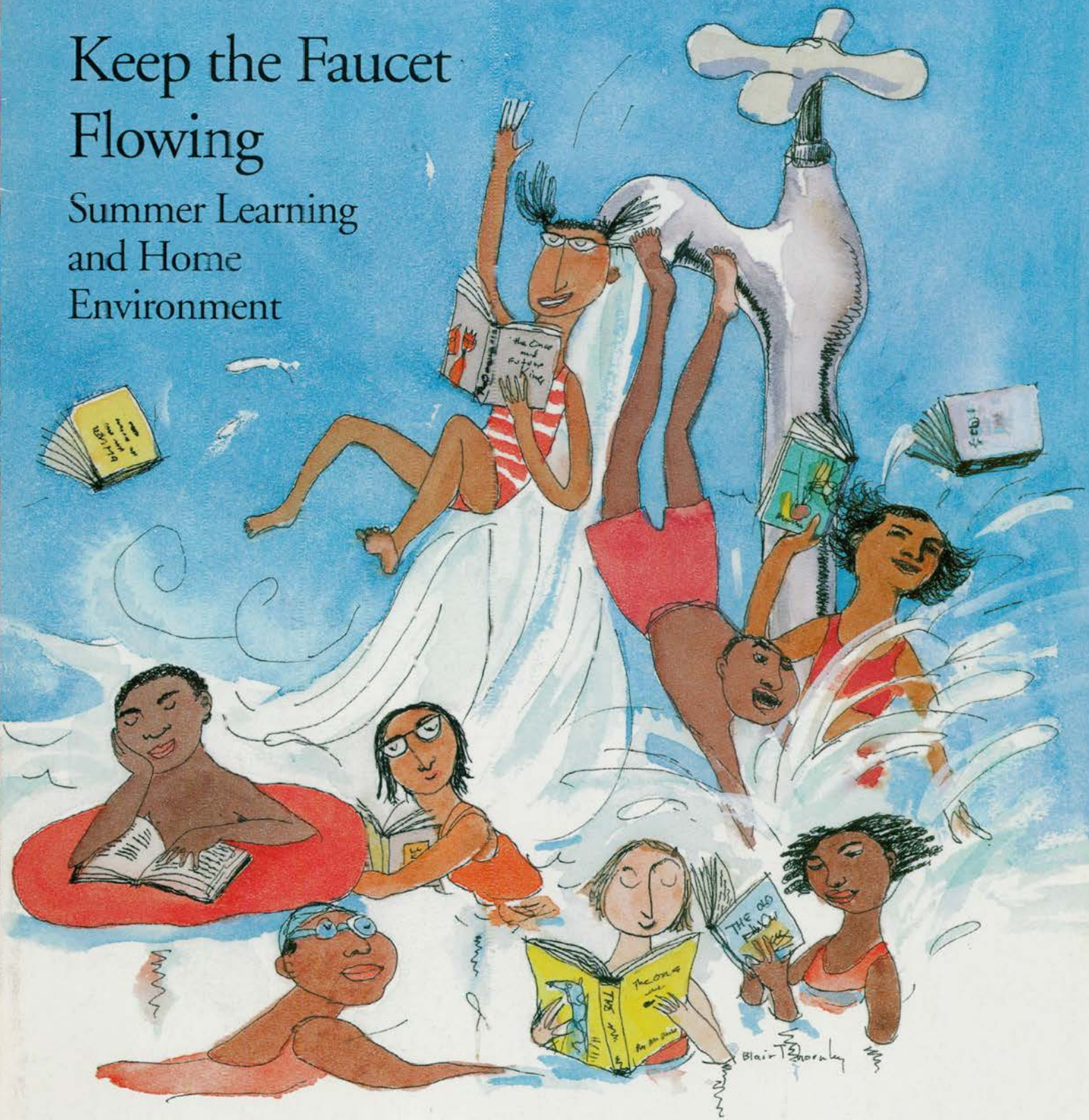
AMERICAN FEDERATION OF TEACHERS
FALL 2001

AMERICAN Educator

Keep the Faucet Flowing

Summer Learning and Home Environment



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"They became the producers of their own stories. The writer, the editor, the director – some even became the actors."

Marco Torres,
High School Social Studies Teacher

"They invited their families to come and see these very personal movies. That night there wasn't a dry eye in the entire room."

United States. The students then edited their footage with iMovie.™ And the results were simply incredible. "About a week into the project they got so involved that their grade became insignificant. The most important thing was their story. It was wonderful because I got to see all the skills that corporate America and higher academia are looking for – teamwork, collaboration, problem-solving, being agile and thinking on their feet." To see how this inspiring project helped Marco strike a chord with his students and to learn more about how you can use iMovie to enhance your own lesson plan, visit www.apple.com/teachimovie or call 1-800-800-APPL.

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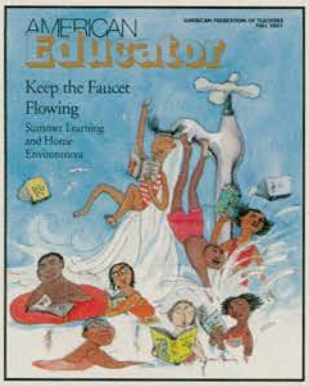

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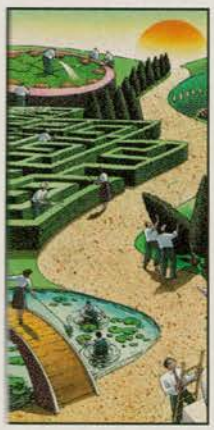

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LETTERS

The Spring 2001 issue was the best I've ever read of the *American Educator*. Simply splendid in the subject material—and the quality of the pieces. The lead piece on the absence and crisis of parenting is as good an assessment of this issue as I have ever seen. Judging by the response of the letters, so do many others. Sadly the inane losers of the parenting game will be the last to understand the implications so cogently presented in the article.

—Prof. Nickolas Lupinin
Peterborough, NH

I have been in the field of education for more than thirty-five years, and still feel the enthusiasm I had as a novice teacher. The articles I read in *American Educator* renew my faith and love for my profession, of which I am proud. I once enrolled my class in AFT's Classroom-to-Classroom Program, which linked us with a class in Albania, and I am still in touch with one girl, who also writes to a few girls who were in that class. It was an experience the children and I never forgot.

As for the articles you have recently published regarding American children, such as "The Teening of Childhood" and "Why Aren't We Saying *No*," I have given them to concerned parents in and out of schools, and they have raved about them as food for serious thought. I have just ordered the book *50 American Heroes Every Kid Should Meet,* as I always emphasize the true meaning of the word "hero," and—as a media specialist—the importance of reading biographies. I often read short stories about worthy individuals to my classes. Your article gave me new ideas for next year!

Please keep addressing vital issues by authors who write with such conviction. This is one publication that should be required professional reading!

—Pru Warren
Franklin Square
Long Island, NY

I wholeheartedly commend you on both the spring and summer issues of *American Educator.* I was not able to read the spring issue until after I completed my exams for National Board Certification, and when I did sit down to read articles like "Parenting: The Lost Art," I found great consolation, especially after struggling with my own moral dilemma relative to the Adolescent and Young Adult English Language Assessment (AYAELA) reading and viewing materials list sent to National Board candidates in preparation for our exams in May and June.

As a high school English teacher for

Write Us!

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twenty years, I have always maintained very high standards both in what I expect of the students and in the materials I bring into the classroom. Recognizing that these students come from diverse backgrounds, and honoring parents' concerns over what their children read and view in the classroom, I have always selected for whole class study those works that I feel are acceptable to parents who—as author Kay Hymowitz puts it—have not failed to "define a moral universe for their children." Parents and students have the greatest latitude in choosing works for out-of-class study. But, I am careful about the films I show to a "captive" audience in a public school classroom.

Ironically, several of the required selections on this year's AYAELA exam list were print or film works that I would not, and indeed "could not," use in my large suburban high school classroom, even though I personally find merit in them. For example, the film *Good Will Hunting* does portray a tremendously gifted young adult male who, with counselor Robin Williams' help, begins a healing process that the viewer hopes will enable him to be a whole person. However, there is not one five-minute clip that does not include "f---"; and the obvious bar joke where Minnie Driver gags about oral sex while burbling out her drink would be highly offensive in a public school classroom. Or am I missing something as a "modern teacher" and parent? Additionally, I was very moved by reading Toni Morrison's *Beloved* and Allende's *The House of the Spirits,* but these also present content that, though the National Board for Professional Teaching Standards, insists is "suitable for all twelfth grade students," I (and my colleagues with whom I studied for the exam) agree we would not "teach" in public high school. Artistically each of these is extraordinary. In terms of content, however, there is reference to sex with animals, oral sex, graphic description of pedophilia and incest, extreme brutality, surrealistic images—many of them gory—that "all twelfth grade students" would certainly not see beyond their literal presentation.

Let me set the record straight. I am *not* an advocate of extreme censorship. I would not hesitate to teach any of these in a college class. Nor would I discourage any child from extending his or her reading by choosing any of these works. However, I take issue with their choice for whole class instruction in public high school.

When I read "Parenting: The Lost Art," I felt a mix of outrage and disappointment. It was easy for me to apply much of what I was reading in the article about "modern" parents to whatever authoritative committee selected the works for the exam in my subject area.

Your article talks about parents having the courage to define a "moral universe" for their children. Parents should be concerned about what is taught in the classroom. Parents and administrators should question the wisdom of subjecting students to two hours of expletives in a video. Parents should wonder about the impact that graphic print images have on their children.

And a teacher—like me, for example—should question the values inherent in the learning materials recommended by the highest and currently "most prestigious" educational body in the profession: The National Board for Professional Teaching Standards.

—KATHLEEN RICHARDVILLE
Orlando, FL

WHAT IS A MAN?

Ordinarily I find the articles published in this journal professional and informative. However, I take exception to the biased article by Waller R. Newell (Summer 2001). Reading this piece, I felt as if the world had suddenly receded to the nineteenth century. How typical of misogynist thinking to blame the current social problems on feminism. Professor Newell's agenda is loud and clear: If women would only return obediently to their prescribed roles of mother, sister and wife, then white men could continue unimpeded with their three-thousand-year-old legacy of master of the world!

Professor Newell needs to update his fossilized thinking. Reading some of the brilliant publications by "feminist" historians, philosophers, and literary critics would assist in liberating him from his anachronistic views—that is—if he could but read with an open mind.

—JEANNINE E. TALLEY, PH.D.
University of Guam
Mangilao, Guam

I just finished reading the article "What Is a Man?" by Waller R. Newell. I am a single mother with a thirteen-year-old son and an eighteen-year-old daughter. I have been a single mother since their father and I separated and divorced more than ten years ago. Both of my children are sensitive, caring, moral, openminded, and peace-loving people. Though my son's father has not taken any responsibility for his upbringing and remains a distant and non-influential figure, my son does not display his "manliness" through aggression, dominance, or bullying of any sort. He has the highest regard for women, probably because he has lived with only a mother and a sister for most of his life. He has many examples of fine human beings (male and female) in our family, in our neighborhood, in school, and in our church. He has been raised to have respect for all living things (human and otherwise), to give back to others, and to be thankful for the things he has. Unless some horrible and unforeseen event happens to him, I cannot imagine that he will ever be any other way.

Your article may well ring true for many young men, and for many fathers who have not lived up to their responsibilities. Be fair, and give equal time to those of us who work very hard to raise our children to be decent and caring human beings, and do it without a live-in model of "manliness."

—PENNY SMITH BOGERT
Voorheesville, NY

I just received the summer issue and immediately read it cover to cover. Each article was enlightening and fascinating. I was particularly impressed with the Newell essay, "What is a Man?" Your publication is a breath of fresh air for educators, for its content consistently reflects journalistic truth rather than "pop culture." If we are to survive as a profession, we must be willing to dialogue fearlessly. Your excellent publication contributes to this process. Thank you.

—GAIL CRISAFULLI GONZALEZ

Closing the Achievement Gap

By Sandra Feldman

Over the last four decades, we've significantly narrowed the achievement gap between poor and middle-class children: Reading and math scores are up; more young people are going on to college; public schools are keeping pace with the explosion of knowledge in the Information Age. There is much more to learn today—our teachers are teaching it and our students are learning it. But the gap is still unacceptably large, and federal investment over the years has been grossly insufficient to solve the problems of poverty.

What goes undiscussed, what lurks in the shadows, is the specter of poverty—the harm and hurt of it and the Herculean effort poor children, their schools, and their teachers make to prevail over the conditions of their lives: unsafe neighborhoods, lack of health care, inadequate housing, and the substandard wages paid their parents. Instead of a candid discussion of what is obvious, we get, as someone said to me recently, the poverty poster child, who is the subject of slogans and million-dollar ad campaigns.

Poor children need more than their parents can give them. In a time when visions of designer clothes and cars are all around them, when respect isn't given their teachers but corporate CEOs and movie stars make many millions of dollars—beyond what an entire neighborhood of needy families could use for health care—love, which poor families often have in abundance, is not enough.

When they see gated communities that shut them out while they live on neglected streets, our kids who are smart and sophisticated—even if they're not on grade level—know something is wrong, and they are affected by it.

To our nation's shame, the United States, the wealthiest nation on earth, has the highest degree of childhood poverty in the advanced industrialized world. We did make some progress in the last few years of the Clinton administration toward reducing child poverty, but that now appears to have been only a brief interlude. Instead of directing surplus tax dollars to continue the battle on behalf of poor children, Congress chose to squander that money over the next decade by giving tax cuts to the wealthiest Americans.

As a result, the latest version of Title I, the only major federal program specifically designed to address the education of poor children, doesn't provide the level of re-

This is an excerpt from AFT president Sandra Feldman's opening remarks at the QuEST 2001 Conference, which was held July 12-15 in Washington, D.C. The full text can be found on the AFT Web site, www.aft.org.

The charge that all schools educating poor children are failing is a myth.

sources necessary to compensate for the inequality of educational spending between needy and advantaged children; Title I still doesn't even provide for all children who are eligible. Yet, Title I is expected to level that playing field, to reduce the achievement gap all of us know exists on average between poor and middle-class kids. The mythology extends to the notion that we can achieve equal education through testing, accountability, and flexibility. In other words, that we've cured the patient just by making the diagnosis.

Nevertheless, what schools and educators are producing for disadvantaged students is remarkable, especially in light of how underfunded most schools are in poor districts. This is not to say that disadvantaged students are doing as well as other students. And it's not to say that there aren't any schools failing in their responsibility. But there's also no question that the charge that all schools educating poor children are failing is a total myth. The truth is, schools are adding even more value—to use the lingo of the day—to needy students than to the rest of our students.

What is causing the achievement gap to persist? One of the main answers can be found in the 68 percent of a child's waking hours spent outside of school—because for most poor children, in sharp contrast to most advantaged children, that 68 percent does not produce the kind of learning that supports and extends academic achievement.

Let me quote from the studies done by Doris Entwisle and her colleagues at Johns Hopkins University because they are the premier researchers in this area: "...children from poor and middle-class families make comparable gains during the school year, but while the middle-class children make gains when they are out of school during the summer, poor and disadvantaged children make few gains, or even move backward academically." In other words, with all their problems and shortcomings, our schools are making a huge and positive difference, especially for disadvantaged youngsters. (See article, page 10.)

But what they have been unable to do is overcome the fact that the families of poor children can't afford extra tutoring, computers, museum trips, or summer camp. They live in neighborhoods with few wholesome activities available to children, and not only does academic-type learning stop when school is out, but the gains our schools have achieved with them are eroded. And it's this brutal consequence of poverty—and not our much-maligned public schools—that has to be addressed as a major cause of the achievement gap.

Until the other institutions of our society step up to the plate to enable poor neighborhoods and families—who care every bit as much about *their* kids as other families—to give their kids the supports for learning outside of school that more-advantaged children routinely receive, our schools must continue to take up the slack.

So one great use states and districts can make of the new flexibility of funding in Title I is to extend the school day and year in low-performing schools in districts that have high concentrations of poverty so that the academic gains that our schools are already producing for poor children are accelerated and sustained.

The evidence on behalf of doing so could not be more compelling; in fact, many AFT districts have already negotiated these kinds of arrangements. It is also expensive. Federal funds will not go far enough to implement the kind of quality program children need widely enough—and pay the good union wages we'll insist on for staffing it. So, we intend to fight to secure more federal funding.

For the summer component especially, other federal, state, and local agencies can step up to the plate—for example, those dealing with public health or housing or parks and recreation. Because an extended year for poor children who need it does not mean summer school that's primarily about drilling for tests. It means rich academic activities that also involve the kinds of cultural, athletic, and other stimulating activities that advantaged children routinely receive in their communities and from their parents.

But to close the achievement gap, we need to go even further, and we can. That's why it's time to turn, seriously, to early childhood education.

The largest nationally representative study ever conducted on the subject, started a few years ago by the National Center for Education Statistics, examined the school-readiness skills, as well as the health and social skills, of kindergarten-age children. The results came out this past year and got very little attention. The good news is that the vast majority of these youngsters are healthy and have the pre-academic and social skills that are the foundation for solid achievement when they start elemen-

Let's guarantee every child full-day kindergarten because that is far from the case now in this richest nation on earth.

tary school. The bad news is that a small but significant percentage of our young children, primarily poor children, are in poor health and lack the pre-literacy, pre-math, and social skills that more-advantaged youngsters already have at the beginning of kindergarten. This is not because these youngsters are incapable of acquiring those skills; it is because they, unlike more-advantaged kids, just haven't been exposed to the kinds of experiences that produce them.

But the news gets better. The children in the study were followed up at the end of their kindergarten year, and by then, the kids who were behind at the beginning of the year had fully caught up academically.

However, at the same time that poor children were making great strides as a result of kindergarten, the other kids were moving, too. Moreover, the more-advantaged kids also had the benefit of a variety of out-of-school learning experiences. As a result, these youngsters, on average, had acquired more higher-order skills than poor youngsters had, because as terrific a job as our kindergarten teachers did, they couldn't compensate for what poor youngsters, by virtue of their poverty, couldn't get outside of school.

Once again, the path toward closing the achievement gap becomes clear. For starters, let's guarantee every child full-day kindergarten because that is far from the case now in this richest nation on earth. But I want to go even further than that. It's time that we really get it right from the start. And so I propose that this country make high-quality preschool education, starting at the age of three, universally available—not compulsory, but accessible and affordable to all—with first priority given to needy children.

A few communities are doing this, but we need a national commitment. And we have a basis on which to do it. Soon, Head Start will be up for reauthorization. We must fully fund it so it not only covers all eligible children but also provides them with a high-quality program, including the health and social services and parent involvement components now present in Head Start; that's because the evaluations tell us that these are as important to our children's success as getting them academically ready.

And I propose that we use Head Start as the foundation for an early childhood education system that is accessible and affordable to any family that wants to use it. Because there is hardly a working family in America, whether poor or middle class, that hasn't experienced the anxiety of finding quality early childhood education and care for its children. We all know the gut-wrenching stories of families forced to leave their children with relatives or even strangers, knowing that videos will be their child's primary fare for the day. We all know about families lucky enough to find a decent preschool but having to defer saving for their children's college education because their preschool costs are almost as much as a college tuition.

Here's a practical, affordable proposal for how to establish a universal program: through cost sharing. By that I mean, first, leveraging federal, state, and local funds to establish the quality system we need and also to pay the costs for poor families who want to enroll their children in preschool—this should be the first priority for funding. Second, by cost sharing I mean asking families who can pay and who want their children in these quality preschools to pay according to a reasonable schedule of sliding-scale fees.

Here are the many worthy things this cost-sharing proposal would accomplish. First, it would make building and running such a system eminently affordable for the nation. Second, it would give poor children the access to the high-quality early childhood education that they are now largely denied—the preventive medicine they need to compete. Third, working- and middle-class families would get a higher-quality early childhood arrangement at less cost, something they desperately want. And fourth, because the loud call for quality early childhood education is coming from families from all walks of life, answering the call could mean that children of all backgrounds would be able to learn together right from the start. Indeed, answering the need that America's families have in common could go a long way toward repairing America's sadly frayed social fabric and giving some real meaning to family and civic values. And what, after all, could be more important than realizing the promise of this great democracy? □

Keep the Faucet Flowing

Summer Learning and Home Environment

By Doris R. Entwisle, Karl L. Alexander, and Linda Steffel Olson

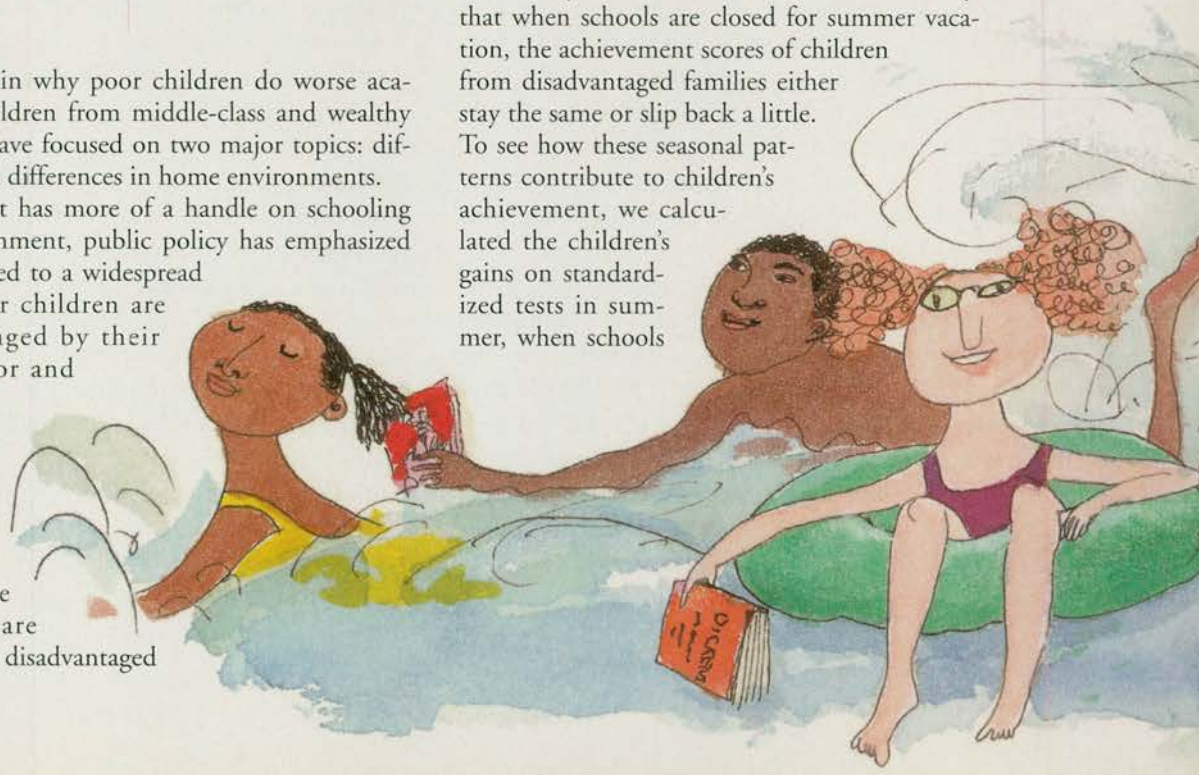
The findings in the article that follows are based on the authors' Baltimore School Study, which began in 1982 and is still in progress. Entwisle, Alexander, and Olson chose twenty schools on the basis of their racial composition (six were predominantly African American, six predominantly white, and eight were integrated) and their socioeconomic status (fourteen were inner-city working class and six were middle class) and then randomly selected 790 first graders from those schools. Although the authors went on to follow these students throughout their school years and beyond, the findings discussed here pertain to the children's elementary school experiences. In addition to standardized test scores, the authors gathered data from interviews with the students and their parents, questionnaires completed by their teachers, and school records. — *Editor*

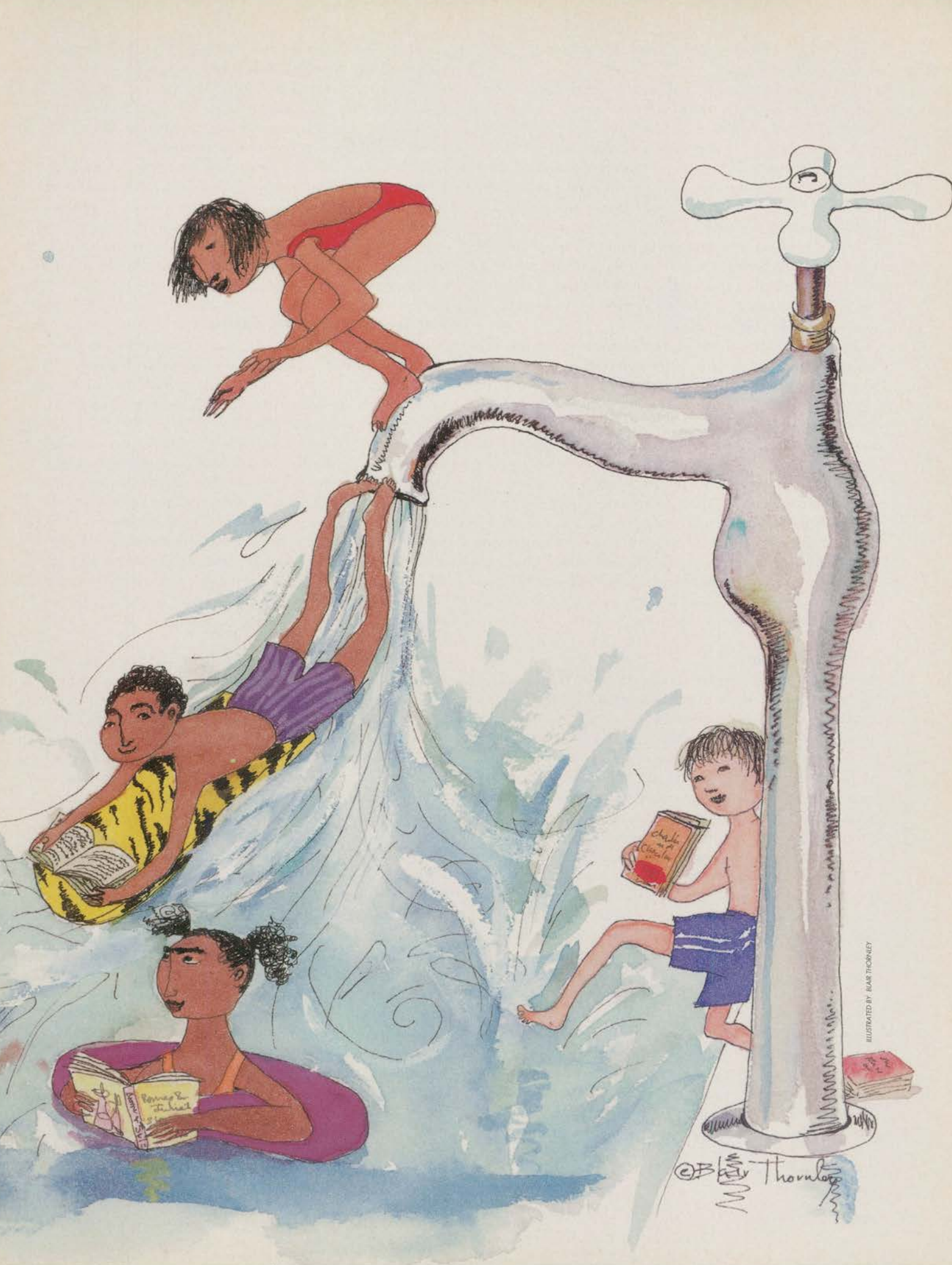
In seeking to explain why poor children do worse academically than children from middle-class and wealthy families, analysts have focused on two major topics: differences in schools and differences in home environments.

Because government has more of a handle on schooling than on home environment, public policy has emphasized the former. This has led to a widespread impression that poor children are routinely shortchanged by their schools. In fact, poor and middle-class children make comparable achievement gains during the school year. But while the middle-class children make gains during the summer when they are out of school, poor or disadvantaged children often lose ground academically. So far, one appealing remedy for reducing the achievement gap—summer school—has been disappointing. How to explain this paradox? If summers are the time when differences are established, why does summer school do so little to close the gap?

Seasonal learning

Given all that has been said about the strong correlation between parents' resources and school performance, it is astonishing that resources of Baltimore parents—both financial and psychological—did *not* predict how much children learned in winters when school was open. Their resources mattered only for predicting their children's gains in summer. Many studies[1] besides the Baltimore study indicate that when schools are closed for summer vacation, the achievement scores of children from disadvantaged families either stay the same or slip back a little. To see how these seasonal patterns contribute to children's achievement, we calculated the children's gains on standardized tests in summer, when schools





ILLUSTRATED BY BLAIR THORNLEY

were closed, separately from school-year scores in winter, when schools were open.

The achievement levels of all children, regardless of their socioeconomic status,[2] moved up substantially during the winter of first grade. Between the fall and spring of that first year, poor children in the Baltimore sample gained fifty-seven points in reading and forty-nine points in math, and their more affluent counterparts gained almost exactly the same number of points—sixty-one points in reading and forty-five points in math.

In the summer after first grade, however, more affluent students gained fifteen points in reading and nine points in math, while the less affluent children lost ground. For example, in the summer after first grade, they lost four points in reading and five points in math.

And this pattern continued. In the course of the first five summers in elementary school, the low-SES students gained less than one point total in reading, and they lost eight points in math. At the same time, the higher SES children gained forty-seven points in reading and twenty-five points in math. However, during the winters, when children were in school, both groups gained virtually the same amount (one hundred ninety-three points in reading for low-SES children versus one hundred ninety-one points for higher SES and one hundred eighty-six points for both in math). So the increasing gap in test scores between the two groups of children over the first five years in elementary school accrued entirely from the fact that relatively affluent children continued to gain when school was closed whereas poor children stopped gaining or even lost ground.

A faucet theory

We think a "faucet theory" makes sense of these seasonal patterns. That is, when school was in session, the resource faucet was turned on for all children, and all gained equally; when school was not in session, the school resource faucet was turned off. In summers, poor families could not make up for the resources the school had been providing, and so their children's achievement reached a plateau or even fell back. Middle-class families could make up for the school's resources to a considerable extent so their children's growth continued, though at a slower pace.

This seasonal pattern is not obvious because most schools give standardized tests once a year, and spring-to-spring comparisons convey the distinct, but wrong, impression that middle-class children learn more over the *entire* year than poorer children. Thus, it looks as though home resources help year round—and as though schools are failing poor children. The seasonal scores, however, show that home resources matter mainly—or only—in summer.

The seasonal data from Baltimore are not a statistical fluke—they agree with seasonal data for children in Atlanta, New Haven, and several other localities. In addition, as the scores demonstrate, poorer children in Baltimore derive just as much benefit from school as their better-off classmates do when school is open in winter. And because they have lower scores when they begin school and gains are usually proportional to starting scores, the progress they make when school is open is quite extraordinary. If we could get poorer children up to speed before they start school, perhaps schools could do even more to close the achievement gap.

Explaining summer gains

What is it that better-off parents and neighborhoods do in summers that poorer parents and neighborhoods do not? To answer this question, we need to step back and consider parental attitudes toward school and learning. First of all, middle-class parents see themselves as partners in the learning process while blue-collar or poorer parents see education as the school's job.[3] Because middle-class parents take an active role, they know more about their children's school programs than poorer parents do. They understand how schools work, what determines success, how to get along in a complex bureaucracy, and how present actions relate to future interests. Middle-class parents themselves have been successful in school (e.g., they are more highly educated) and in the workplace (e.g., they have higher income and job status), so they are in a position to encourage activities at home that will lead to success in school.

For many poor parents, schools are intimidating—the rules and conventions are foreign and the middle-class professionalism of school personnel, threatening. Poor parents tend to defer to school personnel, they advise their children to "follow the rules," and they rely on "professional authority" to decide what needs to be done for their children rather than deciding themselves.

Higher family income allows expenditures for books, games, computers, and other resources that could promote learning in summer, but more income is far from being the whole story. Parents' financial capital overlaps their *human* capital, their *social* capital, and especially their *psychological* capital. In the Baltimore study, parents' psychological capital, as measured by parents' expectations for children's school performance even before the children started school, was of about the same importance as family socioeconomic status in predicting cognitive growth.

These expectations continue to be of great importance when children enter school, and for poor families they may be unfairly undercut by the grades poor children get. Researchers do not gauge children's progress in school by looking at their marks because marking standards vary so much from one school to another and from one teacher to another. Instead, they use standardized test scores. However, most families and children pay much more attention to marks than to test scores, and although many do not understand the significance of test scores, the youngest children and the poorest parents know a low mark when they see

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During the school year, poor children learned at a rate equivalent to that of better-off children in the same school system.

one. Further, children come home every day with marks on papers and homework, and they receive report cards several times a year. Parents who see low marks react by believing that their children are not learning very much, but they are often at a loss as to what to do. Children themselves are disappointed and also confused. All of this turns marks into a key dynamic in the link between poverty and learning deficits.

If poor children are progressing as well as their more affluent counterparts, why does this fact not show up in their marks? We found that children's marks corresponded to the socioeconomic status of their neighborhoods. In schools where 30 percent or fewer children were in poverty, over one-third received a first reading mark of A or B, while in schools with more than 30 percent of children in poverty, only 5 percent received an A or a B. It strains credulity, but in one school where 88 percent of children received meal subsidies, all the students in our study failed reading in the first quarter of first grade.

In other words, poor children were not being marked in terms of how much they advanced during the school year but in terms of where they started—even though, judged by the gains they made on standardized tests, they improved as much as the youngsters from more affluent families. Tragically, the message sent home on report cards was thus that many of these children were already academic failures. This negative picture helps to shape poor parents' reactions to their children, thus further eroding parents' valuable psychic capital, which is essential to undergirding children's long-term academic prospects.

The level of marks, generally, in a school also seemed to affect how teachers viewed their students. At the end of first grade, when asked to predict how their students would perform in grade two, teachers' predictions shadowed the marking patterns of the school. Teachers in the top ten schools, judged by their economic status, expected their pupils to get more A's and B's in reading than C's or below, while teachers in the bottom ten schools expected nearly all their students to get C's or below.

And teachers' ratings of children's classroom behavior corresponded to these marks. In a school with only 11 percent of children on meal subsidy, teachers rated their pupils significantly higher in general interest and classroom participation than did teachers in a school where 90 percent of children were on subsidy. Actually, the correlation between the meal subsidy level of the school and teachers' average ratings of their students' class participation is almost perfect. In schools with high percentages of children on subsidy, some children were rated so low in terms of class participation that they were at the bottom of the scale. In the more affluent schools *no* student was rated at the bottom of the scale on these qualities.

The overall picture is one of poor children assigned poor marks, expected by teachers to get poor marks, and perceived as deficient in classroom behaviors known to foster learning. The great inequity is, of course, that during the school year, the poor children learned at a rate equivalent to that of the better-off children in the same school system. Parents and the community as a whole accepted the evaluations with which they were furnished without being aware that the level of these evaluations reflected children's home addresses rather than children's progress in reading or math on standardized tests.

The school's role

School systems and society in general are misinformed about the origins of social difference in children's school performance. The strong impression that home resources help all year long is mistaken. Instead, family resources make a difference mainly when school is closed. One implication is that schools are doing a far better job than they have been credited with. Another is that middle-class parents' aspirations, attitudes, activities, and psychic investments in their children are major reasons for the social class differences in children's cognitive growth when schools are not open.

However, at present, misperceptions about the process of schooling needlessly depress poorer parents' psychological resources. In addition, this mismatch between children's actual progress and how that progress is viewed is highly inequitable. When Baltimore children started school, their pre-reading and pre-math skills reflected their uneven family situations, but despite this, children in our study, regardless of socioeconomic level, progressed at the same rate over first grade. In June of first grade, though, the unevenness in test scores present at the start was still there. Poor children started from a lower point than better-off children did, so when school let out for the summer they ended up at a lower point even though both groups made equal gains during the year. In addition, in summer the poor children's growth just about stopped while better-off children's continued to rise.

Summer school as a solution

If economically disadvantaged children fall behind their better-off classmates in summer, it seems obvious that attending summer school could, or should, bring poorer children up to speed. Sad to say, this course of action so far does not work. The few careful evaluations that have focused on attending summer school for the purpose of closing the gap between social groups (racial, economic, or both) find just the opposite. The evidence on summer school for this purpose is clearly negative. Summer school *increases* the gap.

On average, the summer school gain for students of all socioeconomic levels is quite small: about one-seventh of a

standard deviation—roughly one month on average or a few test points (out of three or four hundred) on standardized tests like those used in the Baltimore study. This small gain is for rich and poor combined, so the first question is whether disadvantaged students attending summer school make any gains. The literature suggests they do not.

However, the failure of summer school to narrow the learning gap is not really surprising. Many other programs undertaken in the past have also had disappointing results. A major aim of "Sesame Street," for example, was to reduce the knowledge gap between minority (or poor) preschool children and their majority (or better-off) counterparts. But though, on average, it was clearly of benefit to preschoolers, it backfired in terms of decreasing the learning gap, which grew larger rather than smaller.[4]

The counter-intuitive outcome of summer school, like that of "Sesame Street," is an example of the "Matthew Effect," an often-observed phenomenon that takes its name from the gospel of Matthew 25:29—and that can be roughly paraphrased by the old saw, "the rich get richer and the poor get poorer." Providing add-on services across the board benefits advantaged students more than poor, bright rather than not-so-bright, majority more than minority, and so on. Why? One reason is that higher scoring and better-off children's parents find out about special programs and see that their children attend them more often than do poorer children's parents. In Atlanta, where summer school was voluntary, the Atlanta children who chose to attend summer school had higher achievement levels during the school year than those who chose not to attend.[5] Similarly, the children least likely to attend preschool programs these days are children from low-income and single-parent families and those whose parents have the least education. For summer school and other programs to close the learning gap, they will have to be designed especially for poor children and provided specifically for them, as has been done with some compensatory education preschool programs.

Proposing a strategy

To determine the content of a summer program that will boost the summer achievement of poorer children, we need to know the kinds of learning experiences they lack and when to offer such programs. An important consideration for timing of programs, which we have not mentioned so far, is that children's cognitive growth slows down precipitously as they progress upward through the grades. The reading achievement of Baltimore children improved twice as fast in grade one as grade three, for example, and the gap in summer gains between better-off and poorer children shrank over time.

Considering (1) the relatively small gap in children's test scores associated with family income at the point when they start first grade, (2) the seasonal profiles of achievement growth with better-off children gaining more in summers, and (3) the marked deceleration in the rates of cognitive growth over the early school years, we suggest the following course of action: *Provide poor children with high-quality preschools, and then follow up with summer school just for poor children in the summers before and after first grade.*

We need to keep the faucet open during the summer to give poor children the extra resources that middle-class parents provide for their children.

Where to start? A good place would be to provide programs to help bring poorer children up to speed before they start first grade. We already know this can be done, because scientifically impeccable data show that good preschools can improve the early school success of disadvantaged children. A major effect is to reduce the retention rate in first grade,[6] which is higher than in any subsequent grade,[7] and holding poor children back in first grade mortgages their futures. By age 23, Baltimore students who had been held back in grade one were three times more likely to have dropped out of school, even when family economic status, minority status, and actual school performance were taken into account. Attending a good preschool could be enough to protect economically disadvantaged youngsters against low placements in first-grade reading groups or early retention.[8] However, such programs must be specifically targeted at those children. If preschools reach more of the wealthier than the poorer children, or if wealthier children find their way to higher-quality programs, the gap will get bigger rather than smaller.

More disadvantaged children also need to attend kindergarten, which is a kind of preschool. Because kindergarten is not compulsory, a surprisingly large number of children still attend half-day programs, and back when our study children were in the primary grades, many skipped kindergarten altogether. In Baltimore City, for example, which is one of the poorest school districts in Maryland, 10 percent of first-graders in our study had not attended kindergarten, compared to about 1 percent nationwide today. In addition, the Baltimore study children who came from the poorest families were more often enrolled in half-day than full-day sessions. (Of children who attended half-day, 77 percent were on meal subsidy compared to 32 percent of those who attended full days.)

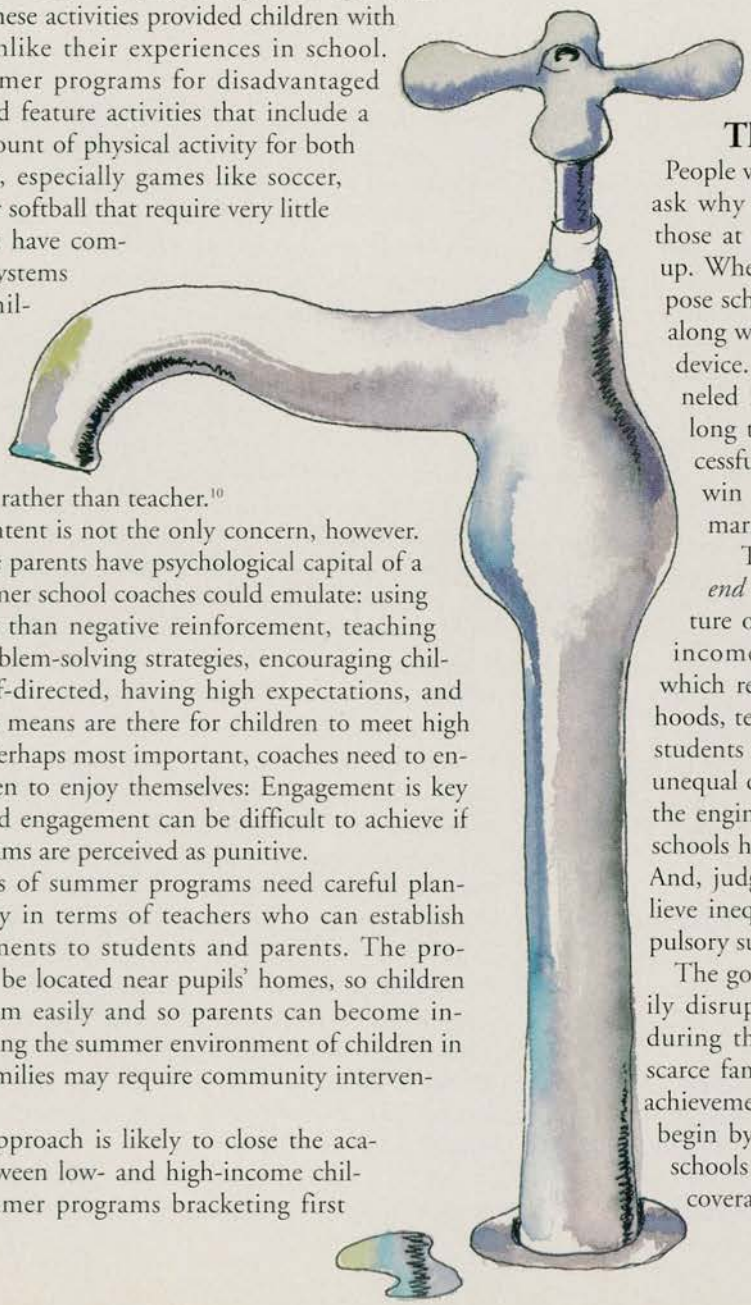
The benefits of full-day as compared to half-day kindergartens for the Baltimore children were striking. With family background and many other variables allowed for, first graders who attended full-day kindergarten were absent fewer days in first grade, were less often retained, and earned higher marks and test scores than the half-day attendees. So in addition to preschools (age four and younger), having poorer children attend high-quality full-day kindergarten (age five) could help close the gap.

Summer school programs

The next logical step after increasing poor children's attendance in full-day preschool is to develop summer school programs for poor children that add on to preschool. Preschools can reduce the achievement gap when children start first grade, but then we need to keep the faucet open during the summer to give poor children the extra resources that middle-class parents provide for their children.

What should these summer programs consist of? Summer activities related to reading top the list. Low-income children involved in Atlanta's summer schools tended to read more on their own than did students not attending.[9] Likewise, in Baltimore, first- and second-graders who went to the library more often in summer and who took out more books did better than other children. Both math and reading growth benefited from library activities.

Better-off children also did things in summer *different* from what they did during the school year—they attended day camps, took swimming lessons, went on trips, visited local parks and zoos, and played organized sports, to name a few. These activities provided children with experiences unlike their experiences in school. Probably summer programs for disadvantaged children should feature activities that include a substantial amount of physical activity for both boys and girls, especially games like soccer, field hockey, or softball that require very little equipment but have complicated rule systems and require children to take multiple roles. Adult leaders need to be cast in the role of "coach" rather than teacher.[10]



Program content is not the only concern, however. Higher-income parents have psychological capital of a kind that summer school coaches could emulate: using positive rather than negative reinforcement, teaching productive problem-solving strategies, encouraging children to be self-directed, having high expectations, and seeing that the means are there for children to meet high expectations. Perhaps most important, coaches need to encourage children to enjoy themselves: Engagement is key to learning, and engagement can be difficult to achieve if summer programs are perceived as punitive.

The logistics of summer programs need careful planning, especially in terms of teachers who can establish strong attachments to students and parents. The programs need to be located near pupils' homes, so children can get to them easily and so parents can become involved. Changing the summer environment of children in low-income families may require community intervention.

No single approach is likely to close the academic gap between low- and high-income children, but summer programs bracketing first grade could help. It is absolutely essential to be aware that special programs, including summer school, given to children of all income levels would probably enlarge the gap between rich and poor. High-quality preschools and kindergartens can definitely improve the school performance of low-income children. But as they go through the first three grades, these children—especially the most disadvantaged—need additional resources to stay even. Programs mounted in summers before the first and second grades that emphasize voluntary activities—recreational reading, organized sports, and a variety of summer activities that middle-class families often pursue—hold promise. The programs should not be scheduled as "make-up" or billed as being for children who have "failed." The success of these programs, we believe, hinges on their non-school flavor and on providing them specifically for disadvantaged children.

At age six, when children's cognitive development is proceeding at probably twice the rate it does two or three years later, the trajectory of children's long-term educational careers is being established. For this reason, it is imperative to concentrate on the pre- and primary schooling of disadvantaged youth.

The larger picture

People who think and talk about inequality often ask why it is perpetuated and how we can get those at the very bottom of the ladder to move up. When social theorists and policymakers propose schools as a solution, they often seem to go along with the notion that education is a sorting device. Thus, students leaving school are channeled into job slots that correspond with how long they have stayed in school and how successful they have been while there. Those who win out in school will win out in the labor market as well.

To us this image of sorting students at the *end* of their schooling misrepresents the nature of inequality. Families sort themselves by income into neighborhoods. Then schools, which reflect the social strata of their neighborhoods, tend to eliminate any real contest between students from different income levels. Because the unequal distribution of resources across families is the engine that drives the system, tinkering with schools has not, thus far, eliminated this inequity. And, judging from the available research, we believe inequity would be exacerbated by noncompulsory summer schools open to *all* children.

The good news is that despite poverty and family disruption, young children's ability to learn during the school year seems little impaired by scarce family resources. In seeking to address the achievement gap between rich and poor, we should begin by recognizing the efficacy of elementary schools in leveling the playing field. Most press coverage of American education today empha-

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The School Marketplace

Has Commercialization Gone Too Far?

By Alexander Wohl

It's a crisp fall morning in our nation's heartland. The smell of autumn fills the air with a distinctive scent that can mean only one thing—the end of summer vacation and the first day of school. Teachers eagerly anticipate the new crop of students, the clean classrooms, and the blackboards on which they can lay a new foundation of learning. But as they walk to their rooms, they encounter a number of less traditional features that come with teaching and learning in modern times. There are the banks of gleaming soda and snack machines all ready for students to pick up a soft drink and a candy bar when hunger strikes. And there are advertisements throughout the school, from the covers on students' books to the walls of the gymnasium and the scoreboard on the athletic field. The ads even appear in the classrooms to which the teachers are headed—on the television screens that will show the prepared "news" programs (with ads for junk food and video games) that begin the school day.

All this might sound implausible to people who still have a Norman-Rockwell idea of what schools are like, but anyone who spends time in a public school in 2001 knows it is picture perfect. And while there aren't yet shopping plazas on high school campuses, just think of the Senior High Mall as a logical extension of what already exists.

It's not your mother's bake sale anymore

The phenomenon of commercialization in the schools is not a new one. As far back as the late nineteenth century, when a paint company produced a handout on primary and secondary colors for art teachers to distribute in schools, folks have been sponsoring bake sales and selling advertisements in yearbooks to finance school teams or various small projects. We have allowed businesses access to a school audience, confident that selling a few advertisements or batches of brownies would not compromise a school's basic mission or its financial structure.

In the last decade or so, as teachers are well aware, the quantity, quality, and sophistication of these activities has grown enormously. The growth can be attributed to a number of factors. Kids have more money to spend, and companies have not been slow to realize that they have a new and important group of customers. As for the schools, they face a growing gap between the cost of educating students and the money available to do so. State budget shortfalls and the frequent unwillingness of communities to increase school funding make things difficult in many school districts. And inequities in school funding create additional problems for schools in poorer communities.

A recent report by the Center for the Analysis of Commercialism in Education at the University of Wisconsin-Milwaukee found a fourfold increase in schoolhouse commercialism over the past decade, in areas ranging from corporate sponsorship of lesson plans to agreements between vending companies and schools that provide exclusive rights to these companies in exchange for often hefty compensation.[1] That growth is part of an even broader expansion of investment in private educational enterprises. Many financial firms now have analysts specially trained in education marketing as part of their efforts to recruit new capital. And a host of consultants offer companies help in figuring out exactly how to reach the student "audience" and turn them into faithful consumers.

But as teachers know, you don't have to go beyond the nearest school to see evidence of the lucrative nature of the

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ILLUSTRATED BY KENNETH BATEMAN


KOLA HIGH
KOLA!
Whoa... jeans
SCHOOL BUS
ZZA
Giggles for energy
Run with the Best!

education market. Consider, for example, the Burger King-sponsored "spirit buses" at District 11 in Colorado Springs, Colo., which are emblazoned with the high school mascot and a smaller Burger King logo.[2] Or the exclusive contracts for Coke and the candy machine contracts that High Point High School in Beltsville, Md., has with the Mid-Atlantic Coca-Cola Bottling Company and the Monumental Vending Company.[3] Or Channel One, the controversial company that provides "news programming" directly to classrooms, (with commercials geared to the captive youth audience).

Supporters of these kinds of commercial deals point out that this supplemental educational funding is sought after by, and can be a boon to, schools. In the case of High Point High School, for instance, the school received nearly $100,000 in the 1999-2000 academic year, the first year of the program, and this helped pay for teacher training, computer rewiring, and Black History Month activities.

Although the in-school marketplace seems firmly established, in fact, there is a running debate between those who have no problem with companies advertising and selling their products to kids in school and those who strongly oppose the practice as inappropriate, even dangerous, and certainly not worth the money schools get in return. At the core of the conflict is a clash between the desire of companies to expand their sales in a lucrative market—and build brand loyalty as early as possible—and the belief that children, at least when they are in school, should be free from efforts to influence (some would say brainwash) them into buying particular products—or any products at all.

Perhaps the best comparison comes from another controversial area—the question of religion in the public schools. The so-called wall of separation between church and state is still standing in the public schools, despite years of attack, because children's minds are deemed to be particularly vulnerable. In a series of cases, the U.S. Supreme Court has found a variety of activities unconstitutional, including officially sanctioned school prayer, a prohibition on teaching evolution, and a display of the Ten Commandments in the classroom.[4] The underlying rationale in these decisions is the coercive effect on students implicit in these statutory schemes and the fact that students are essentially a captive audience.

This analysis suggests a basis for regulating commercial activity in schools—and defining what should be kept out and what should be allowed. The wall separating learning from buying and selling in our schools has already been breached, and no one expects to reconstruct it. But the crux of the issue is where to set the limits. If both businesses and schools are eager for the profits a fiscal relationship brings, we need to strike a balance—one that allows corporations interested in supporting teaching and learning to do so while keeping in mind that education, not coercion, should be the number one priority and goal. This is a tricky balance to strike, and it is fraught with problems. One question we need to ask is whether some forms of commercialization are inherently more dangerous to schools than others.

A message from our sponsor

Commercial activity in the schools takes a number of different forms, notably direct advertising, product sales and incentive programs, and indirect or sponsored advertising. Each has its own advantages for the seller and for the school, some obvious, others less clear; and each poses its own problems for the school, a proposition confirmed by a recent General Accounting Office (GAO) report that examined the growth and regulation of commercial activity in the schools.[5]

The most obvious type of school-related commercial activity is direct advertising. It can be found, in some form or another, throughout most secondary school campuses, but perhaps the best known, and certainly the most controversial, form of direct advertising in the schools is Channel One. Introduced in 1989 by media magnate Christopher Whittle, who went on to found the Edison Schools, the program claims to reach more than 8 million teenagers.[6]

As teachers in classrooms across the country are well aware, Channel One is a twelve-minute satellite-fed program consisting of ten minutes of news and two minutes of commercials. Participating schools sign a contract with Channel One agreeing that they will show the programming 90 percent of all school days in 80 percent of all classrooms. In exchange, Channel One installs a free satellite dish and internal wiring and provides two videocassette recordings and a nineteen-inch TV set for each classroom, all of which Channel One owns, operates, and maintains.[7]

The basic criticism of Channel One is that students in a classroom are a captive audience and should not be watching advertisements during time meant for learning. Supporting this criticism are questions about the news programming as well as the fact that teachers have no control over the content of the program or the commercials.

Channel One news has been disparaged, with some justification, as being more style than substance. Its news stories are generally slickly produced short features, accompanied by music, polls, quizzes, and high-tech graphics; and they bear, in style at least, more than a passing resemblance to the programming on MTV. While some of the subjects can be high-minded—Bosnia, the death penalty, or civil rights, for instance—the treatment is fast paced and lightweight. A 1998 study bore out these criticisms and concluded that the news stories were limited in their educational content. It showed, for example, that they gave little coverage to economic issues, something the sociology professor who conducted the study

found surprising, given the numbers of schools where Channel One is shown that are in high-poverty areas. And Channel One's news segments drew disproportionately on whites and males for on-camera interviews.[8]

The ads, in both style and substance, are representative of the range of products and fashions you'd expect to see marketed to young people, including video games, armed-forces recruitment, razors, and colleges. Above and beyond the problem of advertising to kids in school, critics across the political spectrum have objected to the content in a number of ads, in particular, those focused on violent or sexually oriented movies and junk food.

Even critics who don't find Channel One morally objectionable may wonder if it is educational. For example, how much critical thinking does it generate? According to a recent report in *The American Prospect,* students in schools using Channel One show little measurable increase in their tendency to discuss news outside the school or seek additional information from outside news sources—and little or no gain in achievement.[9] And while teachers could base a lesson or even a unit on how to "read" advertising or evaluate news reporting, it's not practical to mount a daily critique of Channel One. The GAO study indicates that a number of the schools simply extend homeroom time and air the broadcasts then. Other schools report that some teachers let students talk quietly during the program (the contracts apparently only require that the televisions be on, not necessarily watched).[10] But it's still time taken away from teaching in the already squeezed and overstructured classroom day.

A 1998 study by the Economic Policy Institute and the Center for the Analysis of Commercialism in Education, looking at this loss of teaching time in fiscal terms, concluded that the Channel One programming costs taxpayers $1.8 billion a year in time taken out of the school day, and the two minutes of commercials alone cost $300 million.[11] (It's useful, incidentally, to put these figures beside Channel One's earnings—at $200,000 for a thirty-second commercial, Channel One apparently made $346 million in 1999.[12] If this calculation is correct, taxpayers spent $1.8 billion so a company could make $346 million.)

Channel One defends its product saying that it's evaluated every day by millions of students, teachers, and administrators who wouldn't use it if they didn't like it. Perhaps, but only if you redefine "product." In this case, it is not the programming but the equipment used to watch it, which schools use for far more than showing Channel One. For poor school districts, many of which would otherwise be unable to afford this equipment, Channel One's TV sets, wiring, and satellite dish can be a significant benefit. But some critics doing the cost-benefit analysis ask whether the value schools derive is worth the cost. Would it be a wiser investment of taxpayer money to buy the equipment and give kids back the real time with teachers?

While Channel One has an apparent lock on in-class TV advertising, a newer and rapidly growing company, ZapMe! has taken a similar approach using the Internet. That company contracts to install up to fifteen multimedia personal computers and monitors, a high-speed Internet connection, and a printer in the computer lab of a middle or high school. The browser gives students access to twelve thousand selected educational sites. In exchange for the equipment, the schools must use the computers an average of four hours a day.[13] The downside? The screens the kids look at contain advertisements sold by the company and beamed at students.

Because of the growth in Internet use and schools' desire for high-speed hookups, a number of companies are venturing into this area. For example, N2H2 of Seattle, the leading maker of filters that block objectionable sites for schools, will waive its $4,000 fee for the software, provided the school puts advertisements for its product on the school home page.[14]

The drawbacks from these Internet services are similar to those connected with the advertising portions of Channel One. The GAO report, however, notes an additional threat. The computer services are able to track and report students' Internet use by age, gender, and school ZIP code. This market research does not qualify as advertising per se, but it lays the groundwork for future advertising assaults on young people, both in and out of school.

The greatest danger from this type of research is the invasion of privacy, joined with its covert nature: Most parents, students, and even educators are unaware of the extent or kinds of activities that companies are conducting. Companies say that they aren't using actual names of students because they are not collecting individual data, but that is disingenuous. A consistent identifying term is all that is necessary in order to track a student's preferences and then to market to him or her—or sell that information to someone who has a product to sell. The fact that the student is young is even better.

There's money in it!

The second significant type of school-related commercial activity comes in the form of product sales and incentive programs. These can include cash or credit rebate programs as well as traditional fundraising activities like gift-wrap sales; but the most common and lucrative form of fundraising for schools is product sales, with exclusive soft drink contracts in secondary schools leading the way. According to the Center for Commercial-Free Public Education, about 240 schools in thirty-one states now have exclusive arrangements.[15]

This type of agreement involves a company such as Coke or Pepsi (or a local bottler) contracting with a school for exclusive rights to put vending machines in the school's hallways and cafeterias in exchange for a portion of the profits. The share a school receives can vary according to the exclusivity of the deal and the amount of soda sold. In addition, the agreements usually require schools to place banners, billboards, or signs advertising the product throughout the school.

While the agreements are similar in structure, the extent and type of commitment on both sides can differ from school to school. Cibola High School in Albuquerque, N.M., for example, has an informal agreement with the supplying company through which the school makes about $3 per student and gets a baseball scoreboard and ten $1,000 competitive grants for teachers. In contrast, Ottawa Hills High

School in Grand Rapids, Mich., has a 10-year exclusive contract that guarantees a minimum commission of $20 per student, promotional merchandise and student incentive programs valued at more than $600,000, and guaranteed earnings for the district of between $785,000 and $1.5 million.[16]

Many school districts are eager to make these arrangements—indeed they are frequently the initiators and use their power as desirable customers to get a favorable deal. School officials in Sarasota, Fla., for instance, facing a $15 million budget shortfall, recently asked Coke and Pepsi to bid for the right to become sole provider.[17] (Coke was the winner.) The issue that sometimes gets overlooked—or buried—is whether the reward is enough to compensate for the health risks to students and burden on schools. The *Washington Post* recently quoted one principal's advice: "Read the fine print of those contracts, and the costs start to sink in."[18] At High Point High School in Prince George's County, Md., a contract with the Coca-Cola Company requires that the school guarantee sales of 4,500 cases of soda a year. A condition of another of the school's vending machine contracts is that the school's student population not drop below 2,100 students.[19]

Needless to say, some schools feel more than a little pressure to meet their goals, even to the point of ignoring or bending state and local statutes that regulate when vending machines must be turned off. In Colorado Springs, for example, where the contract required district students to consume seventy thousand cases of soft drink per year, a district official sent schools a letter suggesting that a regulation limiting vending machine use be interpreted loosely and the machines be turned off for only a half-hour before and after breakfast.[20] The High Point contract specifically states that if the board of education enforces its policy of turning off vending machines during the school day, the guaranteed commission on sales will be suspended.[21]

And what about the health tradeoffs? Is the money that schools make on vending machines worth the possible dangers that the products sold from those machines pose to students' health? A number of reports in recent years have pointed to an increase in obesity among young Americans and the significant impact that soft drinks and candy can have on that condition.[22] A congressional report issued in 2001 makes a more general point, noting that the availability of foods sold in competition with school meals can lead to unhealthy eating habits and subsequent health risks for young people.[23]

To be fair, most young people, given the choice, will go for junk food. One principal, whose school has a contract with Coke, had this confirmed when he tried offering a nutritious alternative by filling one machine with health drinks, including V-8 juice. He stopped after nobody purchased them.[24] But the difficulty of influencing adolescent eating habits does not seem a good reason for capitalizing on kids' bad habits, even to make money for schools. And some parents and administrators go on trying to get healthier snacks and drinks included in vending machines. The principal of Laurel High School in Maryland recently banned candy bars and licorice in favor of granola bars, chips, and pretzels. She also stopped Pepsi from selling its high-calorie, high-caffeine drink Mountain Dew.[25]

While soda machines are popular and lucrative, they are by no means the only way schools are "selling out." In Texas, the Grapevine-Colleyville school district, like many other school districts across the country, sells signs in its gym and athletic fields and on the district's school buses. One sales package at the same school, reported by *Education Week,* includes recognition on the district's voicemail system and the rights to a sign on the roof of a school building that is visible to passengers flying into the adjacent Dallas-Fort Worth airport.[26] Another popular way of making money is to sell naming rights—the way commercial sports arenas and ballparks do—which allow sponsors to name classrooms and laboratories, wings on school buildings, and even buildings themselves. The Charlotte-Mecklenburg (N.C.) school district, which has such a policy, scoffs at the idea of a Coca-Cola High or Reebok Middle School, but what a temptation that would be for some cash-strapped district.[27]

Look for the hidden message

A third form of school-based advertising is known as indirect advertising, and it is carried out through grants or sponsored educational materials such as videos, lesson plans, and other classroom activities, as well as corporate-sponsored teacher training or corporate-sponsored contests. The primary aim of indirect advertising is not to sell a product but to show that companies are "friends," interested in helping schools with popular and worthwhile causes.

And the help they provide can be considerable. Think about the Westinghouse Science Talent Search (now the Intel Science Talent Search), which for years identified talented science students and helped them finance their college educations at the same time as it gave academic achievement the kind of boost ordinarily accorded only to winning sports teams. The Coca-Cola Company has a number of education-based initiatives, including a partnership with Reading is Fundamental and a scholars program that provides college scholarships to promising high school seniors.[28] Pizza Hut's Book-It program, another of the many corporate initiatives in support of a laudable goal, encourages children to read books during the summer, with the aim of helping them become lifelong readers.

But a company that backs a good cause also hopes that some of the warm feeling generated will come into play when people step up to make a purchase. Since kids don't buy refrigerators, Westinghouse's implied pitch was directed to adults, but it's a different story with much of the indirect advertising in the schools. In the Pizza Hut program, for example, a student who reads a certain number of books gets a certificate entitling him to a small pizza, and it's no stretch to point out that this is a good way of getting kids to bring their families into the restaurant. And like many other programs involving giveaways and prizes, it is a technique for encouraging early brand-name recognition and loyalty that the company hopes will become life long.

Lesson plans and other educational materials provided by corporate sponsors free of charge or at a nominal cost raise other issues, particularly that of bias. Chances are, lesson plans or curricula produced by a corporation will reflect the

area in which the company does business—an oil company is unlikely to issue materials on nutrition. But if the oil company offers a curriculum on conservation and the environment, the possibility of conflict of interest is obvious. The lesson plans and readings for students could be superficial, they could be excellent; they could be biased or they could be scrupulously fair. But they are part of a public relations strategy, an effort to show the company in the best possible light, so there is no reason to assume they are balanced in their approach—and often they are not.

Corporate materials for teachers are also increasingly available through the Internet. This makes them more accessible but does not answer the basic question about the suitability of particular examples as teaching materials. Unlike the situation with Channel One or one of the Internet companies, teachers generally are free to exclude corporate curricula from their classrooms. If they decide to let the curricula in, teachers may use them in whatever way they choose, with any caveat they think is needed. So that what could be the most threatening example of commercialism in the schools—threatening because it could directly affect the intellectual content of classroom instruction—is still largely under the control of teachers.

Helping schools say *no*

The public has become increasingly aware of and concerned about business involvement in schools. As a result, there is growing talk of passing laws to regulate school commerce. In fact, certain forms of commercial activities in schools are already covered by federal and state laws. According to the GAO report, nineteen states have regulations concerning specific commercial activities in schools. These include a California law prohibiting school boards from adopting instructional materials that provide "unnecessary exposure to brand names, products, or company logos"; a Rhode Island statute saying that schools may not engage in any commercial activity unless authorized by the state department of education; and a Virginia law that forbids advertising on the inside or outside of school buses.[29]

Even federal officials are getting into the act. Two different amendments to the recently passed Senate version of the Elementary and Secondary Education Act concerned commercialization, including one requiring parental consent before marketers are allowed to collect any information from kids at school.[30] Senator Patrick Leahy has talked about introducing legislation to restrict sales of snacks and soft drinks and limit marketing in schools.[31] And the U.S. Agriculture Department recently sent Congress a report recommending that all snacks sold in schools meet federal government nutritional standards.[32] (Opponents of commercialization shouldn't count on much help from the current U.S. Department of Education. According to the *Washington Post,* Education Secretary Rod Paige helped obtain a $5 million contract with Coke when he was superintendent of Houston's school system.[33])

Although all this may sound like a concerted effort to regulate commercial activity, it is, in reality, a piecemeal approach. What is more, when legislation is introduced, it often encounters resistance even from those who might agree with it in principle. After the defeat of a recent state legislative effort to limit commercial activities in Maryland public schools, one state senator who voted against it commented, "Though I might agree in concept, I cannot agree we should do it until we fully fund the...schools." Other legislators involved in the debate suggested that the issue should be left to local school officials[34]—and the principle of local control of the schools, which is still powerful, is probably the main reason why federal or state legislation regulating commercial activity in the schools is unlikely to come to much.

Companies themselves can be responsive to pressure and negative publicity connected with their school ventures. Channel One is making an effort to improve the quality of its news programming (although it was recently criticized for its new "Share It" promotion, which rewards "school employees" with $500 for every successful referral of a new subscriber. Channel One calls the money an "honorarium" that can be used by the school). The Coca-Cola Company recently said that it would pull back from earlier aggressive efforts to market to schools by encouraging its local bottlers not to require schools to sell a contractual amount of Coca-Cola. It has also formed the Education Advisory Council, which includes former education secretaries Richard Riley and Lamar Alexander and other education leaders, to help advise the company on education policy.[35]

Ironically, Coke's move to disentangle itself from the schools has so far been less than successful. First, it was criticized by opponents of in-school marketing as a business decision designed primarily to let the company stay in schools despite a rising tide of opposition. Then, individual Coke bottlers largely ignored the order from the head office and continued to make exclusive contracts with schools eager to maintain their cash cow. To add to its problems, Coke has had to worry about competitors like Pepsi jumping in and taking the business it has altruistically left behind.

(Continued on page 46)

Harnessing Technology in the Classroom

By Ellen Ficklen and Carol Muscara

Don't panic. Yes, this is an article about technology, but it's not written for computer experts. Even if you consider yourself a long way from being on the information highway—does a dirt path sound more like it?—what you'll find here starts with basic technology information, builds from there, and offers plenty of explanations along the way. The goal is to help you feel comfortable with what technology can offer you in the classroom. Then you can use it to help your students.

Why now? Because it's time. Remember all the talk about preparing students for technological life in the twenty-first century? Well, this is it. The twenty-first century is *now.* And that means it's time to look at how we're all doing—and get up to speed if we need to.

A number of impressive statistics tell us that schools are, indeed, making some of the twenty-first century technology progress that was hoped for. The National Center for Education Statistics, a part of the U.S. Department of Education, reports that by Fall 2000, 98 percent of U.S. public schools had access to the Internet. Furthermore, the ratio of students to an Internet-connected computer is approximately one computer to every eight students, according to Market Data Retrieval, a Connecticut-based research company.

But being wired isn't enough. Unfortunately, there's also evidence that, in many classrooms, the understanding and actual use of technology is still somewhere back in the last century. Sometimes, way back. As the *Washington Post* put it in June 2001, "leaders of technologically advanced schools …say there is still much to do, particularly in training teachers to use computers for something more than teaching how to use computers."

And there you have it: To harness technology, teachers need help in how to use computers (and other forms of technology) as tools to enhance the curriculum. According to an *Education Week* newspaper survey, currently only 29 percent of students have teachers who use computers to explain difficult concepts. That means the majority of students (the other 71 percent), do not have the full benefit of what technology could bring to their lives and minds. It also means that most teachers aren't getting the kind of substantive assistance that technology could give them. There's still a major disconnect when it comes to putting technology to work as a truly effective classroom tool.

To help make technology an integral part of teaching and learning, while simultaneously creating more and more tech-savvy teachers, there are steps that teachers, administrators, school boards, and communities can take together. We believe that there are five major aspects that need to be addressed si-

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ILLUSTRATED BY MICHAEL GIBBS

multaneously—and addressed well—if top quality, technology-enhanced instruction is to take place in classrooms:

(1) infrastructure and hardware
(2) software
(3) professional development
(4) maintenance
(5) long-term support

(Throughout this article, we're using the word *technology* to mean more than computers, defining technology as electronic equipment that can be used to enhance teaching and learning. This definition includes hand-held calculators, digital cameras, scanners, and computers, as well as the expanding world of telecommunications.)

Teachers can't do it all by themselves. But if they are knowledgeable and articulate, they can play an important part in getting schools on the right track, technologically speaking. Here are details about what we believe are the five major areas that schools must address to ensure that technology becomes an effective, curriculum-enhancing teaching tool. And these are exactly the kinds of things that all teachers will want to be working toward.

INFRASTRUCTURE AND HARDWARE

Infrastructure and hardware are inextricably linked, so they're linked here as well.

Infrastructure

■ **Building wiring.** It's wiring (which includes things such as Cat 5 cables, routers, and connectors) that provides computer access for everyone throughout a school. Most schools are connected to one high-powered computer with lots of memory (a server) that shares information. Generally speaking, files that students and teachers create are stored on the classroom or media center (client) computers.

■ **Computers.** In elementary and middle schools, computers are used most effectively when they are distributed to classrooms for student use. High schools need computer labs *and* distributed computers to meet the needs of diverse course offerings.

■ **Peripherals.** Classroom or media-center computers usually are connected to what are known as peripherals—items such as a printer, scanner, and DVD (digital versatile disc) player.

■ **Network.** A school's network, which is made up of all the wiring, connectors, cables, and servers, is able to accommodate both PC (IBM type) and Macintosh (Apple type) computers. If the correct software is used, files can be shared between the two types of computers.

■ **LAN connector.** For computers to be connected to the school network (which is a type of local area network or LAN), they must have a cable attached to the network through each computer's RJ-45 connector. This connector, usually found on the wall connected to network wiring, looks similar to a phone jack.

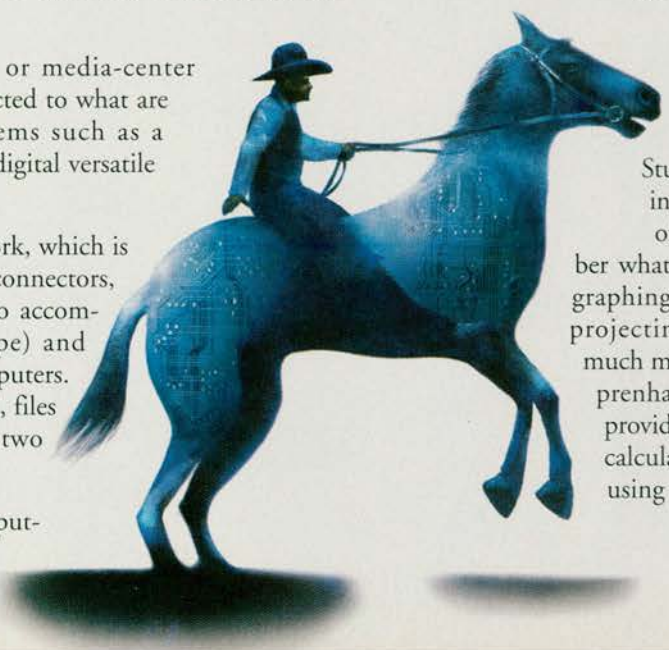
■ **Wireless system.** Schools also might have a wireless system (network). This allows students and teachers to take their computers (usually laptops) to any location in the school building where there is a wireless signal box (also known as a wireless node, access point, or airplane). A wireless system can be installed after a building has been wired, and it usually employs the existing network wiring. To learn more about wireless networks, try this Web site: www.dcet.k12.de.us/teach/reynolds/wired1.html.

Hardware

■ **Projection capability.** It's extremely important to have some sort of computer projection capability in a classroom, so that a whole class can see what is on a computer screen. Separate projection devices that produce high-quality images are still quite expensive. However, a simple computer connection (available for under $200) plugged in to a large-screen TV works well; and a single device that can be shared among the teaching staff will allow for quality projection when needed. Note: LCD (liquid crystal display, similar to the display on a digital clock radio) panels rarely work well as projection devices because they need a darkened room and a powerful overhead projector for students to be able to see well.

■ **Appropriate student/computer ratio.** Realistically, it's not yet possible to have a one-to-one student/computer ratio. A reasonable goal for now is five computers for a classroom of thirty students. This provides enough computers for data collection and analysis, lab report writing, or exploration.

■ **Space and hookups.** It's important that people designing the computer network plan for the best use of space when computers are added to classrooms. Electrical outlets and network connectors will need to be installed. If Internet access is desired, a cable for connecting to the Internet server or Internet service provider (ISP) must be added.



■ **Graphing or graphics calculators.** Science and math teachers will want them. The advantage: Students see what changing a number in a simple equation does to a graph of that equation. And they'll remember what they see. Once you have them, a graphing-calculator teaching station with projecting capability makes using them much more effective. The Web site at www.prenhall.com/divisions/esm/app/calc_v2 provides a tutorial for using nine different calculators. An excellent lesson plan for using graphing calculators, designed by two Fairfax County, Va. teachers,

Ways To Get Started Using Technology with Your Students

Great, you've decided that technology can help you teach your students. But then what? How do you move from the theoretical concept of "technology in the classroom" to making sure that your students end up with accurate, substantive, quality information on their computer screens? Here are three ways to get your technology feet wet—and then help your students take the plunge.

Try some of the top-quality, free World Wide Web (www) resources that are available on the Internet.

Elementary-School Level

■ Explore the Discovery Channel Web site (www.school.discovery.com). It provides lessons, information, and investigations to complement Discovery Channel TV productions. The Web site can also be used independently of the TV programs.

Middle-School Level

■ Investigate any of the topics on "How Stuff Works" (www.howstuffworks.com). This Web site explains in plain English, often with good graphics, how almost anything works. Your students will have fun exploring car engines or how mosquitoes "work," and everyone will learn.

■ Real-world issues such as the census, traffic, or the housing market serve as frameworks for problem-solving math simulations suited for grades 8 and up. Find the data and suggestions on (www.crpc.rice.edu/CRPC/GT/sboone/Lessons/lptitle.html).

High-School Level

■ Explore the Math Forum Web site (http://forum.swarthmore.edu). Its problem of the week will challenge your students, and Ask Dr. Math is a good way to get those knotty math questions answered by an expert.

Use the software installed on classroom computers.

Elementary-School Level

■ Using the spreadsheet Excel (which is usually installed by a school district on educational computers), build a line graph or bar graph or pie chart. It's as easy as entering the numbers for each section and naming the graph. You can print out the graph, too. Your students will want to make their own graphs on all sorts of things.

Middle-School Level

■ Outline your main points for any lesson using word processing or Power Point presentation software, then hand out copies to everyone in the class. Your students can add comments to your printed outline and pay more attention to discussing the concept than to writing madly. They will get a real idea about the lesson's important points and begin to learn the importance of an outline.

High-School Level

■ Create a database or list of important topics to be studied during the course and add resources so students can expand their understanding of the topics. Include some of the good "homework help" Web sites for students who have trouble with their work outside of class. Two suggestions: www.homeworkspot.com or www.jiskha.com.

Have some money to buy computer software? Here are some good bets.

Elementary-School Level

■ Give students a chance to find out about developing graphs and their meanings using Graph Club. This software has great color graphics that makes building graphs fun for everyone. Check out former teacher Tom Snyder's complete line of quality products, (at Tom Snyder Productions, www.tomsnyder.com).

Middle-School Level

■ Present a series of problems for students to solve that are based on data provided during a short scenario about a real event. You'll find them on Science Sleuths CD-ROM (at Videodiscovery www.videodiscovery.com). It provides excellent problem-solving experience, or it can be used for assessment. Joe Clark, the CEO, is a former physics teacher.

High-School Level

■ Give physics students the opportunity to explore velocity, acceleration, or free fall. One copy of Interactive Physics (from Knowledge Revolution www.krev.com) can be the perfect tool to discuss these and many other topics with the whole class.

—C.M. and E.F.

is at www.fcps.k12.va.us/RockyRunMS/Fractal/compless.htm.

■ **Digital cameras.** Recording field trips, individual student work, or lab setups with a digital camera creates a record that can be analyzed or discussed for additional learning. Instead of just talking kids through their field trip, have them record images that illustrate the important points you want them to take away from their experience. Documented discussions can help them remember what they saw on the field trip—and what it meant. Archive the pictures in a file on your computer, or on a CD-ROM, for review or assessment later. Most digital cameras can be connected to a computer so that the images can be saved and displayed.

■ **Videodisc players.** Although this is an older type of equipment (and some people call them obsolete), videodiscs still do what they were designed to do, and they do it extremely well. For example, in our experience, Videodiscovery's BioSciII disc is better than any biology slide collection you'll ever have. You can access a series of colorful, clear slides to illustrate a discussion of habitat, feeding habits, or animal camouflage. Videodisc players and their accompany-

Tips from the Trenches

(Or How Not To Reinvent the Wheel)

It's easy to feel overwhelmed by technology. And the more people tell you that technology is wonderful, the more you wonder what the catch is. Of course there *is* a catch. Technology isn't the answer to all of education's problems, and figuring out which problems technology is able to help with takes some work.

But—and here's some good news—teachers who were on the leading edge of technology use in the classroom have tried-and-true advice to offer. Their tips, which they learned the hard way, can make your life easier. Here are some of them, ranging from the philosophical to the nitty-gritty.

Technology is a tool.
Always remember, technology isn't a goal in and of itself. The key is to use technology to help you get where you want to go—and realize you won't be using it all the time. The other piece to this is that technology isn't a silver bullet; it's not "the answer" to anything. It's only a way to enhance teaching and learning. Technology provides tools to get you someplace fast; to give you comprehensive, accurate information; and to provide a range of pathways for students at varying levels. You use the tools; they don't use you. Or as Glenn Rustay, a fifth-grade teacher at Garden City Elementary Technology Magnet School in Fort Pierce, Fla., puts it, "Any teacher who can be replaced by technology ought to be."

Technology works with the curriculum; it doesn't replace curriculum.
This is a corollary to the previous point. Because technology is a tool, it can provide valuable enhancements to your curriculum. For example, not only is the World Wide Web (www) exciting, in many cases, it can bring experts directly into the classroom and create collaborative learning opportunities for students. And it gives kids a chance to learn much more about a topic than they could, even if they could go to a top-notch university library. But as the teacher, you need to make sure that what ends up in your classroom is tied to the curriculum. While the Internet offers unparalleled access to information and opinion from around the world, it's up to each teacher to select which Internet resources get used and when. The bottom line: Technology is there to enhance the curriculum, not drive it.

Let your students teach you—and other students.
It goes without saying that you should take full advantage of any professional development opportunities to increase your skill and confidence. But you may find that your best tech mentors are your own students. While it's not reassuring to feel as though you're the class dummy, making use of student expertise is a smart move. Build in time to have your in-class experts walk you through procedures that are new to you, and maybe ask your computer whiz kids to be part of a classroom team that solves computer problems that arise. You even can use these kids to help classmates learn the basics. "Don't underestimate students" is Florida teacher Rustay's advice. Rustay goes a step further, making sure that each of his fifth-grade students is an in-class expert and tutor in one particular area.

Even one computer is enough to get started.
If life gives you lemons, make lemonade. If low-level funding gives you one computer setup for an entire classroom, squeeze maximum use out of it. When now-consultant Carol Muscara found herself in just such a one-computer-to-a-classroom situation several years ago, she strapped the computer, printer, and monitor onto a rolling audiovisual cart so that the equipment could be moved to any part of her classroom. Having a mobile computer meant it was ready for any student or group anytime it was needed. It made the single computer a real tool for just-in-time analysis and learning.

—C.M. and E.F.

ing videodiscs provide excellent images to enhance science concepts and investigations. They are as easy to use as your VCR at home—maybe easier—complete with a remote control.

■ **Still-usable old equipment.** Don't forget that older equipment, even Apple //e computers, can still be used for basics. And if no one else wants the older, albeit slower, machines, why not make them an integral part of your program? (For example, students can use them to write reports or create databases.) Computers are really quite hardy pieces of equipment. They don't break easily. If you keep them dry, they will give you many years of good service. Some software is still available from (http://hometown.aol.com/rrbp); and Vernier, a computer equipment company owned by an ex-high school physics teacher (www.vernier.com), has equipment for older computers.

SOFTWARE

■ **Basic-package components.** Most computers are delivered with a useful collection of installed software (a "basic package") containing a word processor, spreadsheet, database, and presentation software. Many have additional capabilities. Each of these applications, whether in Microsoft Office or Claris Works, can be used immediately in your instructional program to write science lab reports (word processing), compile and graph data from student interviews (spreadsheets), or analyze student classification schemes (database).

■ **One-at-a-time approach.** When it comes to computers and learning about software, start slowly. Try one new application at a time. When you and your students are comfortable with one application, try another.

■ **Existing Web lessons.** There are really excellent World Wide Web (www) sites with lessons that employ technology creatively and are all ready to use. Log onto Kathy Schrock's site (http://school.discovery.com/schrockguide) for information about a wide range of teaching materials; Education World (www.education-world.com) for recent education news, lesson plans, tips from teachers, and interesting Web site reviews; or Blue Web'n (www.kn.pacbell.com/wired/bluewebn) to find projects, activities, lessons, resources, and research for K-12 classrooms.

■ **Webquests.** Help your students answer questions and learn about a topic by taking them on a Webquest. There are good, proven Webquests at http://edweb.sdsu.edu/webquest/matrix.html. Or you can put together your own using a template forWebquests (http://edweb.sdsu.edu/webquest/LessonTemplate.html). For more on Webquests, see the sidebar on page 28.

■ **Visual-addition enhancements.** Use technology to enhance a lesson you developed to address a standard. Whether you add a series of space images from NASA (http://spacelink.nasa.gov/Instructional.Materials/Multimedia/On-line.Multimedia/Image.Archives) or demonstrate buoyancy and properties of gases using hot-air balloons (www.omsi.edu/explore/physics/air) or display a problem from the National Council of Teachers of Mathematics (www.nctm.org) to enhance algebraic thinking, the visual additions will help students understand a concept.

■ **Teacher-rated software.** If you're interested in purchasing software or seeing what other teachers think, log onto the California State Clearinghouse at http://clearinghouse.k12.ca.us. Within software with exemplary ratings, you can search at any grade level and in any content area. A comprehensive online catalog of software can be found at www.edsoft.com.

■ **CD-ROM installation.** Most software is delivered on CD-ROMs now. Each CD-ROM has installation instructions, usually on the inside cover of its plastic box. If you can't find installation instructions, try this. For a PC: Insert the CD-ROM into your CD-ROM drive. Click on your Start button, then choose Run. Type D: (or the letter of your CD-ROM drive). You should see a screen that represents the CD-ROM. Double-click on a startup icon or one that has an ".exe" extension as part of its name. For a Macintosh: An icon will appear on your desktop when the CD-ROM is read. Double-click on the icon.

■ **Reusable (multiple-use) software.** To save money, look for software that can be used more than once. If a software program presents problems that use only one set of data and have only one solution, students rarely want to revisit the software. Programs such as Vernier's Graphical Analysis, Videodiscovery's Understanding the Earth, Key Curriculum Press's Geometer's Sketchpad, or the software that comes with your computer all provide opportunities for many uses during an instructional year.

PROFESSIONAL DEVELOPMENT

■ **Budget requirements.** Professional development should be at least 25 percent (preferably, a full one-third) of a technology budget. It is essential, not an option. Really.

■ **Follow-up.** The best professional development includes some kind of follow-up.

■ **Extracurricular work.** If you want to learn how to use technology along with your students, take a class. While they usually require a fee, online classes allow you to learn about using technology when and where it is most convenient for you. Check Classroom Connect's Web site (www.k12connections.iptv.org) or Indiana University's site (http://etc.iupui.edu/tutor.html) to explore some online offerings. Note: Online courses require regular attendance to be effective.

A good place to start is one of the three-hour sessions designed to introduce you to a new software package. Or take advantage of the online tutorials for the software that comes with your computer. For instance, try www.craneis.co.uk/excel/index.html or www.ceap.wcu.edu/Houghton/EDELCompEduc/Themes/Spreadsheets/spreadsheets.html to learn some of the ins and outs of a spreadsheet. A number of CD-ROMs offer training.

■ **Talk-and-watch approach.** Talk with a colleague in your school who is already using technology effectively. Watch a class to get some ideas about what works and what doesn't.

If you want to search the Internet, but don't know how to begin, log on to www.lib.berkeley.edu/TeachingLib/Guides/Internet/FindInfo.html.

■ **Search engines.** Learn to use the Web and the search engines that help you navigate it. AltaVista (www.altavista.com) is one comprehensive search engine. A world of information awaits your investigation. By typing in a word or two that describe your interest, then pressing Enter, you will start the engine searching the Web. If you get thousands of returns (names of Web sites where you can go for information) from a search, pick one or two from the beginning of the list and review them. There is too much information for you to investigate it all, but you can quickly skim a couple of sites to find the best fit.

■ **Project-based sites.** Investigate one of the many great project-based Web sites such as Annenberg's Journey North (www.learner.org/jnorth), which provides opportunities to

investigate all kinds of migration. A list of many projects from the TEAMS Distance Learning schools can be found at (http://teams.lacoe.edu/documentation/projects/projects.html). Or try the list of sites that promote international collaboration at (www.ed.gov/Technology/guide/international/science.html). Your students will be able to explore real-world situations, collect data, and share experiences with students all over the world.

■ **Comprehensive approach.** When there are products with comprehensive uses, such as a graphing calculator or probeware, professional development becomes more valuable than ever. Most classes for these forms of technology should include ideas for using the materials, lesson plans that can be helpful, and hands-on experience with equipment. Several Web sites offer good ideas for using calculators (Texas Instruments, Inc., www.ti.com) and probeware,

Going on a Webquest

Doesn't it seem that sometimes technology provides us with just too much information? By now, most of us have had the experience of searching for information on the Internet, only to be presented with a list of 20,000,000 items (give or take a few thousand) that we can look through. But don't give up. Take the Top 10 approach. Usually, just checking out the first 10 items on the list provides the most relevant information.

And of course you don't want your students to be overcome with options, either. That's why teachers faced with the problem of information glut have begun to use teacher-built sites known as Webquests to guide their students' searches. These Web sites provide students with an exciting path through the seemingly countless possibilities presented by almost any topic. Webquests are like scavenger hunts—kids love them. And you will, too. To take advantage of many of the classroom-tested Webquests already in existence, you can start with the Webquest compilation at http://edweb.sdsu.edu/webquest/webquest_collections.htm.

Webquests aren't just for kids, though. A Webquest also can be a professional development tool for teachers who want to learn to use the Internet effectively. For an introduction to Webquests, try www.memphis-schools.k12.tn.us/admin/tlapages/quest.htm. Or to learn the components of a good Webquest so that you can evaluate the various possibilities out there, go to www.teachtheteachers.org/projects/LGurian3/index.htm.

A good way to start exploring Webquests for your students is to check out one of the many high-quality sites. For a Webquest journey to Ancient Egypt, suitable for elementary and middle school students, log onto www.iwebquest.com/egypt/ancientegypt.htm. You'll be greeted by a picture of the pyramids of Giza with links to various sources of information about Egypt—books about Egypt, graphics, archeology, Egyptian activities, and hotlinks (Internet links) to resources such as Egyptian folktales and music that can be played in the classroom. The links are followed by a list of six "missions," which ask students to explore various aspects of Egyptian life using materials presented on the Web site and via links to materials elsewhere on the Internet.

Mission 1 invites students to learn about the daily life of ancient Egyptians, including what they wore and what they ate. Mission 2, probably a very popular one, asks why and how Egyptians made mummies (questers are asked to imagine they are on a team responsible for mummifying the pharoah's pets). In Mission 3, students use archeological evidence—and this Webquest offers massive amounts— to decide which of several tombs is the one in which King Tut was buried. In Mission 4, they learn about Egypt's hidden tombs and what was discovered there, and as part of the mission, they decipher ancient hieroglyphics. King Tut is still giving us information about his life and times, and in Mission 5 students can connect with any of twenty Web sites to find out what he has told us. Finally, students who choose Mission 6 can learn to read an ancient hieroglyphics message.

A good way of using this Webquest—and most others—is to split a class up into small groups of students, with each group going on a different mission and then sharing what they uncover. This gives students plenty of experience in sorting out useful information from many sources and putting together a coherent package, as well as presenting it to a class.

If your classroom has a computer projection system, Egyptian questers can display some of the pictures that helped them draw their conclusions, and the class can solve a hieroglyphic message together. The Webquest glossary of Egyptian terms is a great resource for students to use when questions arise. All in all, this Webquest offers students a real opportunity to build their own knowledge. And there are many others of equal quality.

—C.M. and E.F.

devices that can measure temperature, pressure, flow rate, or light intensity when connected to a computer or calculator (for examples, go to the Vernier company Web site at www.vernier.com).

■ **Commercial show-and-tell.** Equipment suppliers and software publishers often will come to your school to show you how to use a new resource. Don't hesitate to ask them—nothing ventured, nothing gained.

■ **Hands-on comfort.** To produce a greater comfort level for new users, teachers should have the actual equipment that they will be expected to use on hand and available to practice with.

■ **Continuous learning.** The best support for technology use that a teacher can provide is to become a continuous learner. Technology is constantly changing, but not all new technology is right for you or your students.

To keep on top of what's happening in educational technology, get a free subscription to *Technology and Learning* (www.techlearning.com/content/about/tl_sub.html) or *T.H.E., Technical/Logical Horizons in Education* (www.thejournal.com). Better yet, get both. They are free to educators and full of good information about technology use.

Each year, *T.H.E. Journal* publishes a list of quality Web sites for all content areas, *T.H.E. Journal's* "Road Map to the Web for Educators." Signing up for a free subscription is worth it for the list alone. The most recent road map, released in September 2001, is available at www.thejournal. com.

MAINTENANCE

■ **Repair timeframe.** Tech maintenance usually is handled at the district level. Districts that are familiar with the demands of technology use in classrooms offer a forty-eight-hour turnaround for repairs. A twenty-four-hour turnaround is a goal to work toward.

■ **Contractors.** For small districts, when providing maintenance in-house isn't cost effective, maintenance can be contracted with knowledgeable independent companies.

■ **Loaner units.** Most districts (and contractors) keep replacement equipment (loaner units) for hardware that must be removed from schools for major repair. You'll be glad they do.

■ **Network manager.** When a network is established in a school building, it's essential that a network manager be a part of the plan. For large high schools (1,000 students or more), the network manager shouldn't be expected to have teaching responsibilities as well.

LONG-TERM SUPPORT

■ **Policy.** Policies for acquiring, using, and supporting technology are essential for continuity and to keep everything up and running. Policy provides the vision that keeps the program on track. And teachers can propose policy, too.

■ **Budget line item.** The technology program must be a line item in a district budget. If it's not, the program will sputter and die.

■ **Annual updating.** A technology plan that is updated annually becomes a vehicle for program development. Check out the National Center for Technology Planning (www.nctp.com) for guidance.

■ **Community support.** The community must know how technology is used and why it is essential. Community education builds support for technology—and that helps ensure funding.

■ **Replacement planning.** School boards must expect technology to be replaced at least every seven years. A three-to-five-year replacement period is more realistic for a district to stay current.

■ **Supportive principals.** For technology to be put in place in schools, it's essential that the principals be onboard and committed to the whole process.

■ **Enough time to get up to speed.** It takes at least three years—and often up to five years—for most teachers to be able to use technology creatively and effectively. The transition does not happen automatically.

■ **Acceptable use policy.** Schools planning to use technology need an acceptable use policy (AUP), which outlines expectations and provides ethical guidelines for students, teachers, administrators, and parents. Good examples of AUPs are at www.pen.k12.va.us/go/VDOE/Technology/AUP/home.shtml.

■ **Ongoing evaluation.** Continuous evaluation of how technology is used in a school provides data that can help adjust professional development and planning. Self-assessments for teachers, administrators, and students can be found with Memphis's resources for administrators on their Web site at www.memphis-schools.k12.tn.us/admin/tlapages/admin.html#self.

* * *

Bringing the range of technology that's possible and needed into twenty-first century classrooms isn't an easy task, and the five crucial aspects described here can be difficult to put in place simultaneously. There are lots of players in the process, and often many points of view.

Teachers are able to play an important part in the process when they become articulate, technologically savvy advocates of technology. Some teachers are already there. For others, it's new ground, and there's a learning curve that includes becoming comfortable around various types of technology and discovering how to use technology to the greatest advantage for students.

By now, we hope that what you have read here has helped you get ready to start exploring what technology has to offer you and your students. Take a deep breath, then let it out slowly. Then get going. The kids are counting on you. □

Lessons from the Analog World

What Tomorrow's Classrooms Can Learn from Today

By Kevin Bushweller

I love watching my parents master new technologies. First it was word processing and e-mail. Then digital photography and cell phones. A computer mouse once baffled my father—now he uses it as naturally as a steering wheel. When my mother began using e-mail, she would send a message, then pick up the phone and call the recipient to make sure it got there. She doesn't do that anymore.

Indeed, my parents are far more sophisticated than I am with some new technologies. That heartens me. Maybe they're proof that analog-era creatures can live happily in a digital world.

What impress me more, though, are the habits of mind they developed before computers. My father loves to tinker with physical things and has an architect's eye for symmetry. My mother devours long, complex novels and writes elegant letters. They're both prone to quiet reflection.

Today's so-called digital children have much to learn from those of us who grew up before computers were so heavily infused into our culture. An increasingly vocal montage of educators, psychologists, scientists, and writers are making that point.

One of them is Alan Warhaftig, a nationally recognized public-school English teacher in Los Angeles, who is also director of Learning in the Real World, a non-profit network of educators seeking balance in the pursuit of educational technology. Warhaftig told me his students used to protest when he played classical symphonies or jazz as background music during some of his classes. The kids wanted the sounds of hip-hop, rap, and alternative rock. But Warhaftig said no. His classroom was his world, a place where the sounds of J.S. Bach and Miles Davis and the words of William Shakespeare and Ralph Ellison are revered.

"My role is not to go and meet the kids in their world and hang out there," says Warhaftig, who teaches at the Fairfax Magnet Center for Visual Arts and is one of a select group of high school English teachers certified by the National Board for Professional Teaching Standards. "My role is to drag them into my world."

By pushing and prodding students into his world, Warhaftig believes he will teach them lessons that will last a lifetime. By and large, the lessons the digital child can learn from the analog adult are commonsensical. Unfortunately, these lessons are also easy to lose sight of in our technology-driven culture.

The tortoise learned more than the hare

Faster isn't always better. In *The Child and the Machine* by Alison Armstrong and Charles Casement, Karl Pribram, an internationally recognized brain researcher, points out that rats learn faster than humans. But the complexity of their learning is limited. Unlike humans, rats are not prone to ponder. Rather, they simply react. "...Some skills need to be developed slowly," Pribram told Armstrong. "[For humans] it is the level of complexity that is important."

Particularly now, in this speeded-up world, educators need to be reminded of that, says William L. Rukeyser, a founder and former director of Learning in the Real World. Rukeyser, who is also a former California state education official, says one of the more dangerous assumptions floating in education circles is that digital-age children process information faster than those of us who grew up before computers.

It's tempting to buy into that assumption if you've watched young kids zoom around the Web or navigate a computer game. They appear to have a natural knack for "mind speed." But Rukeyser and others say there's no defini-

ILLUSTRATED BY MICHAEL GIBBS

Kevin Bushweller, the former senior technology editor of Electronic School, *is an assistant managing editor at* Education Week. *This article is reprinted from* Electronic School, *September 2000, with permission from the National School Boards Association,*


rainbow

tive research showing that the brains of today's children have somehow evolved to better fit the parameters of a digital world. He cautions educators: "It should not be accepted as a given that [digital age] kids think differently than we do."

Learning to read, for instance, is a methodical, oftentimes agonizing process. It takes years to master the skill, but once mastered, it is one of the best predictors of success in life. I've watched my nine-year-old son develop his reading skills—step by plodding step. There was nothing speedy about it. Now, he's reading well above his grade level; getting him there was mostly a matter of good teaching and good books, which I hope my six- and three-year-old sons will get heavy doses of as well.

Years ago, I was struggling in a college chemistry class. In today's vernacular, I'd be labeled "scientifically challenged." My father, a chemistry professor, advised me to slowly copy over my notes after each lecture. "Slowly" was the operative word, he told me, because it would force me to think about the concepts. I followed his advice and got a B+.

Says Warhaftig: "Learning to read, learning to think—I don't think any of that has changed."

Stay grounded in the real world

When kids are involved, there are certain scientific experiments that are best conducted in the simulated worlds of computers. A nuclear chain reaction comes to mind.

Arthur Eisenkraft, a physics teacher in Bedford, N.Y., who served as president of the National Science Teachers Association last year, says he can think of several other scenarios that work best on computers. What would happen, for instance, if the law of gravity behaved differently?

But, Eisenkraft cautions, spending too much time in simulated worlds is a mistake. "The problem with computer simulations is that they are not real," he says. What's more, "computer simulations can make mistakes. Nature cannot." In other words, nature is what it is. A simulated version of a forest, no matter how well designed, is still fake.

Simulated worlds, Eisenkraft says, do not provide the serendipitous learning experiences that occur in the real world. To study the laws of motion, for instance, students might examine how a block of wood slides down a plane. In a simulated version, the perfectly programmed block slides neatly down. But a real block of wood might roll off the side of the plane. Why? What happened? What laws of physics made it fall? The student must figure out what happened, and that's when learning can take some curious twists and turns.

In Minnesota, "hands-on" learning made national headlines about five years ago. Le Sueur, Minn., biology teacher Cindy Reinitz took her middle school students on a hike to examine a pond. The students found frogs with missing or extra legs and one with a small eye staring out from its throat. The students dissected some of the frogs, conducted water and soil studies, interviewed geneticists at the University of Minnesota, and—in a splendid example of the appropriate use of technology—documented their findings on the Internet for other students to see. Their discovery drew the attention of scientists, who then studied frog deformities in Maine, Minnesota, and Vermont.

The ability to present a thoughtful lecture is still a valuable piece of any teacher's repertoire.

"...Computers should enhance, but not replace, essential 'hands on' laboratory activities," says an NSTA position paper titled "The Use of Computers in Science Education." Adds Eisenkraft: "I would certainly not want to see a pilot trained on a flight simulator flying a plane without real flight experience. Most experiences that can be done in the real world should be done in the real world."

Style should never overshadow substance

To be fair, this adage applied long before PowerPoint presentations and multimedia razzle-dazzle. Years ago, William L. Blundell, a *Wall Street Journal* editor and author of *The Art and Craft of Feature Writing,* described what he called "well-written failures"—poorly reported stories told in perfectly polished prose. Inevitably, he said, such writing was noticeably uninspiring.

In today's classroom, the problem is more likely to be "well-produced failures"—multimedia presentations that put more effort into glitzy graphics and entertaining video clips than the substance of the topic. "Too often," says Rukeyser, who during his time with Learning in the Real World travelled across the country to convince educators and policymakers to take a more critical look at the use of educational technology, "we tend to reward sizzle rather than steak."

Others agree. "One thing we're seeing a lot of these days is kids are making a zillion PowerPoint presentations," says Margaret Honey, director of the Center for Children and Technology in New York City. "Where is there value added?"

Sometimes, of course, PowerPoint is the perfect tool. Honey says a student or teacher who is doing a presentation on the power of persuasion—particularly in advertising—could use PowerPoint to show how certain colors, sounds, and images convey a message better than others. But, she warns, it's a mistake to use the technology simply because it's a novel way to convey information.

The style-over-substance problem is also evident in students' almost compulsive toying with computer fonts. In *The Child and the Machine,* the authors Alison Armstrong and Charles Casement point to a research study of eighth-graders. As the students wrote first drafts of papers, screen-recording software kept a record of the computer functions they used. The feature used most frequently was the format, not the edit, function.

Two years ago, the National Assessment of Educational Progress released a discouraging report on the quality of students' writing. It found that only about 1 of every 4 students at each grade level tested (four, eight, and twelve) performed at or above the proficient level—only 1 percent of students in all three grades performed at the advanced level. This lackluster performance cannot be blamed on computers, which can have a very positive effect on the quality of students' writing. But one thing is clear: Students need to pay greater attention to what their words say and less to how they look.

Don't heckle the Sage on the Stage

Educators like to rail against the so-called Sage on the Stage—the teacher who knows a subject well and imparts that knowledge through lectures. To be sure, droning on or arrogantly pontificating is a colossal turnoff to kids, especially today's digital children, who have so many alternative ways to soak up knowledge and understanding.

But the ability to present a thoughtful lecture is still a valuable piece of any teacher's repertoire. A good lecture provides a foundation of knowledge for students to build on and helps improve their listening skills. The best literature teacher I ever had stood at a lectern holding an old paperback copy of Dostoevsky's *The Brothers Karamazov.* He picked through the nuances and complexities of that novel carefully and slowly. He asked probing questions and demanded thoughtful responses. He was, in other words, a sage on the stage.

Hard-line constructivists—those who believe teachers should be primarily "guides on the side," encouraging students to construct their own knowledge—would probably deride my literature teacher. For them, learning should be student-centered, freed from the authoritarian grasp of teacher/lecturers, oriented toward exploration.

That is an important part of instruction. But Warhaftig laments: "The constructivists have taken over education to a shocking degree." And he is skeptical of their notion that students are clients who can design their own reading lists and surf the Web to understand the complexities of literature, history, science, or mathematics.

"Student-centered learning can often end up reinforcing misinformation or misconceptions," adds Christopher Cross, president of the Council for Basic Education. "If you look at the Web, there's so much information out there that is without reference to quality. Students could end up with shared ignorance rather than enhanced wisdom."

Jeanne S. Chall made the same point in *The Academic Achievement Challenge: What Really Works in the Classroom.* Chall, a professor emeritus of the Harvard School of Education who died two years ago, argued that students learn more in teacher-centered (not student-centered) classrooms. Teachers who use student-centered learning exclusively, she wrote, are doing a particular disservice to children who are struggling in school.

Ideally, educators need to strike a balance between the two approaches, says Honey: "There's never just one effective way to teach. Sometimes, it makes sense to do an overview lecture; sometimes it makes sense to break into groups. Teachers who lecture all the time are just as problematic as teachers who throw kids into groups all the time."

Linear thinking works

A year ago, I tutored a community college student in writing. I was impressed by his ability to surf for information, hypertexting from here to there and virtually everywhere. If there was pertinent information on the Internet for a topic he was writing about, he could find it.

What he couldn't do was synthesize that information and attend to the task of writing a well-structured, cogent paper. He seemed lost. Whenever he got frustrated, he'd return to the Web, searching for more information, distracting himself from the real task.

It is students like this young man who worry Jane Healy, an educational psychologist and author of *Failure To Connect: How Computers Affect Our Children's Minds and What We Can Do about It.* In today's digital world, Healy says, learning how to use hypertext (nonlinear thinking) to navigate through mountains of information is a necessary thinking skill. Yet so is reading a book from cover to cover, listening to a teacher read a story aloud, writing well-organized research papers, designing coherent oral presentations, or mastering multiplication tables.

Linear thinking, Healy argues, develops the mental discipline necessary to stick to a task even if you're not thrilled about it. "It's a terrible mistake to give that up," she warns. "Both types of thinking (linear and nonlinear) are important."

Plus, assuming everyone is naturally a nonlinear thinker is a mistake, says Gary Bloom, a former superintendent who is associate director of the New Teacher Center at the University of California at Santa Cruz. Some students, he points out, perform best in structured environments where they can focus on one task at a time. Others can thrive while doing multiple tasks in highly distracting environments. For example, Bloom says, one child might feel perfectly comfortable doing homework with music blaring or the television turned on. Another might need to be blanketed by silence to concentrate.

But Bloom suggests even the "multi-taskers" need to learn how to slow down, pause, reflect, and focus on one task at a time. "What will we lose if the next generation doesn't have the patience or skills to read a novel?" he asks. "I'm convinced we lose something."

Learning isn't always fun

Rarely a week goes by without our office receiving some new piece of software promising to make classroom learning "fun." My nine-year-old loves activities that are fun. That's

(Continued on page 45)

Steady Work

The Story of Connecticut's School Reform

By Suzanne M. Wilson, Linda Darling-Hammond, and Barnett Berry

To appreciate Connecticut's school reform effort, which is described in the following article, it helps to take a stroll past some landmarks in recent education history.

The Connecticut reform got started four years before the Education Summit of 1989, presided over by then-governor of Arkansas Bill Clinton and President George H.W. Bush, and it predated the National Education Goals of 1990 and Bill Clinton's Goals 2000 legislation, passed in 1992. Also in that year—and six years into Connecticut's reform effort—Chris Whittle announced his ambitious proposal for a nationwide system of for-profit Edison schools that would reform K-12 education and turn a profit. It was subsequently abandoned in favor of a school management business. Since then, we have also seen EAI, another school management business, come and go, and voucher schemes—for example in Milwaukee and Cleveland—promise much and achieve results that are modest at best.

All that time, Connecticut has been engaged in a reform process that still continues—examining, re-examining, and redoing pieces of its education system that need work. It would be tempting to call Connecticut the tortoise among many school reform hares, except that reforming schools is not a competition, and no one ever reaches a finish line. Probably that is one of the most important lessons Connecticut's school reform has to offer.

—Editor

In recent years, people who study and think about education have come to agree that it will be impossible to improve student learning unless we have a corps of highly qualified teachers.[1] As a result, a growing number of states have passed laws that aim to upgrade teacher recruitment, education, certification, and professional development. While this increased attention to teachers' learning is heartening, we know little about how and when teacher-quality policies can enhance student learning.

That's why the story of the Connecticut school reform is so important. It's not a tale of an overnight turnaround; neither is it one of reforms *du jour* regularly taken up and then discarded. The Connecticut State Department of Education—with steady support from elected officials—spent fifteen-plus years creating, supporting, and revising a coherent set of policies for improving teacher learning that are also aligned with standards for students. And the state has continued to provide the financial support to make these policies a reality.

Our interest in improved teaching is, of course, grounded in the assumption that better teaching will lead to increased student learning. And, indeed, Connecticut's long-term investment in teaching quality has had a substantial payoff. By 1998, Connecticut's fourth-grade grade students ranked first in the nation in reading and mathematics on the National Assessment of Educational Progress (NAEP) even though student poverty and language diversity had increased over the course of the decade. In addition, a higher proportion of eighth-graders in Connecticut scored at or above "proficient" in reading than anywhere else in the nation. Connecticut students were also the top performers in writing, and the only ones to perform significantly better than the U.S. average. A 1998 study linking NAEP with the Third International Mathematics and Science Study found that, in the world, only students in top-ranked Singapore outscored Connecticut students in sci-

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ence. While there remains an achievement gap between white students and the large and growing minority student population, the more than 25 percent of Connecticut's students who are black or Hispanic substantially outperform their counterparts nationally as well.

Two themes dominate the history of Connecticut's school reform. First, this is a story of policy alignment, and what can happen when education policies—those dealing with professional development, teacher and student standards, and student testing—all work together to a common end. And since such alignment does not happen over night, this is also a story of "steady work," of state department staff collaborating with teachers and principals to craft, revise, and revise again the policies that form the backbone of Connecticut's reforms. Gradually—over fifteen-plus years—a comprehensive system of aligned, and tested, policies emerged.

We could simply describe the system that currently exists in Connecticut; but this would miss the point, for any lessons to be learned from the state's experiences depend on seeing how Connecticut built its system over time. The story divides itself into two waves of reform: the first concerned with teacher quality and the second—building on the first—with a standards-based reform that aligned student and teacher standards.

Wave One: A Two-Pronged Approach to Teacher Quality

In 1985, Connecticut began its statewide reform effort by focusing on incentives for teachers as well as standards for teaching. Recognizing that it would be difficult to raise teacher quality without improving teachers' salaries, the state provided "salary grants" that gradually increased the average teacher's salary from a 1986 average of $29,437 to a 1991 average of $47,823. At the same time, districts were given incentives to hire qualified teachers by restricting the grant money to fully certified teachers and by phasing out emergency credentials. The policy also enhanced poor districts' ability to compete in the market for qualified teachers by giving them larger grants than their wealthier neighbors. To attract high-quality candidates to the profession, there were incentives for prospective teachers, including scholarships and forgivable loans. In most years, Connecticut continues to rank first or second in the nation in teacher salaries even though the trust fund that made these incentives possible ran out in the early 1990s.

Supporting new teachers. Meanwhile standards for teachers were also raised. Central to these new policies was a certification system, with beginning, provisional, and professional levels, which also included a post-baccalaureate alternative route.

The state department of education began by requiring that prospective teachers demonstrate mastery of basic skills and knowledge by passing PRAXIS I CBT. Secondary teachers had to pass the relevant PRAXIS II content-area examinations, and a content-proficiency examination—the Connecticut Elementary Certification Test (CONNECT)—was developed for elementary teachers.

During this first wave of reform, first-year teachers received a one-year certificate and then participated in the Beginning Educator Support and Training Program (BEST). All new teachers were observed and evaluated by assessors—experienced teachers, administrators, and teacher educators who had been trained to use an observation instrument and look for certain competencies. New teachers could take up to two years to complete the requirement.

From the beginning, BEST provided support for novice teachers, replacing the old-fashioned practice of sink-or-swim with a system of continuing support. Each first-year teacher worked with a trained, school-based mentor or mentor team, and he or she could also attend three 3-hour clinics to prepare for the assessment. All first- and second-year teachers also participated in a fifteen-hour, year-long seminar taught by exemplary teachers and designed to help novices think about their practice and prepare for their assessment. This system of assessments, supports, and training seminars was, and is, viewed as far more than a way of preparing young teachers; it represents a considerable investment in professional development for their more experienced colleagues as well.

Aligning student assessments. As the state department refined and revised the teacher assessment policies, it also worked to bring standards for students in line with the emerging teacher standards. One important piece entailed the Connecticut Mastery Tests, the traditional statewide-standardized student achievement tests. The state wanted to assess both basic skills (in mathematics, reading, writing, and listening) and the application of those skills to "realistic

problems" using more authentic measures. So augmented test items were added to the mastery tests, including short-answer and longer essay responses to extended samples of literature and other texts; and performance assessments were designed and used in selected fields. In 1991, the General Assembly also passed legislation to create a tenth-grade Connecticut Academic Performance Test, first implemented in 1995, which assesses mathematics, science, language arts, and interdisciplinary studies.

High stakes for teachers—and low stakes for students. Connecticut has been a leader in adopting reforms designed to raise teaching standards, and it holds teachers to these standards: Teachers who cannot pass the BEST—after several tries with much support—cannot teach in Connecticut. However, student performance is treated differently, and policymakers believe this approach is working.

A study prepared for the National Education Goals Panel concluded that it was Connecticut's use of low-stakes testing—along with more authentic measures of reading—that contributed to the gains in student achievement. A key to the usefulness of these tests, according to the report, is "the wide dissemination of the...test objectives and the increasingly user-friendly reporting mechanisms" that make results available.[2] The state department not only reports student assessment results within districts grouped by similar student populations, it also gives the districts raw data in computerized form, allowing them to do more targeted analyses. Equally important, the state provides additional resources to the neediest districts, including funds for professional development for teachers and administrators, preschool and all-day kindergarten for students, and reduced pupil-teacher ratios.

Clearly, student achievement is important in Connecticut. Indeed, it drives the system. But when students fail, adults are asked to analyze the reasons for this failure, and those adults are then given the resources necessary for continued professional development and the implementation of other practices that will help raise student achievement.

Wave Two: Standards-based Reform

Connecticut's effort to reform its education system was given additional urgency when the Connecticut Supreme Court decided *Sheff* vs. *O'Neill*, a suit alleging that de facto segregation in the Hartford Public Schools led to minority students' getting an inferior education, in favor of the plaintiff. The decision found that "racial and ethnic segregation has a pervasive and invidious impact on schools, whether the segregation results from intentional conduct or from unorchestrated demographic factors," and it ordered the state to remedy inequities and design a plan to ensure that all students had equal educational opportunities.

The new reforms were designed to build upon the foundations laid by the earlier reforms. Again, the content of the reform was impressive in scope and impossible to achieve quickly. Four new pieces are especially critical. One involved the alignment of student and teacher standards; another, the replacement of the generic teacher observation process with a new subject-specific portfolio system and an enhancement of the support system. A third led to changes in the certification standards for teachers and teacher education programs. Perhaps the most ambitious addition involved increased attention to on-going professional development.

Standards for teachers and students. The state's "Common Core of Learning"—a statement of expectations about student learning—was revised and became the basis for all other policies. It is an ambitious vision of student learning that includes (1) basic skills and competencies (reading, writing, speaking, listening, viewing, quantifying, problem solving, reasoning, working collaboratively and independently); (2) understandings and applications—that is, discipline-based and interdisciplinary skills (such as language arts, mathematics, science, social studies, world languages, and the arts); and (3) aspects of character (including, responsibility and integrity, effort and persistence, intellectual curiosity, respect, citizenship, and a sense of community). This new "core" went well beyond traditional and previous lists that focused primarily on basic skills and competencies.

Next came Connecticut's "Common Core of Teaching," a document that describes the professional knowledge and skills necessary for teachers who will guide students in meeting the new standards. It includes the basic skills and competencies required of all K-12 teachers and subject-specific professional standards for the knowledge, skills, and competencies of elementary school teachers and teachers of English/language arts, social studies, mathematics, music, physical education, science, special education, visual arts, and world languages.

Beginning teacher assessment and support. But teachers can't be expected to meet these standards unless they are prepared to do so. Thus, a second piece of this reform involved replacing the generic classroom observation with subject-specific portfolios (modeled on the work of the National Board for Professional Teaching Standards) and enhancing the support system. Instead of a one-hour observation looking at goals, plans, and procedures, the portfolio analyzes longer segments of teaching in relation to student learning.

The portfolio is highly structured. Although details vary according to content area, all novice teachers document a unit of instruction dealing with an important concept. This involves describing a series of subject-specific lessons; discussing how they assess student learning; and reflecting on their teaching and their students' learning. The materials used to do this are familiar to anyone who has put together a portfolio: lesson logs, videotapes, teacher commentaries, and student work.

Each portfolio is evaluated by two trained assessors who are experienced teachers certified to teach in the candidate's area. If they were looking at the portfolio of a novice math teacher, for example, they would be asking questions such as, "How appropriate are the mathematical tasks the teacher selects for the instructional goals and objectives? How does the teacher promote student discourse in the classroom? How effectively does the teacher manage the physical, time, and social aspects of the classroom?" The bottom line is whether the teacher's decisions make sense given the content

they are trying to teach and the context in which they are working.

Portfolio scores are sent to candidates (as well as the superintendent of their home districts) in September. Candidates who score at levels two through four (out of a possible four) are eligible for the provisional educator certificate as long as all other criteria are met. Candidates who receive a level-one score (below basic) are eligible for a third year in the BEST program. However, candidates who receive an unacceptable score of zero are eligible for a third year only if the superintendent requests it and the commissioner of education can find "good cause."

An elaborate support system helps beginning teachers negotiate the challenges involved in the portfolio process. In the first year, all have a mentor or a support team. They also participate in subject-specific seminars offered at regional centers. In their second year, new teachers can continue working with a mentor and participating in subject-specific seminars. Those who do not meet the portfolio standard in year two receive extensive feedback and coaching before they resubmit the portfolio. Among the resources available are collections of model portfolios and workshops, offered by experienced teachers, that focus on the technical aspects of putting together a portfolio. The state department is now collaborating with universities to offer courses that incorporate the content of the portfolio workshops.

Perhaps this system sounds rigid and top down. It is not. Rather than controlling all aspects of the BEST program, the state consistently seeks input from teachers and teacher educators. This strategy has helped to keep the program open to innovation and change. It has also helped to give the program validity with teachers; and by encouraging them to think and talk about how to improve BEST, it continues to build capacity for professional dialogue throughout the state.

Changes in certification. As these changes in how new teachers are initiated were taking place, Connecticut also approved changes in certification requirements, now being phased in, that were designed to strengthen clinical field experiences for beginning teachers, extend the education of bilingual educators, and focus on competencies rather than course credits. Perhaps most notable is the requirement that teachers have field experience in every area in which they seek an endorsement.

Finally, the state department revised the standards for approving teacher-preparation programs to make them consistent with best existing national standards. Effective July 2003, the state will adopt National Council for the Accreditation of Teacher Education (NCATE) standards. They are aligned with standards developed by the Interstate New Teacher Assessment and Support Consortium (INTASC), which is sponsored by the Council of Chief State School Officers, with Connecticut's "Common Core of Teaching," and with the standards of the National Board for Professional Teaching Standards. Furthermore, all preparation programs will be required to demonstrate that their students are familiar with the state's teaching and learning standards, as well as the statewide student assessment programs. Creating a powerful beginning teacher assessment and support program allowed the state to move out to related domains, in this case, the realm of teacher preparation.

Supporting practicing teachers. But what about teachers who were already working in the system? The first reform effort had established the Professional Educator Certificate, which required certificate holders to complete ninety hours of professional development every five years. To help teachers meet this requirement, school districts were to offer eighteen hours of "high-quality" professional development every year. However, during the first wave of reform, districts received little guidance concerning the professional development, nor was there much discussion of Connecticut's policies concerning CEUs, the nationally recognized unit of measure for documenting not-for-credit professional development, which Connecticut had adopted.

So, in 1999, the State Board began revising this part of the system. It aligned teacher evaluation and professional development with the state's teaching and learning standards, curriculum framework, and BEST; and it rewrote the guidelines for CEUs to make sure that all professional development would focus on improving teacher knowledge and skills and be directly tied to the state standards for teaching and learning.

Participating in BEST, the program for initiating new teachers, turns out to be a significant piece of the state's continuing professional development. As of the 1997-98 school year, approximately 20 percent of the state's veteran educators had participated in BEST as mentors, cooperating teachers, and/or assessors, and if you include beginning teachers, BEST has touched nearly half of the teaching force. Now that the program has been in place for a number of years, state department staff are able to recruit experienced teachers who themselves went through the portfolio process as mentors and assessors. But as we suggested above, merely looking at the numbers does not convey the impact of the BEST program.

Educators across the state report that the portfolio assessment and support system has helped them to develop a common language for talking about teaching and learning and deepened their capacities to reflect on their practice. And state department staff report a similar effect on their own learning: Just as they require teachers to examine data in making decisions, the department also collects and analyzes data to inform the design, and subsequent redesign, of its policies.

Impact on Students and Teachers

The Connecticut story is complicated because teachers and state department staff alike are constantly adding new pieces—and revising previous programs and practices. And it is still too early to know the full impact of these increasingly well-articulated and aligned policies about teaching and learning. Yet, it also seems clear that Connecticut's investments in teaching quality are paying off. Connecticut fourth graders outscored all other students in the U. S. on the 1998 NAEP reading test scores released in 1999. Trend data show that fourth graders' average scores grew signifi-

cantly over time, from 222 in 1992 and 222 in 1994 to 232 in 1999. Students scoring at or above the proficient level moved from 34 percent to 46 percent (the national trend was 17 percent to 29 percent). Eighth graders also met or surpassed student performance in all other states. The eighth-grade average scale score (272) was in the highest group, along with Maine (273), Montana (269), and the Department of Defense schools (269).

In the NAEP Trial State Assessment in 1996, Connecticut was among the five states with the highest mathematics scale scores for fourth graders and among the eight states with the highest average scores for eighth graders. Fourth graders who scored at or above "proficient" in mathematics rose from 24 percent in 1992 to 31 percent in 1996 (the national numbers went from 17 percent to 19 percent). Eighth graders who performed at or above "proficient" rose from 22 percent in 1990 to 31 percent in 1996 (the national trend went from 15 percent to 23 percent).

The impact can be seen in other ways as well. Within three years after the 1985 measures raising teacher salaries and creating financial incentives for new teachers, Connecticut's long-standing shortage of teachers in its urban areas was transformed to surpluses statewide. And even as demand for teachers has increased in recent years, the state has continued to maintain those surpluses. Insiders report that the competition for teaching positions in Connecticut is high and that the pool of qualified applicants is impressive. In 1990, nearly one-third of the new teachers hired had graduated from colleges rated "very selective" or better in Barron's *Index of College Majors* and that 75 percent of them had undergraduate grade-point averages of B or better.

A word of caution. But are the achievement gains tied to Connecticut's investment in teachers and teaching? Since ours is a historical analysis, we cannot tell whether a causal relationship exists. However, we can rule out a number of explanations that are not related to education policy. During the 1990s, Connecticut's student population did not become more advantaged, nor did lower-wealth or lower-achieving students leave the state's schools, get held back in grade, or get pushed into special education categories in which their scores would not count—consequences of some high-stakes testing programs that can artificially inflate test scores.

In fact, Connecticut's median household income dropped during the 1990s and its poverty index grew by nearly 50 percent. The proportions of students who are members of traditionally underserved minority groups also grew during the decade: Between 1992 and 1998, the percentage of black students grew from 12.9 percent to 13.7 percent, and the percentage of Hispanic students increased from 10.7 percent to 12.1 percent. Moreover, increased immigration from many parts of the world means that Connecticut has experienced steady growth in the percentage of students who are new English-language learners. It is no surprise, unfortunately, that there are achievement gaps between white and minority students and students from more and less wealthy families. What may be surprising is that, in the 1990s, as achievement rose for students from every group, across all types of districts, these gaps diminished.

Nor have some reforms that are popular in other states—like reducing class size or increasing instructional time—played a role in Connecticut's success. Connecticut's class size dropped by less than one student per class in the early elementary grades and grew by more than that amount in the upper grades between 1991 and 1998, leaving the state ranked fourteenth nationally on this indicator. Total instructional time grew by an average of only 4 hours per year in elementary school and an average of only 23 hours in middle schools, leaving Connecticut ranking thirty-fourth nationally, well below the national median. All of this suggests that teaching might well account much more for the state's extraordinary levels of learning than other potential factors.[3]

A package of policies. These observations about factors that were *not* instrumental in raising student achievement, interesting though they are, do not answer the question as to whether Connecticut's education reform has indeed improved the quality of teaching in that state.

Scholars, noting the weak theoretical links between any one of these policies and quality teaching, continue to be skeptical about any causal relationships. We believe, however, that the "package" of policies helped create a culture that valued teachers and teaching and made it possible for teachers to develop and acquire professional knowledge at the same time as they were held to high standards.

Connecticut's history of school reform presents an unusual story of large scale, iterative, statewide change. Politi-

(Continued on page 48)

Oliver Goldsmith Comes to Nigeria

Pages from a Teacher's Journal

By Barbara Grant Nnoka

December 1958. Just exactly two months ago, I came back to Nigeria from a five-month holiday among friends in the U.S., and when I arrived at the boys' secondary school where I teach English, I was two days late for the first classes of the third and last term of the year. In addition to scrubbing and washing my own house, getting my children settled again, and doing some rapid readjustment myself (we had flown on a plane, which carried us from New York to Accra in exactly twenty-four hours), I found the school dramatic society ready with a cast to start rehearsals of Oliver Goldsmith's She Stoops To Conquer. *Lest the choice of an eighteenth-century English comedy featuring romantic schemes and mistaken identities seem a strange choice for a boys' school in twentieth-century Nigeria, I should explain that we use a somewhat adapted form of the British secondary school system, in which a countrywide exam is given annually. The three-hour literature exam covers only "set" books from a syllabus announced two years in advance.* She Stoops To Conquer *is a set book for our seniors this year and will be for the seniors next year. Having taught it twice and rehearsed it for a performance, I could, if anyone were to ask me, recite most of it verbatim.*

Anyway, two months ago, I took down the names of the cast, who had been selected in my absence by the vice principal. What follows is a record of our progress through to the day set for the performance, together with some of the aftermath.

September 22. We have begun on a two-rehearsal-a-week schedule for the first reading. Everything went well on Tuesday afternoon, and we had a business meeting of the society Thursday during recess; but on Saturday, I sat in the classroom appointed for the rehearsal from 10 A.M. until 10:45 A.M. waiting for six boys to walk fifty yards from the dormitory to the rehearsal place. The day students showed up, and I sent two messages to the dormitory, but I was left to cool my heels.

It is sometimes hard to cool one's heels in the equatorial rain forest of Southern Nigeria, so I considered what had happened as carefully as I could over the weekend. I am a woman—and I know boys in some Nigerian schools have confessed they believe women M.A.'s must have been given special, easier exams; for they hold it to be an incontrovertible truth that women cannot do as well as men. I think my boys have been disabused of this particular misconception, but the more I thought about it, the more certain I was that they would not have done this to even the most junior of my African male colleagues. So this morning, I knocked on the principal's door and requested some help in discipline. He asked for the names of the offenders and sent a messenger to call them from class. I went about my teaching with the senior class.

Hardly ten minutes later, three of the six offenders burst into my class and pleaded with me to write notes to the principal, accepting their late but, they insisted, genuine ex-

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Barbara Grant Nnoka went to Nigeria in 1954 as an Adult Education Officer appointed by the British Colonial Government in East Nigeria. Her assignment was to promote community development by training village women in literacy, arithmetic, housewifery, needlework, and baby care. When she married in 1955, that contract was terminated. She then taught English in secondary schools for boys for six years and subsequently served for four years as principal of a girls' secondary school. Her Nigerian career extended from 1954, six years before Nigerian independence, to 1966, six years after. This article is taken from the unpublished manuscript of a journal she kept.

ILLUSTRATED BY MENAD JAKESEVIC

cuses. But my ego was hurt, and I sent them away. After about half an hour, I was given a small scrap of paper by the school clerk, and I glanced at it only enough to note that the principal had seen the boys and expected I would have no further trouble. He thanked me for calling his attention to the matter, and I put the scrap in the back of a book. About three periods later, I went to the junior class from which most of the cast came. Eboh, who is Marlow, the tongue-tied young hero of the play (he had really chosen the part for himself by virtue of the seniority system which is deeply entrenched, and an appalling amount of self-confidence in one so young) rose and announced his resignation from the play. I was about to accept it and consider the matter closed, but Eboh had a speech to go with the resignation. "I cannot act," he said, "with six strokes hanging over my head."

I have just found the note from the principal and re-read it. He said, "I have impressed upon the actors the importance of attending rehearsals," meaning apparently that he has threatened the cast with the cane if they don't cooperate.

October 13. I have asked the president of the dramatic society to appoint a production committee, and they are to price—in the market—the following items:

- one kerosene tin to be cut in half by the tinker and made into two stage lights
- two light sockets and bulbs (as large as are sold) plus wire enough to reach the light socket dangling from the ceiling in the assembly room, which is the only source of electricity in the room
- fifteen-eighteen yards of material suitable for a curtain
- twenty-four feet of wire to hang it on
- rings to sew on the curtain
- cord

October 17. Another dramatic society adviser, a very conscientious Nigerian with excellent experience in teaching, went with me today to the principal. We set the date—November 14. We also asked the principal to write for help with the production to the heads of two schools associated with ours (by virtue of being owned by the same man): the commercial college, which is just finishing a new building and will, we hope, supply planks for the stage, and the elementary school, from which we want the "manual labor master" who knows how to build such things. The underpinnings of the stage will be, I gather, cement blocks and the benches from the dining hall. We tried a stage of similar construction one evening in 1956 for a one-act play, and the boards creaked and groaned. But I have been assured that this background noise is not necessary and can be eliminated. We shall see.

October 20. It has been decided not to tax the students for the expenses of the production, but rather to charge admission to the performance. The principal does not feel he can make attendance compulsory, but neither does he quite dare to open the performance to the public. So I am not sure we will recover the money that is being given us as an advance. But anything is better than having to collect from the boys directly, and it seems to be customary for students to support financially their own extra-curricular activities.

I must now arrange for a committee to sit at the door, usher, etc., and, frankly, I can't think of a single boy I trust not to let in his friends for free.

November 7. We are only one week from the performance. The condition of the cast is deplorable. The prospects for a stage and curtain are uncertain, and my dreams of a semi-finished production are vanishing.

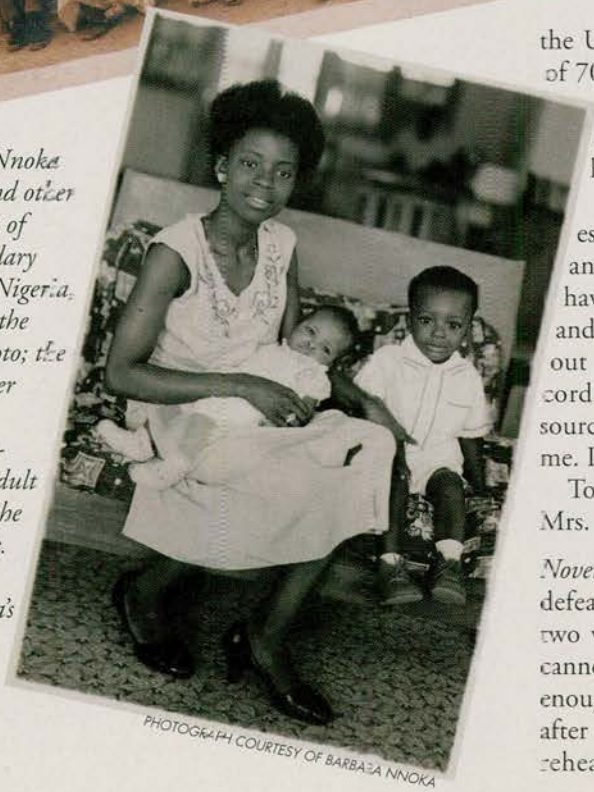
I thought we had a "natural" to play Hastings, Marlow's friend. Emanuel is tall and debonair, with a flashing smile and a dashing taste in clothes. For the past week he has been dressing up his tropical white school uniform with a paisley scarf tucked inside the open-necked shirt. He has also changed his signature from Emanuel to Louis A. (for Louis Armstrong, he says) Okegbe, and this may be a symptom of some deeper change in character. At any rate, he fails to appear at rehearsals, drags his feet when he comes, and looks, in an African way, positively pale and wan.

When we started planning for the play almost a year ago, Adebayo, who plays Tony Lumpkin, the play's prankster, was missing one large front tooth; but early in this school year the government dental office at Benin, thirty miles away, put in a false one. Adebayo's spirits were much restored, and he seemed to be enjoying Tony Lumpkin's antics. Then, one day he vanished. His seat in class was empty; a messenger to the dormitory found no trace—and finally, in a low voice, his best friends confessed, "He's lost his tooth." We are now skipping the Tony scenes until Adebayo gets back from Benin with a new tooth.

I drove David Uvieghara to the hospital today. He was in a state of semi-hysteria. I hope the medical officer has some sedatives in the pharmacy so David can get some rest. When I first got back from my American holiday, David announced at the weekly meeting of the dramatic society that the part assigned to him was too small. Remembering a nervous collapse at the end of last year when he faced a challenge similar to performing in a play, I suggested that I give the part to someone else and he could spend his time on his studies. About a month later, I announced at the weekly meeting that we needed a few servants, especially a maid with whom Kate Hardcastle, one of the heroines, discusses her plans to masquerade as a barmaid. David rose to his feet and announced he was ready. I tried to look un-astonished and said, "Thank you." He reported promptly for each rehearsal of his scene and had the speeches memorized the first week. But yesterday, he was trembling and weak, and today he was quite beside himself. I guess we should not be doing a production along with final exams.

November 11. I was kindly let off from invigilating (the British term used here for proctoring) the seniors' external examination, the Cambridge School Certificate Exam; and I have spent two days, more or less, on costumes.

Constance Neville, the play's second heroine, will wear an old lawn nightgown, dressed up with two crepe paper flowers around the bottom, a bow sash, and a rolled scarf collar. Vincent, who plays Miss Neville, doesn't know it's a nightie, and that helps. Mrs. Hardcastle, Tony Lumpkin's mother, will wear some heavy gray cotton drapes I had in 1954—three in the skirt and one for a shawl. Kate will use a cotton evening skirt of mine with a couple of different "overskirts"



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(Top) Barbara Nnoka with students and other faculty members of Academy Secondary School, Sapele, Nigeria, 1958. She is in the center of the photo; the principal is to her right. (Center) Nnoka with students from an adult education class she taught in Sapele. (Right) Emma Ibeneme, Nnoka's friend and neighbor, with her children.

PHOTOGRAPH COURTESY OF BARBARA NNOKA

and, eventually, an apron. Her bonnet—a brown paper brim covered with yellow crepe paper and fastened to a roundish back piece—is safely stashed away on top of the wardrobe. Its tie is a once-white grosgrain ribbon that I inherited from a girl with whom I shared an apartment in Washington, D.C., in 1948.

I have frills in the making for the men's neckwear—the one completed thus far was made from lace off the bottom of an old slip. I am experimenting with wig No. 1 which, at this point, consists of pencil-sized curls of cotton batting sewed onto a strip of white cloth. I have *four* wigs to do.

Tony's costume will be an odd mixture of some blue jeans and a green and brown gingham plaid jerkin over a long-sleeved shirt. The jerkin was part of a maternity outfit I had.

November 12. I went with our school's other white "madam," a Scottish wife of a Scottish engineer who works at the plywood factory in Sapele. We bought fifteen yards of a red cotton damask-like material for a curtain. (Red was the color suggested by the principal.) We have to thank the manager of the local Kingsway (the retail department of the United Africa Company, all part of the UNILEVER conglomerate) who gave us a special price of 70 cents (U.S.) a yard. This leaves me only $3.00 for all the other bits and pieces as well as the job of finding a sewing machine on which to stitch the seams and hems.

This curtain appears to have some significance, which escapes me. It *must* be hung so that it can be drawn open and closed again from the sides. We absolutely cannot have two boys, one on each side, pull the curtain by hand and body across the stage. I have not had time yet to figure out the mechanics of this, or to calculate the amount of cord we will need. But I am very busy probing for the source of this curious notion, which has risen to torment me. I have the peculiar feeling it came from a white man!

Tony has returned but failed to report for rehearsal and Mrs. Hardcastle asked me to "check" on this.

November 13. We have now begun what I am sure is a self-defeating process. We have postponed the production for two weeks. Emanuel Okegbe, who plays Hastings, says he cannot learn Act V until after the exams. I know him well enough to be certain that he is no more likely to learn lines after exams than before. But although he is never present at rehearsal unless dragged in, he is something of a leader

among the cast, and it is quite impossible for me alone to raise morale high enough to get the show on the road.

I, too, can use a little relief from the stress of extracurricular activity.

David Uvieghara returned to school today. His family took him from the government hospital the day after I got him admitted, and he has since been receiving African medicine in his own village, thirty-five miles away. He is calm although he still appears somewhat distracted, and I have not discussed the play with him.

November 21. Exams ended at noon today, and there has thus far been only dead silence from the cast.

November 24. Rehearsals have been resumed, this time at the insistence of the cast. Tony was nowhere in the compound today, but the others seem to be rising quite adequately to the occasion, now set for December 3.

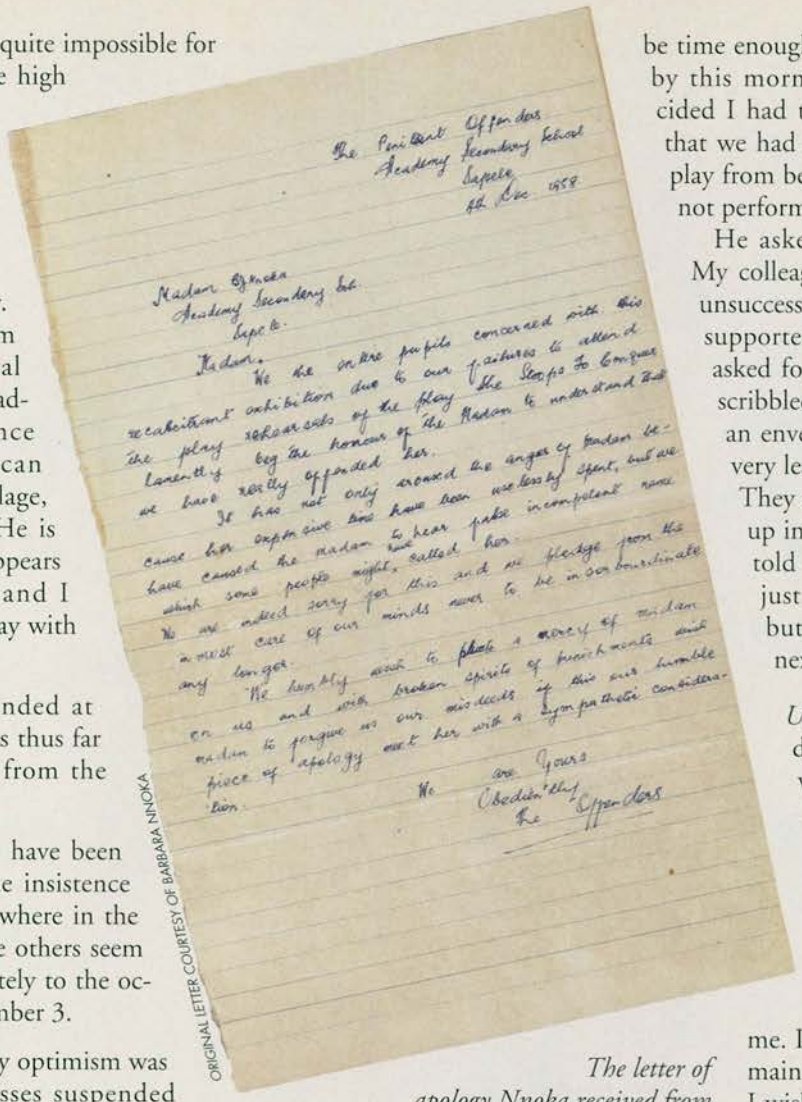
December 1 (Monday). My optimism was unwarranted. With classes suspended while masters read exams, students go to the post office, the clinic at the hospital, the 'store,' and the town. Only once during three days did we find enough of the cast in the school compound to get through one whole act.

On Friday we had finally mustered about two-thirds of the cast, and it was agreed to have a full rehearsal at 3:30 on Saturday. On Saturday, I got into school clothes and was in the Class VI room by 3:40. One or two others drifted in. By about 4:15, we had Tony, Kate, Neville, Marlow, and Hastings—but no Sir Charles Marlow (indeed we had not seen him all week), and Mrs. Hardcastle was reported to have 'traveled.' Kate vanished after the first ten minutes, strolling off the compound with the Landlord, right under my very nose. The only reason I could offer for this was that when Richard (Kate) arrived, he asked me if it was true that he had failed English. I said *yes* and then he disappeared. Father Hardcastle made his Act V appearance, but by the time we got back to Act I, he also had beat a hasty retreat. Hastings, who has been on his good behavior lately, fetched Hardcastle from his room in a nearby rooming house.

At the end of this, I said our only hope for a performance on Wednesday was a long rehearsal on Sunday—but everyone shook his head. Mrs. Hardcastle would not be back; how could they tell the other absent ones? Monday would be time enough. I said I doubted it, and by this morning, Monday, I had decided I had to report to the principal that we had not yet been through the play from beginning to end and could not perform on Wednesday.

He asked why and I explained. My colleague, who has been trying unsuccessfully to get the stage built, supported me—and the principal asked for the names of the cast. I scribbled them all on the back of an envelope—yea, even unto the very least servant with four lines. They were all rounded up, lined up in the principal's office, and told they were suspended not just for the rest of this year, but for the whole first term next year, too.

Undated. We have had two days of 'begging'—individually and collectively. Delegations have been at my house, have met me at school, have been to Emma Ibeneme, my friend and neighbor who teaches at another school, to beg her to beg me. I have thus far managed to maintain a pose of severity, but I wish I had a stage director to help me with the timing of this little drama. I have a feeling it is my cue, but I don't know my lines very well.


ORIGINAL LETTER COURTESY OF BARBARA NNOKA

The letter of apology Nnoka received from members of the cast.

December 3. We had the last staff meeting of the year today—to discuss promotions and other items. The other items included a rather self-righteous announcement by the principal about the punishment handed to the players. I thought this was a cue if I'd ever heard one, so I rose to say what seemed to me "logical" in view of some other circumstances, which had developed concurrently with the inglorious finale of the play.

I had proctored our internal final exams with great energy and had unearthed four obvious cases of cheating. Boys brought prepared answers to the exam room where, because each student supplies his own paper, he could insert the prewritten sheets in his sheaf of answer papers—if he had been lucky enough to have guessed one or more of the questions.

The first culprit was taken to the principal who gave him zero for that exam. The next day we caught four more students cheating, including the original violator, who had returned for his next exam. On his second offense, he was sent from school, but the other three were simply given failing grades for the course. The contrast between the severity of the punishment meted out to my actors and what was given

to the cheaters stung my moral sense and perplexed me. I suggested to the staff at the meeting that one value in punishment of any sort was consistency, and I asked the principal to review both cases, in neither of which I concurred with his decision.

Sparks flew. It may have been an African man who feels he should never be challenged anywhere by a woman (not that the women don't do it!) or it may have been a black man who resented the European in his midst or it may have been a principal a little uncertain of himself and not wanting to let it appear to his staff. Whatever the cause, the principal first brushed off my complaint by explaining that the cheating was just "copying," which really infuriated me. Then he pounded the table, flashed his eyes (Ibos pride themselves on their ability to look fierce), and asked me what right I had to question his motives.

Since his motives were the farthest thing from my mind, I was stumped. I tried to protest that he was missing the point, but he had to finish his speech, and in the end I decided it was easier for me to say I was sorry if I had offended than it was for him even to see that he had offended me. So I said it—and he snapped, "Thank you for saying you're sorry."

After a pause I said I was quite prepared to accept an apology from the boys concerned for time wasted, money spent, and responsibility shirked, and I hoped he would be willing to accept such an apology. I further hoped that upon application, he would reconsider the suspensions for next year. This seemed to go down better and we parted.

I went directly to Emma Ibeneme, who had been recruited by me as a mediator, so she could ask the boys to come and suggest proper apologies as a way out.

December 4. Today I received my apology. It reads:

The Penitent Offenders
Academy Secondary School
Sapele
4th Dec. 1958

Madam B. J. Nnoka
Academy Secondary School
Sapele

Madam,

We are the entire pupils concerned with this recalcitrant exhibition due to our failures to attend the play rehearsals of the play, *She Stoops To Conquer,* lamently beg the honor of the Madam to understand that we have really offended her.

It has not only aroused the anger of Madam because her expensive time have been uselessly spent, but we have caused the Madam to hear false incompetent name which some people might have called her. We are indeed sorry for this and we pledge from the inmost care of our minds never to be so insorbourdinate any longer.

We humbly wish to pluck a mercy of Madam on us and with broken spirits of punishments wish Madam to forgive us our misdeeds if this our humble piece of apology meet her with a sympathetic consideration.

We are Yours
Obediently
The Offenders.

I have sent a note to the principal recommending clemency. School closes tomorrow. □

ANALOG

(Continued from page 33)

why he plays his Game Boy whenever we let him.

But learning isn't always fun. Often, it's difficult. In the end, it's our ability to overcome the difficulties and frustrations that make learning meaningful and satisfying.

When educators talk about a student's "zone of proximal development," says Bloom, they're talking about an area of personal discomfort where a learner isn't fully competent. That's the experiential zone, he says, where it becomes increasingly difficult to make learning fun. Yet that is also when students learn the most.

Good technology used wisely can help students enter that zone. A few years ago, I saw that in practice at a 3-D animation lab at South Burlington High School in South Burlington, Vt. One of the students developed a mathematical formula to show how a spider walks. Before he could develop the program, he had to master difficult calculus concepts such as vectors and cross products. After some frustrating twists and turns, he created a twenty-five-line mathematical formula that programmed the virtual spider. It wasn't easy, and sometimes it wasn't "fun." But it was absorbing, and it was serious learning.

And it was enormously rewarding.

Human contact matters

Warhaftig told me about the "silent moments" that often occur in his literature classes after he asks a question or makes a point. That's when he pauses to read kids' faces. Do they look confused? Are they shaking their heads in disagreement? Do they try to avoid making eye contact? Then he knows whether he has to try a different approach. But if he were teaching a cyber class and all the students were at remote sites responding by e-mail to his questions or comments, he wouldn't be able to read their faces, and that, he says, would be a shame.

Says Bloom: "Digital advocates are deceiving themselves if they think they can replace flesh and blood interactions between students and teachers [with technology]."

One of the most ridiculous technological affronts to the importance of human contact is the so-called brain-building software for infants currently on the market, says Healy. "It's nonsense," she says. "Frankly, it shows how clueless the American public is about what young children really need."

But it's not just infants who need regular human contact to develop into happy, productive adults. Older children need it too, says Healy: "The ability to get along with other people...to work with groups of people...the personal skill of self control.... Those are far more important skills than how we acquire information. [Yet] those are all in danger of erosion if we use computers the wrong way."

Honey says the school districts where computers are used most wisely are both "technology rich and print rich." That makes sense to someone like me—someone who fits somewhere between a cyber skeptic and a technology evangelist. It's a perfect blend of the new and the old. A place where learning would be as natural for my parents as it would be for my nine-year-old son. □

COMMERCIALIZATION

(Continued from page 21)

The buck stops—where?

There is nothing inherently wrong with private enterprise assisting public institutions—and this includes public schools. But it is critical to recognize that children and schools are different from museums or hospitals and that different kinds of commercial involvement carry different advantages, risks, and problems.

As corporate America continues to look for new, young customers, schools and ever younger students will find themselves the targets of increasingly seductive appeals. What's more, if we enter a period of recession, corporate money will be even more tempting for schools than it is now.

In a recent commentary on encouraging students to eat nutritious school meals instead of junk food from vending machines, the U.S. Department of Agriculture noted that healthy foods are in "competition with foods that are marketed to children through multi-million-dollar glitzy and sophisticated advertising campaigns."[36] We could apply this analysis to any number of school-related commercial activities, including some within the classroom itself.

Making sure that commercial interests are not allowed to take precedence over schools' responsibilities to their students will require a combined effort from everyone concerned: teachers and administrators, who must be alert to the danger of opening students to coercion—and provide the first line of defense against this danger; businesses, who need to continue their commitment to public education but with fewer strings and without overwhelming cash-needy schools; policymakers at both the state and federal level, who must do far more to provide *all* public schools with the kind of funding they need; and, perhaps most important, citizens at the local level—parents and other members of the community—who create a climate of opinion that determines to a large extent what goes on in the schools and whose votes on school-bond and tax issues often make the difference between a school district that has enough money for its needs and one that is pinched. If these groups pull together, we can provide schools with more equal bargaining power, and we can achieve an appropriate balance between kids as students and kids as consumers. But limiting corporate involvement in the schools will also demand a renewed commitment, on the part of all citizens, to our public schools—as public institutions that exist for the common good and that are therefore worthy of sufficient support from public dollars. □

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FAUCET

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sizes the system's failures, especially its failures vis-a-vis the most disadvantaged students. These negative perceptions often undercut popular support for elementary schools and public education in general, and they miss the extent to which schools make up for the deficits in poor children's backgrounds. The real tragedy of current educational practice is that schools are organized—and children perceived—as though the more-advantaged groups are better able to benefit from the schooling process. Poor children are assumed to be "slower" learners—less capable of absorbing the curriculum—and these lower expectations color poor parents' own perceptions about their children's academic futures. This is especially unfortunate in the early grades when students' achievement trajectories are being set and their cognitive growth is most rapid.

This recognition of the power of schools to make a difference in the lives of poor students needs to be coupled with efforts to involve parents and communities in the schooling process so that all parents, not just middle-class parents, are active collaborators in the education of their children. Preschool and summer programs, properly organized, can help develop economically disadvantaged parents and their neighborhoods into active supporters of children's academic endeavors. These parents need to know, for example, that such simple activities as reading aloud to their children can have big academic pay-offs. Neighborhoods need playgrounds and coaches to encourage organized sports and craft activities in summer. Workshops and other outreach efforts could help disadvantaged adults develop some of the psychological and social capital that is so important to undergirding their children's learning. □

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CONNECTICUT

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cal winds, changing economic circumstances, and shifting demographics often take a toll on educational policy and make it impossible to sustain a single vision of reform. As a result, efforts like the one described here more often than not get derailed in midcourse. But such has not been the case in Connecticut, despite a recession in the early 1990s.

That the state education department was able to do this is, in no small measure, a result of its considerable autonomy. The governor was not trying to wrest control of education from the department, nor was the legislature blocking the staff's efforts. In our fragmented U. S. educational system, it is hard for state departments to find a foothold, much less the sustained support and resources necessary to do what Dick Elmore and Milbrey McLaughlin once described as "steady work."[4]

Yet Connecticut's department of education did just that: Taking advantage of their relative independence from political pressure, the staff gave coherence to Connecticut's educational reform. And because they had time on their side, state department staff and collaborating teachers across the state were able to see what worked and what did not. Experienced educators participated at every juncture: drafting standards and curriculum frameworks, assessing and mentoring new teachers, and participating (sometimes leading) professional development. Throughout, the state department of education orchestrated research and evaluation, using feedback from interviews, surveys, and validation studies sometimes to tinker with, sometimes to alter substantially the policy system.

We have no doubt that more changes in the Connecticut policy system are on the horizon. Recent research suggests that uneven implementation is a problem. And the state department also wants to get a bead on weaknesses in mentor training, mentoring, and portfolio development and assessment. We have learned a lot by following this unfolding policy story for the last fifteen years, and we anticipate that the years ahead will provide even more insight into how reforms designed to support teacher learning—reforms that are allowed to unfold and improve over time—can lay the groundwork for steady progress toward the goal of a high-quality education for all U. S. students. □

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