or beach—more interesting. The grand enterprise that is science springs from the most basic and fundamental of human desires: to make sense of the world.

But the next-best answer to the question—why do I need to learn this?—may be more practical and persuasive. *All in a Day’s Work* is a new book aimed at giving high school students a taste of the diversity of careers in which science is used. They range from the expected—high school science teacher, microbiologist, and forensics technician—to the perhaps unexpected—firefighter, landscape architect, and historical archaeologist—to the adventurous—astronaut, deep-cave explorer, and oceanographer—and to the offbeat—roller coaster designer, perfumer, and sport biomechanist.

Megan Sullivan is associate editor of The Science Teacher, a journal published by the National Science Teachers Association for its high school teachers. Steve Metz is field editor for The Science Teacher. This article is excerpted with permission from Megan Sullivan’s All in a Day’s Work: Careers Using Science, © 2007 by NSTA Press (ISBN 978-1-93353-107-6). www.nsta.org

These careers are explored through profiles of 34 people, each of whom gives specific, no-nonsense, insider’s advice for those interested in pursuing the career, including where to go for additional information. These profiles also provide a fascinating glimpse of what it is like to do science from people actually engaged in applying science in their daily work lives. The stories are interesting in and of themselves, but they also give practical information about educational and other career requirements.

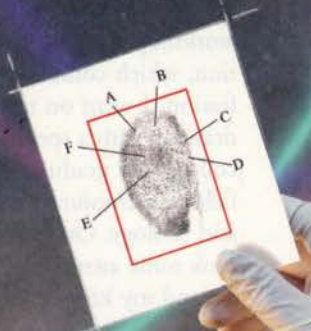
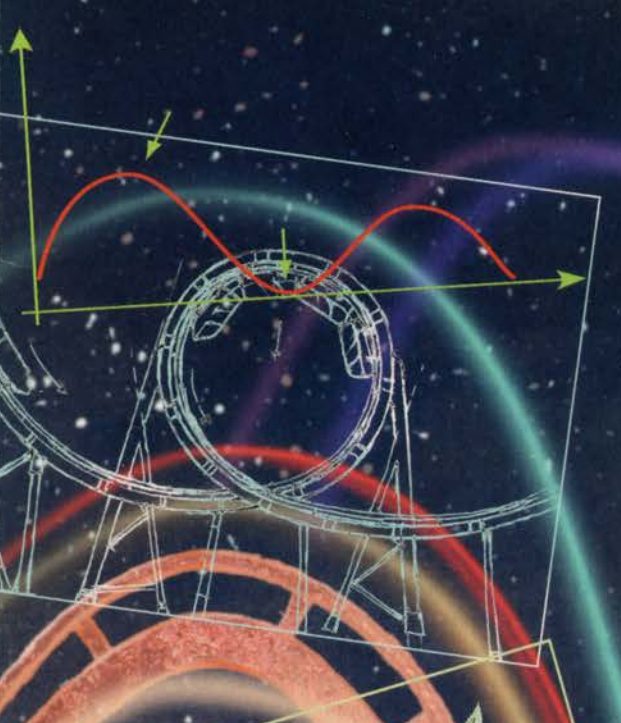
In this excerpt from *All in a Day’s Work*, three profiles are presented: scientific illustrator, roller coaster designer, and forensics services technician.

Scientific Illustrator

If you have an eye for nature’s details—such as the way some petals of a flower catch sunlight or how its stem is covered in tiny hairs—then you may be a good candidate for a career in scientific illustration. This career requires careful observation to create images of subjects such as animals, plants, insects, and in Lynette R. Cook’s case, outer space. These drawings, paintings, three-dimensional models, and computer graphics help viewers learn more about the subject at hand. Scientific illustration should not only inform people, it should also inspire them and help them appreciate the natural world.

What is your work like?

Before I illustrate a subject, I gather information from my client, tap into my own knowledge bank, and do any research necessary to learn more, such as consult with scientists, science writers, and editors. I then create imagery that is scientifically correct, visually appealing, and appropriate for the intended audience (e.g., students, the general public, or sci-



ence professionals).

The images can be found in books, magazines, scientific papers, posters, the Internet, and even PowerPoint presentations.

One ongoing project involves working with The California and Carnegie Planet Search team to illustrate planets they have discovered outside our solar system. These extrasolar planets are detected by indirect means—such as observation of a neighboring star's motion and brightness—and, therefore, can only be visually portrayed through artwork. A scientist tells me the type of star neighboring an extrasolar planet, the distance between the star and planet, and the planet's mass. These facts give me information about the color of both celestial bodies and whether the planet might be large and gaseous such as Jupiter or smaller, dry, and rocky such as Mercury. After doing some additional research, I try to create an accurate and aesthetically pleasing illustration of the new planet. Learning about extrasolar planets before they are publicly announced is exciting, as is showing through my artwork what these worlds might look like up close.

What is your background?

I have always loved both art and science. In high school, when I began to think about college and a career, I had trouble choosing one field over another. As an undergraduate, and back then, an overachiever, I majored in both painting and drawing and biology. I also attended a summer workshop held by the Guild of Natural Science Illustrators (GNSI). The workshop was my first formal training in scientific illustration, which combined my two areas of interest into one profession. I went on to graduate school for a master's degree in drawing with a specialization in scientific illustration. During college and graduate school, I didn't expect to end up in the field of astronomy and, therefore, focused on biology, botany, and zoology. Once I started working with celestial subjects, I took some astronomy courses at a local community college to expand my knowledge.

Advice for students?

Students can visit GNSI online (www.gnsi.org) to learn more about related careers, workshops, and lectures. The International Association of Astronomical Artists Web site (www.iaaa.org) is a good resource for information about space art specifically. While a science degree is not required in this field, greater subject knowledge makes an illustrator's job easier. Students interested in outer space should enroll in astronomy courses; for those who like plants, botany classes are helpful. Because computer programs are used for sketching and final artwork, digital knowledge and skills are needed. However, it is also very important to have conventional drawing and painting abilities. A final product might be digital, traditional, or a combination of the two. To practice essential observation and artistic skills, students should create realistic illustrations of objects. For example, if a student paints a bird, he or she must carefully study and accurately

record subtle details: its beak, leg, and wing proportions, and range of colors, highlights, and shadows.

Bonus Points

- Education: B.S., biology; B.F.A., drawing and painting; M.F.A., drawing, scientific illustration specialization
- On the Web: International Association of Astronomical Artists (www.iaaa.org); Guild of Natural Science Illustrators (www.gnsi.org)
- Related careers: Landscape architect, medical illustrator, scientific photographer, art conservator

Roller Coaster Designer

Thrill rides, scream machines, loop-de-loops, colossal peaks, and heart-stopping drops—roller coasters may seem to defy all laws of physics, but don't let that sense of danger fool you. A coaster has potential energy as it is pulled to the top of the highest hill, which changes to kinetic energy as the coaster begins its descent. Once the coaster is underway, gravity, velocity, friction, and acceleration are just a few of the physics principles controlling the ride. Although coasters are designed to be a frightening experience for passengers, in reality they are safer than crossing the street. Roller coaster designers like Kent Seko create these dynamic rides, which simulate such a genuine air of peril.

What inspired you to become a roller coaster designer?

I actually have a bachelor's degree in geography from the University of Utah. My true aspiration was to become an architect. Because architecture was not available as an undergraduate degree, I took pre-architecture classes (required for entry into the master's program) as electives. Many of these classes focused on design, which has helped me in the amusement industry. After college, a downturn in the architecture job market caused me to look for employment opportunities in other fields. I responded to an advertisement for Arrow Dynamics, the largest designer and manufacturer of amusement rides at the time, and was given a chance as an entry-level drafter. The scale and speed of the roller coasters being designed was mind-blowing. We were just completing the first 60.96 meters tall roller coaster during my first year of employment—a major threshold for coasters at that time. There are now rides over 91.44 meters tall. Several years into my employment at Arrow I was offered the opportunity to learn the ins and outs, or should I say the ups and downs, of coaster design. Fifteen years later I am still with the same company (now called S&S-Arrow, LLC). I have gained a lot of education through experience working in this field with some of the most knowledgeable people in the industry.

What does a roller coaster designer do?

The goal is to design the most exciting ride while meeting all specifications (e.g., the size of the site, location of loading station, other rides and buildings) defined by a client within a budget. Safety, of course, is of utmost importance. I spend a majority of my time designing and drawing models on a

computer. More often than not, my company is competing with other ride manufacturers to land a project. As part of a design team, I work closely with the marketing department to make sure we are meeting a prospective client's requirements. After a design has been finalized, the engineering stage of the project takes place to build and assemble all components of the ride. There is a lot of coordination that must go on between engineers, designers, and drafters during this stage of the project.

What advice would you give to an interested high school student?

I often receive inquiries from individuals who want to get involved in the amusement industry. I always tell them to study hard in school, particularly in math and physics. Unfortunately, there is no university of roller coaster design. Anyone interested in employment with a ride manufacturer should major in engineering in college—structural engineering if a student is interested in ride layout design or the design of the structure to support a roller coaster; mechanical engineering if a student is interested in designing the vehicles or other mechanical components of a roller coaster. Additionally, electrical engineers are required to design the control system of a roller coaster.

Bonus Points

- Education: B.S., geography
- On the Web: International Association of Amusement Parks and Attractions (www.iaapa.org)
- Related careers: architect, interior designer, graphic artist, electronic technician, aerospace engineer, drafter

Forensics Services Technician

As demonstrated by the popularity of such television shows as CBS's hit CSI, and Discovery Channel's The New Detectives, the intriguing field of forensic science is capturing the attention of many across the nation. But beyond entertainment and education, forensics plays a very real and crucial role in criminal investigation. Whether collecting evidence at a crime scene, processing evidence in the lab, or testifying in court, forensics services technicians (FSTs) unveil evidence that criminals aren't even aware they left behind. For Jason Birchfield, forensics supervisor of the Baltimore County Police Department Crime Scene Unit, science as an indispensable resource.

How did you become an FST?

I really did not get interested in the field of forensics until after high school. In college, I took a variety of classes in an attempt to find a subject that sparked my interest—an introductory criminal justice course did just that. I clearly recall the first time I observed a fingerprint brush during an instructor demonstration. Although I had an interest in the field of criminal justice, I did not aspire to be a police officer. At this crossroad I sought advice—the undisputed counsel was “go to school for something of interest and you will succeed.” After receiving a bachelor's degree in criminal justice I became a private investigator, gained some field experience,

and eventually attained a position with the police department as an FST. After three years I was promoted to my current position as supervisor.

What does an FST do?

We are responsible for identifying, collecting, and preserving evidence at crime scene investigations in support of law enforcement activities. Photographing crime and accident scenes—including burglaries, robberies, deaths, autopsies, and assault victims—is necessary to record the appearance of evidence. FSTs also identify, collect, and secure physical evidence such as blood, body fluids, hair, fibers, firearms, and narcotics for laboratory testing and use as evidence in criminal prosecutions. We search for and develop fingerprints at crime scenes and participate in laboratory processing, as well as photograph and fingerprint suspects and victims. Other responsibilities include producing castings of footprints, tire tracks, and other impressions; preparing court presentations of evidence; and testifying in court.

What type of forensic evidence do you primarily rely on?

The importance of obtaining fingerprints in criminal investigations has long been considered one of the most valuable types of physical evidence that can be found at a crime scene. There are three different types of fingerprints: visible, impression, and latent. Latent fingerprints are composed of several chemicals exuded through fingertip pores and are left on virtually every object touched. To retrieve these latent prints, we collect evidence from a crime scene, bring it to the lab, and process it using different techniques such as, cyanoacrylate (super glue fumes), ninhydrin, fingerprint powder, magnetic powder, chemical dye stains, and digital photography. After the prints are recovered through those methods, digital images are taken and enhanced. Prints are then examined; once the unique characteristics are identified, the prints are imported into the Automated Fingerprint Identification System database to search for possible hits. No two people have the same fingerprints; we clear more crimes using prints than any other type of forensic evidence.

What background is needed?

The minimum educational background required for an FST is a bachelor's degree within a subject such as criminal justice, criminalistics, law enforcement, biology, or chemistry. However, employers also weigh field experience when hiring forensic technicians. Students interested in the field must also be aware that a complete background investigation will be conducted upon application.

Bonus Points

- Education: B.S., criminal justice
- On the Web: American Academy of Forensic Sciences (www.aafs.org); International Association for Identification (www.theiai.org)
- Related careers: Medical examiner, police officer, crime laboratory analyst, forensic toxicologist, psychological profiler □

Cognitive Scientist

(Continued from page 45)

one another also often requires background knowledge. That's because authors often do not spell out how sentences relate—the author assumes that the reader can do that work. In one of the examples discussed earlier, it's assumed that the reader knows that spilled coffee makes a mess.

The writer cannot specify every last detail or the text would become impossibly long. The writer must make assumptions about what the reader knows. If the level of knowledge that the writer assumes does not match the level of knowledge that the reader actually has, the reader won't comprehend the text. By the same reasoning, an individual with background knowledge on a wide variety of subjects will less often be confused when reading than an individual with limited background knowledge in long-term memory. Indeed, general world knowledge is a strong predictor of reading ability (Kosmoski, Gay and Vockell, 1990). Thus, two of the three categories of reading strategies depend on background knowledge for their successful application.

In the final analysis, how should we think about reading strategies? Teaching reading strategies is a low-cost way to give developing readers a boost, but it should be a small part of a teacher's job. Happily, students can learn them quickly and they are effective, but they appear to deliver a one-time boost. Acquiring a broad vocabulary and a rich base of background knowledge will yield more substantial and longer-term benefits,

but doing so is more difficult and time consuming. This knowledge must be the product of years of systematic instruction as well as constant exposure to high quality books, films, conversations, and so on, which provide students with incidental exposure to a great deal of new vocabulary and knowledge. □

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Critics' Claims

(Continued from page 31)

³Marguerite Roza with Larry Miller and Paul Hill (2005). *Strengthening Title I to Help High-Poverty Schools*, Center on Reinventing Public Education, Evans School of Public Affairs.

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⁵Gail Sunderman and Jimmy Kim (2005). *Teacher Quality: Equalizing Educational Opportunities and Outcomes*. Cambridge, Mass.: The Civil Rights Project at Harvard University.

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when boys grow up too soon

WHAT EDUCATORS NEED TO KNOW ABOUT PRECOCIOUS PUBERTY IN BOYS



Does one of your students appear to be reaching puberty too quickly—perhaps far sooner than children his own age? This may be the result of a rare medical condition known as precocious puberty.

Is he acting aggressively or inappropriately?

Is he showing signs of early physical development such as facial and underarm hair?

Is he unusually tall for his age?

Does he have acne?

Is his voice deepening?

Does he get into fights or not listen to instructions?

A rare medical condition known as precocious puberty may lead to aggressive behavior, facial hair, and acne. Maturing early might not sound like a big concern. But precocious puberty may cause serious difficulties for boys.

Difficulties in school

Boys with precocious puberty are often overly aggressive, which can lead to problems in school. Some parents and teachers mistake this condition for ADHD (Attention Deficit Hyperactivity Disorder).

Threats to self-esteem

All children want to fit in—to look and feel like others their age. Early puberty can make boys feel embarrassed as they outgrow their friends and show signs of sexual maturity at an early age.

What is early puberty?

Hormones control many of the body's functions including the physical changes that happen in the preteen and teen years. These include rapid growth in height, development of the sexual organs, appearance of body hair and acne, development of muscles, and deepening of the voice. When the body starts producing certain hormones too early in life, these physical changes can occur well before they are supposed to occur. This condition is known as precocious puberty, and the medical term for it is "testotoxicosis." In boys with this condition, these changes can sometimes begin as early as age 2.

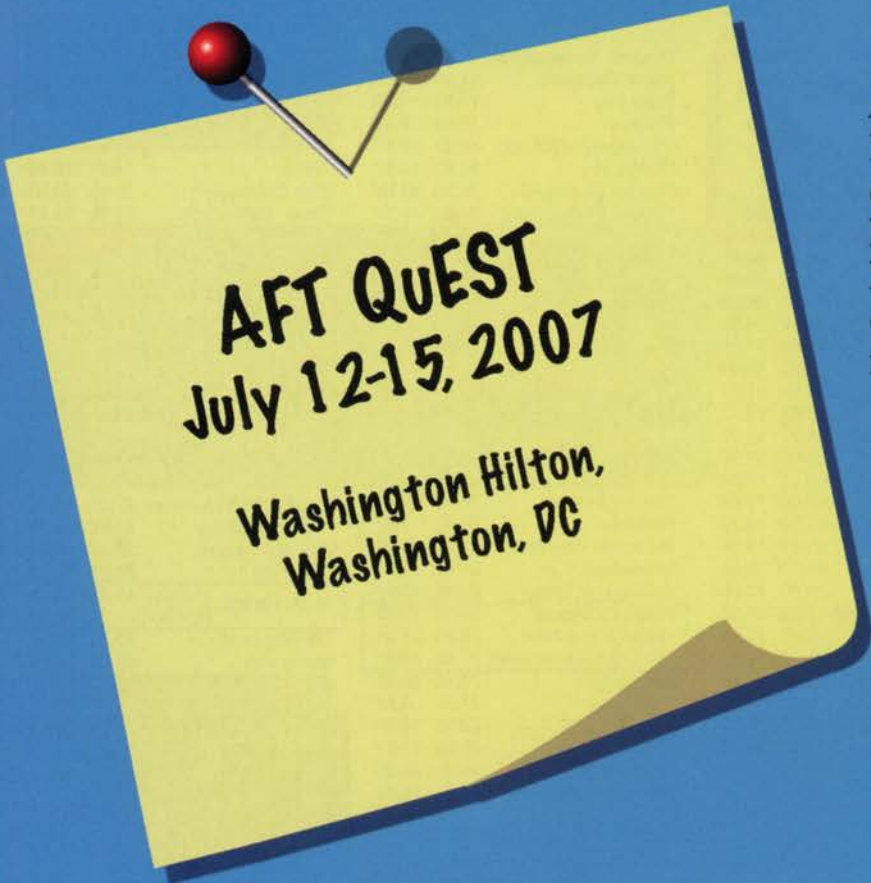
A clinical study is available

AstraZeneca is conducting a clinical research study for testotoxicosis, a form of precocious puberty. Boys with this condition may be eligible for enrollment in the trial if they are at least 2 years of age and meet certain medical requirements.

Patients who are accepted into the study will receive the study drugs free of cost. They will also receive free, annual study-related follow-up visits until they achieve their final adult height.

If you believe a student may have precocious puberty, please contact the AstraZeneca Information Center at **800-236-9933** for more information suitable for sharing with parents.

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