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NOTES FROM BRIEFING ON EDUCATION
ROGER PORTER
AUGUST 9, 1990

-- Having access to education is a high priority. We must educate the people to the full extent of their wishes.

-- 45 million in 108,000 elementary and secondary schools
13 million in 3,500 colleges and universities

-- There are two times more students in US colleges than in any other country.

-- 10% enroll in post-secondary education; 1/2 of them get a bachelors degree.

-- The U.S. provides a lot of financial assistance to students. No barriers, we want all kids to go to school. There is not a problem with access to education.

-- 1990: 6.8% of GNP is spent on education U.S.
5.1% in Japan
5.0% in Western Europe

-- In the last decade, we have the same number enrolled in elementary and secondary education each year. 1980-1990

-- This year, we spent $44 billion more on elementary and secondary education than in 1980.

-- Average American pupil:teacher ratio- 19:1

-- Drop-out rate is similar for the past thirty years. 70-75% of those who enroll in high school, graduate in the proper amount of time. 1/2 of the 25-35% who do not graduate go back to get their diploma or GED.

-- Dropouts occur when a person who turns 16 gets a driver's license and a job. School is boring, not needed, does not relate to job, there is no mental connection to school and future.

-- 500,000 get GEDs each year.

-- National standardized tests... we're not performaing any better than in the past.

-- There has been no real return on our $44 billion investment

-- Mathematics: Korea does two times better than we do, and they only spend 1/15 of what we do.

-- 1/3 of Americans surveyed about the Civil War, couldn't place it in its 50-year period.

-- 7% is federal spending, mostly to disadvantaged students. The bulk of education funding is at the state and local levels.

-- The majority of PhDs we give are to foreign students

-- America vs. Japan: Students arriving at Japanese universities are far better prepared. American students eventually catch up. American graduate schools are far better.

-- In the United States, colleges are intensely competitive, especially private colleges.

-- Nearly all foreign universities are government-funded.

-- Foreign students are not beating down doors to get into American elementary and secondary schools. We really have no choice. We must go to school in the area we live.

-- Spending more money on current system will not work. We need to revolutionize the system:
   1) Elevate issue of education by proclaiming POTUS was concerned about excellence.
   2) Proposed Excellence in Education Act ($440 million)
      -- merit schools; financial reward for demonstrating great improvement
      -- magnet schools; money for schools to be organized according to subject area
      -- teacher excellence awards; money to use for the school
      -- national science and math awards
      -- drug-free school grants
      -- college funding
   3) Held meetings all over the country about schools and education-related events:
      -- education is valuable
      -- we must stress excellence
      -- we must shift debate from resources to a debate about new ideas, like choice. Everywhere choice has been offered, parents become more involved. We must involve parents in the transition.

-- Parental involvement:
   1) in Korea, students get two textbooks; one for them, and one for the parents
   2) parents must make sure their children do homework
   3) in Japan, parent/teacher conferences are held in the home
   4) in the South, POTUS called for parents to get involved in their child's education

   **Choice facilitates all this; the idea should be embraced. 8 states have implemented it (4 Rep., 4 Dem.)

-- Some ideas to facilitate change in the existing school system:
   1) Determine who is responsible for a child's learning
   2) Have more explanitive report cards
   3) Arkansas has a high school entrance exam
   4) Consider implementing POTUS goals

THE WHITE HOUSE

Office of the Press Secretary
(Charlottesville, Virginia)

For Immediate Release September 28, 1989

REMARKS BY THE PRESIDENT,
GOVERNOR GERALD BALILES, GOVERNOR TERRY BRANSTAD
AND SECRETARY LAURO CAVAZOS
DURING UNIVERSITY CONVOCATION

The University of Virginia
Charlottesville, Virginia

11:56 A.M. EDT

GOVERNOR BALILES: Mr. President, ladies and gentlemen, as you may have noticed during the course of this unprecedented education summit, Virginia law and tradition oblige us to publicly envoke the name of Thomas Jefferson at least once or twice an hour. (Laughter and applause.) There are worse habits.

Mr. President, it has been an interesting -- sometimes provocative -- gathering. You asked the governors to be candid, and I think we've fulfilled that request -- perhaps beyond your fondest hopes. (Laughter.) I would also say, however, that you gave as good as you got. But these are times for candor and outspoken self-examination. These are times for us to open our eyes and our minds and face the facts. The world has changed more than we sometimes would prefer. The challenges, both internally and externally, are profound and difficult. And, frankly, we have not made it easy for ourselves.

Within the last decade, immense federal budget deficits have accumulated with resulting declines in domestic spending, including education. We need not assign blame, but we ought to acknowledge that the federal budget situation has left the states increasingly on their own to address not only education, but also health care, transportation, law enforcement and other pressing concerns.

Indeed, the federal budget deficits have been the backdrop to the education summit stage. The federal deficits confine our flexibility, limit our options, and explain our shared reluctance to discuss financial resources. To be sure, in recent years the states have stepped into the breach. Imaginative and innovative programs have been created and funded by governors and state legislators determined not to let the red ink in Washington inhibit the potential of our people in their enterprise.

But has it been enough? Has the renaissance of state governments yielded a renewed competitive America? The evidence says no. Indeed, it may be said of the American federal system of government that the whole remains less than the sum of the parts. Education is one example, but not the only one. In other words, if we are to take on education as a nation, we had better get all the parts in accord and pulling together. And you, Mr. President, have taken a valuable and important step in that direction.

Up to this point, Mr. Jefferson's preference for locally-administered education has prevailed. We will not depart from that model entirely. States and localities will continue to provide more than 90 percent of the funding and the preponderance of the direction and supervision.

And yet, there is a federal role to be more clearly defined, supported and sustained. In response to international economic competition, a consensus has emerged for an American national resolve. The Jeffersonian belief that education is the first, best hope for our Republic's enduring success has not diminished. We have simply discovered that, as the times change, so must our ideas.

That may be the finest result of this education summit that we have begun. State and federal governments together, to think anew our respective roles and to address education for the first time as a nation undivided.

Mr. President, you have a loyal ally to support your efforts in the person of the new Chairman of the National Governors Association. It is my pleasure to introduce my friend and the distinguished Governor of the State of Iowa, Terry Branstad. (Applause.)

GOVERNOR BRANSTAD: Thank you, Governor Baliles. Mr. President, First Lady Barbara Bush, members of the Cabinet, fellow governors and their spouses, President O'Neil and Mrs. O'Neil, and members of the University of Virginia community: It is indeed appropriate that this education summit be held here amidst this historic setting. On behalf of the governors and their spouses we want to thank the faculty, administration and students for hosting us here at this beautiful University of Virginia campus. And I hope we haven't disrupted your class schedules too much the last couple of days. (Laughter.)

With this historic education summit, the President and the governors have taken an important first step in the process of developing for the first time a national consensus for educational goals. We are discussing some of the most critical issues facing America today -- that is, the state of education. Our discussions underscore the breadth and depth and the complexity of the issues that we face. We believe that this summit can serve as a catalyst for change and improvement in American education.

But we know that we can't do it alone. Not even the President of the United States and the Congress, each governor and their legislature can cause the kind of changes that we want. We have to have the involvement of the people who are directly affected; the people who can assure that we get results for America's children.

These are the teachers, the parents, local school administrators and school board members. Students, business leaders, leaders in their communities. People who care deeply about American education. Only with the commitment of all of these people and with their cooperation and help can we be successful in attaining the goals that we hope to agree upon.

Governors recognize that this is a time for results. We are working hard to achieve results in our states. Results like better student performances on math, science and foreign language tests; lower dropout rates and higher graduation rates; improved adult literacy; skilled and productive workers for the jobs of the 21st century.

To get the results we want, we have to hold our education system accountable and give educators the flexibility they need to do their job. It is time to find new measures of performance based on what students know and what students can do; not just the number of classes that they complete in high school or college. It is time for more flexibility in the use of federal dollars. And better coordination and cooperation among all levels of government and the different agencies of the federal government and state governments.

We need to better serve the needs of American families and American schools.

On behalf of the nation's governors, we thank you, Mr. President, for convening this historic summit, for the process that you have started and for our opportunity to help achieve significant goals that will get results for future generations of Americans.

And now I have the privilege of introducing the Secretary of Education for the United States. Lauro Cavazos was appointed by President Reagan in 1988 as U.S. Secretary of Education. He was confirmed unanimously by the United States Senate, and before that, he had a distinguished career as President of Texas Tech University. And I'm pleased to say, he also has a PH.D. from Iowa State.

Lauro Cavazos, Secretary of Education. (Applause.)

SECRETARY CAVAZOS: Thank you, Governor. Thank you. Thank you, ladies and gentlemen. It's my distinct pleasure to be here today as we continue this historic education summit. The decisions we make will affect the lives of millions of children in the United States, and it is for those children and the future of this country that we are here.

President Bush has pledged his support for education and the need to restructure our educational system, and it is an honor now for me to introduce the President of the United States, George Bush. (Applause.)

THE PRESIDENT: Thank you all very much. Thank you Secretary Cavazos. Thank you governors. Thank you, Dr. Cavazos -- Secretary Cavazos. First, my respects to all the governors here, and I want to thank the music of that Air Force Band. Just lovely. Thank you for your performance. (Applause.) I want to thank Governor Baliles and Governor Branstad and so many others who had a very special role.

I want to thank President O'Neil and Mrs. O'Neil. It was only yesterday that I discovered that we had evicted them from the President's house. (Laughter.) And not only did they go peacefully, but they left me this necktie from Eljo's, which I'm sure some of you may recognize. (Applause.) You talk about Virginia hospitality. (Laughter.)

And I also want to pay my respects to the students and especially to the distinguished faculty of this great institution. (Applause.)

And for Barbara and me it's a delight to be back in Charlottesville. Imagine this -- you have a President, the Cabinet, America's governors all visiting your school. And the big man on the campus -- still Sean Moore. (Laughter and applause.) But, you see, we're somewhat familiar. Our son Marvin and our daughter-in-law Margaret, having gone here, both advising me to be humble while I'm at U. Hall. You see, they told me you only do the wave for Ralph Sampson. (Laughter.)

Now, it's easy to keep your perspective and be humble at a school so rich in history and in educational endeavor. And I've also been deeply impressed by the commitment, the creativity and the knowledge that my fellow chief executives bring here to this education reform agenda. In our meetings yesterday, I learned exactly how much you care about the children of your states and the future. And in short, I came to Charlottesville with high expectations, and I've got to say, you have exceeded them.

So the spirit of our summit is not: "Who will get the credit?" The spirit of this summit is: "How can we get results?" We are here to put progress before partisanship, the future before the moment, and our children before ourselves.

I've heard eloquent advice from many of you, and from so

many others, in the last few weeks. And I've listened, and I am deeply appreciative of all that I have learned.

But I've also learned that we should listen to our children. And they have much to tell us. In many ways, they are the luckiest generation in history. Just last month, our children observed, in the clarity of Voyager's sight, the horizons of new worlds, the majesty of space. And think what these images would have meant to the ever-curious founder of this univerity, who could only look through a primitive telescope at faint patches of light and wonder.

But our children are growing up in an age where wonder is commonplace, peace and prosperity often taken for granted. And our children are also the beneficiaries of a nation that lavishes unsurpassed resources on their schooling. So in many ways, we're close to fulfilling the Enlightenment dream of universal education, a dream that became a reality in the shadows of the Shenandoahs here at Mr. Jefferson's school.

And every step we take at this university is truly a walk in Thomas Jefferson's footsteps. When he first charted the ground on which we gather today, there was just a field of grass, a horizon limited only by the Blue Mountains beyond. But Jefferson surveyed a horizon that no one else could see. He saw the graceful dome of the Rotunda, the elegance of the Lawn and its pavilions. He saw meeting rooms and libraries and lecture halls teeming with professors, students yet unborn.

Jefferson set out to fashion his rarified vision into solid reality, brick by brick, book by book. And it is his University -- and his dream -- that inspires us today to follow in his footsteps.

As President O'Neil said, Thomas Jefferson, our first education president, was a relentless advocate for universal public education. "He had a fundmental conviction that on the good sense of an educated citizenry, we could build and defend a country of liberty and justice."

I borrowed those words -- this assessment -- from a friend of mine -- another Renaissance man of our time -- the late Bartlett Giamatti.

Like Jefferson, his life was a metaphor for civility and public service. And it is this commitment to public service that we must carry on. So let us make this an education society.

We have already come close to this Jeffersonian ideal. Our educational system is, in many ways, unrivaled in its scale and its diversity; in its commitment to meeting special needs and individual differences. And we're inspired by our best teachers, who give more than we can rightly expect; and from our best students, who surpass our highest expectations.

And yet, after two centuries of progress, we are stagnant. While millions of Americans read for pleasure, millions of others don't read at all. And while millions go to college, millions may never graduate from high school.

The National Assessment of Educational Progress estimates that fewer than one in four of our high school juniors can write an adequate, persuasive letter. And only half can manage decimals, fractions and percentages. And barely one in three can locate the Civil War in the correct half-century. No modern nation can long afford to allow so many of its sons and daughters to emerge into adulthood ignorant and unskilled. The status quo is a guarantee of mediocrity, social decay and national decline.

Education is our most enduring legacy, vital to

everything that we are and can become. And come the next century -- just 10 years away -- what will we be? Will we be the children of the enlightenment, or its orphans?

Six years ago, the Committee on Excellence in Education issued its powerful report; and yet today, our nation is still at risk. The educational reform movement has done well in articulating its criticisms. And now it is time to define goals. This is the time for action.

I sent my proposals for federal action in education to Congress last spring, including an increase in funding for Head Start. The Educational Excellence Act of 1989 includes ways to reshape and expand federal efforts, to recognize excellence, lift the needy, foster flexibility and choice, and measure and reward progress. I remain solidly committed to these principles and I value your advice and ideas as we continue to refine the federal role.

Some offer a completely different answer -- spend more money alone. And at the federal level, we have asked Congress to provide nearly a half a billion dollars in new funding for 10 worthy programs. Your states may also choose to spend more. But to those who say that money alone is the answer, I say that there is no one answer. If anything, hard experience teaches that we are simply not getting our money's worth in education. Our focus must no longer be on resources. It must be on results.

And this is only the third time in our 200 years as a nation that a President has called a summit with the governors. And I've called you together because you bear the constitutional responsibility for education. And I didn't ask you to such an historic occasion merely to bemoan what is wrong. We are here to work; and work together; to once again make an American education the best in the world. (Applause.) And let me say to the governors before this majestic audience, these sessions have been informative and thoughtful and very useful to me. And I appreciate the obvious extensive preparations that the governors have undertaken in the days and weeks leading up to this summit. The governors have emphasized to me the need for national performance goals and the importance of greater flexibility in the use of federal funds, while accepting enhanced accountability for the results.

And they've also stressed the high priority that helping prepare preschool children should have in federal spending even in time of fiscal constraint.

And finally, the governors have articulated eloquently the need to restructure our education system. You already are consulting with state legislators to better our schools. Our teachers already are giving their heart and soul to their jobs. But we've never before worked together -- President and principal, governor and teacher -- to achieve results in education.

A social compact begins today in Charlottesville, Virginia -- a compact between parents, teachers, principals, superintendents, state legislators, governors and the administration. Our compact is founded not on promises, but on challenges -- each one a radical departure from tradition.

I hope that you will join me, to define national goals in education for the first time. From this day forward, let us be an America of tougher standards, of higher goals and a land of bigger dreams. (Applause.)

Our goals must be national, not federal. That's why I welcome the initiatives of the National Governors Association, from the Time for Results report in 1986, to the goal-setting project recently begun under the leadership of Iowa's Terry Branstad, South Carolina's Carroll Campbell, Washington's Booth Gardner, Bill Clinton of Arkansas. And my administration will work with you to build on

the National Assessment Program's first state-by-state achievement results. We will work with you to formulate national goals. And then we're going to challenge superintendents and principals to meet these higher goals.

In return, I accept your challenge and will work with you to loosen the grip of federal restrictions. How many great ideas, how many grand and noble experiments, have been impaled on the narrow spike of a federal directive? Unnecessary restriction is the enemy of the bold. And bold action is what we need most of all. (Applause.)

I ask Congress to allow Washington to be more flexible by passing reform legislation. And I ask you, in turn, to ease state restrictions on local bodies. And then we'll judge our efforts not by our intentions, but by our results.

So to get results, we need national goals and more flexibility from federal and state government. To get results, we will need a new spirit of competition between students, between teachers and between schools -- a report card for all. And to get results, we will need discipline, structure and goals.

And yet I do not counsel a naive nostalgia, some tame adherence to the past. Business as usual is not getting us where we need to go. So when hallowed tradition proves to be hollow convention, then we must shatter tradition. The polls show what every PTA board member already knows -- the American people are ready for radical reforms. We must not disappoint them. (Applause.)

For myself, I envision tradition-shattering reform in five areas.

First, I see the day when every student is literate. But literacy should mean more than the "three Rs." We must be a reading nation. We must grapple with the hard sciences. And because education is as spiritual as it is practical, our children must know why Americans died at Bunker Hill, at Gettysburg and at Monte Cassino. And they must do more than identify names on a multiple choice question. They must understand the generosity of Andrew Carnegie and the genius of Alexander Graham Bell and the heroism of Rosa Parks.

Some youngsters will naturally take longer than others. And some will need more study and extra instruction. But we should never send a student from school to school just because he or she has passed an arbitrary birthday. (Applause.)

Second, I see a day when our educational system will be unafraid of diversity. Of course, all schools in a state will share a core curriculum and minimum standards of achievement. But the means by which that curriculum is taught and those goals met should be as diverse and varied as America itself. Let them blend, in myriad ways, the traditional and the modern, the human and the technological. Let us give our schools and our teachers the freedom to do what they do best.

Children also differ -- in their interests and learning styles and capabilities. And so, third, I see the day when choice among schools will be the norm rather than the exception -- (applause) -- when parents will be full partners in the education of their children.

Too many parents have come to see education as a service we can hand over to the school boards, in much the same way we expect our cities to provide electricity or water. But education is not a utility, not something to be delegated. Education is a way of life. And educational reform is an urgent responsibility for every parent, every student, every community. And those who do not advance the cause of education hinder it. Parents, students and professional

educators must be accountable to one another as a community.

But to be accountable, we need to know just how much progress we're making. So, fourth, I see the day when we use accurate assessments, carefully linked to our educational goals. We need to first know where we are. And this means accepting the bad news along with the good. We've always measured our progress against our past performance. We must now evaluate ourselves on a tougher grading curve -- one that includes the other major industrial nations. (Applause.)

And accountability also means we must act on what we discover. Weak performance in the classroom or the principal's office will no longer be tolerated. But neither will indifference towards good educators. Society has no greater benefactors than outstanding teachers and principals. (Applause.) And so, let them have their day in the sun, get what they deserve -- generous praise and solid rewards. (Applause.)

Fifth, I see an educational system that never settles for the minimum, in academics or in behavior. Decades of research bear out what the best teachers already know -- when standard and expectations are high, everyone does better. And this includes both the unusually gifted and those with special needs and disabilities. But it must also include the student we too often forget, the average student. (Applause.) All you guys with C's, I want to hear it from you. (Applause.) For I do believe that with a little care and a little work we can unleash within each of these so-called ordinary kids an extraordinary potential.

This same potential can be found within every disadvantged child, those from troubled neighborhoods, children for whom our schools must be a beacon of excellence, a sanctuary from violence, a model of good character, sound values, exemplary ethics. Let no child in America be forgotten or forsaken. (Applause.)

Some of our reforms and experiments are sure to come up short. But for too many of our schools, experimentation is preferable to the status quo, because the status quo could scarcely be worse. The worthy and the useful will win out only if we give our schools the freedom that they need.

And such freedom will not lead to a quick and easy solution. It's the work of years. And we've taken such a long-term view in our meetings over the last couple of days.

We've discussed the need for educational reform in terms of our national competitiveness -- you heard Governor Baliles refer to that just a minute ago. But I'm sure you agree that there is more to learning than just our trade balance or the graying of our work force; it is broader than the important, but narrow, compass of economics and government.

A scholar once wrote that great books are not lifeless paper, but minds alive on the shelves. And he observed that just as the touch of a button on a stereo will fill a room with music, so by taking down one of these volumes and opening it, one can call into range the voice of a man far distant in time and space and hear him speak, mind to mind, heart to heart.

As a nation, we can again hear these voices, feel this enchantment -- every time a parent reads a bedtime story to a sleepy child; every time a young scholar turns to the great books. The day must come when every young American can know the life of the mind. (Applause.)

I might say parenthetically that is why my wife, Barbara, for many years, has devoted a lot of her time to making this country more literate. (Applause.)

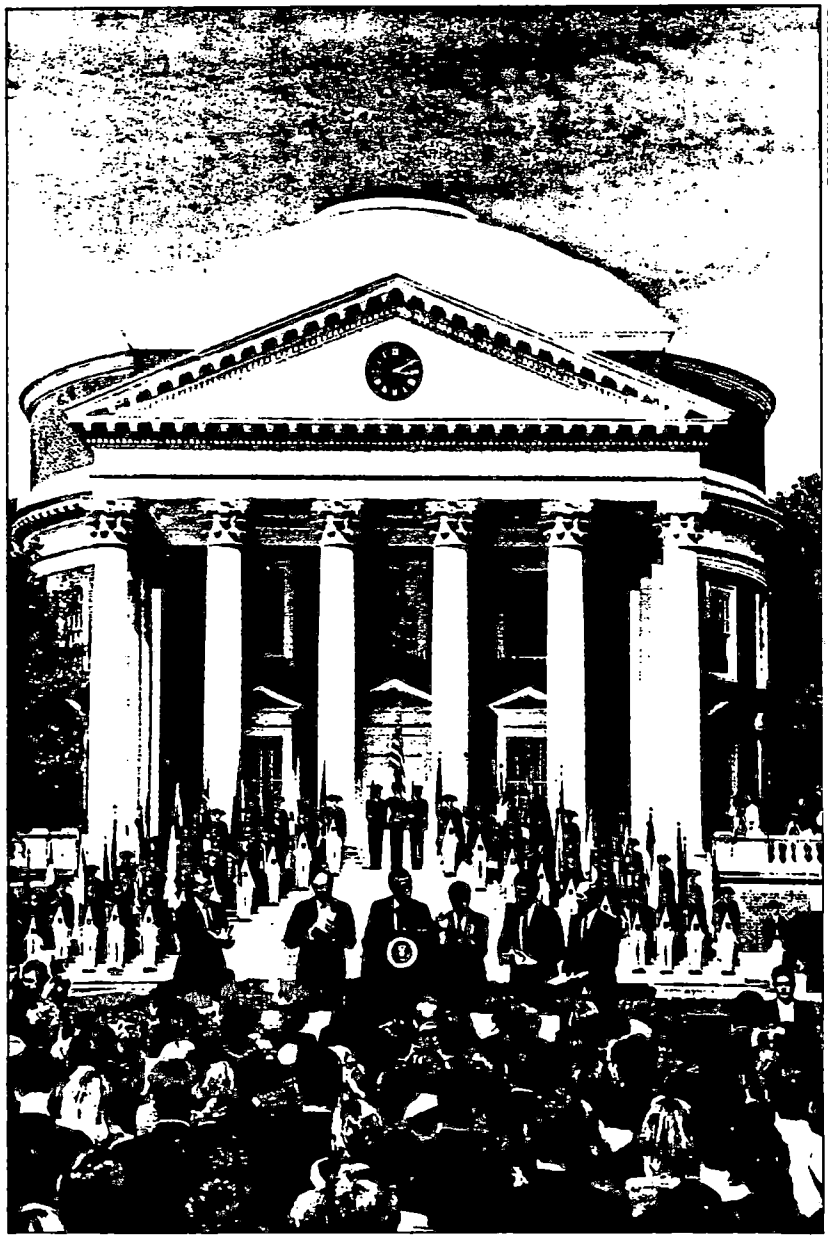
In essence, that is why we've gathered here at Mr. Jefferson's school. He was just one man, but look at what one man can do. Imagine what we can do, if we -- more than 50 strong -- are united by this great cause. So let us dream. And let us talk. And if need be, let us argue. But in the end, let us walk together on a journey to enlightenment, in the footsteps of Thomas Jefferson.

Thank you for your hard work and dedication. God bless you. And God bless the United States of America. (Applause.)

END 12:28 P.M. EDT

Judging Schools: The Focus Shifts To Results

Rather than looking at compliance with rigid government regulations, states are increasingly evaluating schools on how well students perform



DOUG MILLS/WIDE WORLD

The Summit: In Charlottesville, Va., President Bush and the nation's governors advocated annual report cards to measure the progress of students, schools, the states, and the federal government.

Spurred by political and business leaders, states and the federal government are moving rapidly toward what one leading educator calls a "paradigm shift" in the way schools are judged.

Unlike in the past, when schools were evaluated on whether they had complied with regulations governing "inputs"—such as pupil-teacher ratios, library books, and course offerings—governments are increasingly measuring school quality by how well students are performing.

President Bush and the nation's governors signaled their support for this new view at their education "summit" last fall. In a joint statement, the executives agreed to "establish clear measures of performance and then issue annual report cards on the progress of students, schools, the states, and the federal government."

But even before the summit, school accountability was an issue high on the state agendas. In fact, a majority of states can cite recent policy initiatives that try to hold schools accountable for the quality of instruction and student performance.

- In New Jersey, officials have sent parents the state's first "report card," which details how each of the state's schools performed on high school proficiency tests, elementary basic-skills tests, the Scholastic Aptitude Test, and Advanced Placement tests, as well as in student attendance and graduation rates.
- In North Carolina, lawmakers have linked some state funding to a district's ability to meet at least 75 percent of the performance goals it sets, using state-determined criteria.
- In Maryland, a governor's commission has proposed establishing an accreditation system that would evaluate schools, in part, on the basis of student performance.

Says Chris Pipho of the Education Commission of the States: "I'm hearing more legislators say, 'We've escalated money for reform; how do we know we've gotten anything for it?' "

Such activity by state policymakers, suggests Chester Finn Jr., professor of education and public policy at Vander-

bilt University, reflects a "paradigm shift" in education. In the near future, he predicts, "the enterprise of education will be defined entirely by actual learning accomplished and accounted for. Indeed, no 'education' will have taken place unless there is evidence learning occurred."

But, because schools continue to rely on what they consider to be inadequate measures of student performance—mainly standardized tests—this shift may be premature, critics warn. Until more accurate tools are in place, these critics charge, the accountability efforts could harm education by leading schools to employ the wrong policy prescriptions.

Moreover, contends Lorraine McDonnell, senior political scientist at the RAND Corporation, the drive toward accountability threatens to collide head-on with the equally strong move to restructure schools by granting authority at the building level. "A big issue," she says, "is how to devolve power down to schools and keep accountability to the larger system."

She continues: "The technical difficulties in designing [accountability] systems are significant. But these challenges pale in comparison with the philosophical and political issues accountability raises in public education: Who should be held accountable, to whom, for what? That has always been a difficult question, but school restructuring further complicates the resolution."

Those advocating more school-site autonomy, McDonnell says, contend that teachers and principals should be held accountable for their schools' performance. But, she says, state "indicator measures influence what schools do. They can act as a constraint on school-based management."

For example, she notes, a school may decide that it wants to de-emphasize science in order to focus on the arts. But if the state's accountability system includes a measure of student performance in science, the school may be unable to give up a science course if it does not want to look bad on the state measure.

But perhaps the most pressing question, suggests Susan Fuhrman, director of the Center for Policy Research in Education, is whether the states' efforts will lead to genuine improvements in student learning. States can point to "a lot of winners in all categories of schools," she says. "That's improvement. But whether that will lead to the kind of work force we want remains to be seen."

The calls for new standards of accountability reflect the growing involvement of business in education. (See page 60.) "They have become key actors in school reform in many states," notes Terry Peterson, executive director of South Carolina's joint business-education subcommittee. "As part of that, particularly if there is new money, they want to know what they are getting for their investment."

Lawmakers are saying, 'We've escalated money for reforms; how do we know we've gotten anything for it?'

Political leaders are also interested in seeing the results of large increases in education spending, suggests Marla Ucelli, education adviser to Gov. Thomas Kean of New Jersey. "The citizens of New Jersey have a right to know what we are getting," she says.

In response to such demands, more than half the states have put in place systems that link state actions—rewards or sanctions—with school performance. "A lot of states have moved on many issues, but there aren't many that have figured out how to put the pieces together in ways they are comfortable with," says Michael Cohen, associate director of education programs for the National Governors' Association. "It's easier to reach an agreement that [accountability for performance] is the direction they ought to be going than pulling it off."

The systems that have been in place so far have generally succeeded in focusing educators' attention on raising the level of student performance, suggests Peterson of South Carolina, which has one of the most extensive state accountability systems. In that state, districts that fail to meet state-established criteria on a range of indicators—including student-test scores, student and teacher attendance, dropout rates, and the proportion of teachers teaching out of their field—are listed as "seriously impaired" and must develop plans for improvement. Those that exceed state requirements and show improvement over time are eligible for public recognition, cash awards, and regulatory flexibility.

"People know about it, they think it's important, and they think it's a tool for school improvement," Peterson says of the state's accountability program. He notes that a survey of teachers and parents found that most respondents said being judged "impaired" was embarrassing to a district, but that improvements outweighed the negative stigma attached to the label.

Other education officials and researchers agree that accountability systems have motivated schools—but in the wrong direction. RAND's McDonnell offers an example. Student test scores, she notes, are a "very powerful lever" for changing instruction. Because scores and school rankings are often published in newspapers, some administrators tailor curriculum and teaching methods to raise them. But many of those changes have not necessarily been for the better, she cautions, since traditional standardized tests measure a narrow range of student abilities.

"I have certainly seen schools, many at the low end of the achievement distribution, that have really changed their behavior" in response to accountability pressures, she says. "But many have changed in ways we feel are inappropriate." □

—Robert Rothman, *Education Week*

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release July 31, 1990

JOINT STATEMENT OF THE PRESIDENT AND THE GOVERNORS

A Process for Measuring and Reporting on Progress Toward the National Education Goals

At the historic Education Summit, the President and the Nation's Governors, as elected chief executives, made a commitment to be held accountable for progress in achieving the national education goals. To fulfill this commitment, this Joint Statement establishes the process for identifying measures of performance and reporting on progress toward the goals, and reaffirms the decade-long partnership toward realizing the goals.

In order to provide the direction and support needed to instill public confidence and the full cooperation of Federal and state officials, the President and Governors agree to establish the National Education Goals Panel to oversee the development and implementation of a national education progress reporting system. The process for developing and establishing appropriate measures and reporting annually on progress will build on the constructive, bipartisan partnership between the President and the Governors initiated at the Charlottesville Summit.

National Education Goals Panel

The National Education Goals Panel will be composed of:

- Four senior-level Federal Executive Branch officials appointed by the President;
- Six Governors appointed by the Chairman of the National Governors' Association in consultation with the Vice-Chairman, with no more than three of the Governors being from the same party; and
- Four Congressional Leaders (Senate Majority and Minority Leaders, the Speaker of the House or his designee and House Minority Leader) invited to serve as ex officio non-voting members.
- The Chairman of the Panel will be appointed annually by the Chairman of the National Governors' Association.

The Executive Branch officials will serve at the pleasure of the President. Governors will be appointed to the Panel for a two-year term, except that two of the initial appointments, equally divided between the two parties, shall be for a three-year term.

The Panel will be responsible for determining the indicators used to measure the national education goals and reporting progress toward their achievement. Its responsibilities shall include:

- Selecting interim and final measures and appropriate measurement tools to be developed as necessary in each goal area;
- Determining baselines and benchmarks against which progress may be evaluated;
- Determining the format for an annual report to the Nation; and
- Reporting on the Federal government's action to fulfill those responsibilities set forth in the Federal-state partnership at Charlottesville, including funding the Federal financial role, providing more flexibility in spending under existing Federal programs, and controlling mandates that limit the states' ability to fund education, as defined in the Joint Statement issued at the Charlottesville Summit.

In addition, the Panel will review proposed changes in national and international measurement systems as appropriate and make recommendations to the President, the Congress, and the Governors for needed improvements.

The Panel will not be limited by availability of current data and measurements in its decisions. It will seek to identify fair, constructive measures that will boost the performance of students at all levels.

In making final decisions, the Panel will operate on the principle of consensus among the Governors, the Executive Branch, and the Congress. In the event that a vote must be taken, a decision will require 75 percent of the voting members.

Expert Advisers

The process for developing and establishing appropriate measures shall benefit from the experiences and expertise of the education research and measurement communities and other interested parties.

The Panel, in carrying out its responsibilities, will consult

broadly with experts in the field of research and measurement, as well as with other interested parties, in order to:

- Identify and evaluate existing indicators; and
- Prepare specific options and recommendations for the Panel concerning: the selection of appropriate indicators; baselines and benchmarks against which performance may be evaluated; and the format for an annual report.

Report to the Nation

The President and the Governors agree that beginning in 1991, the Panel will issue a report card to the Nation on the anniversary of the Education Summit (September 27-28) on progress toward the national education goals. The Governors reaffirm their commitment made in Charlottesville to report individually on restructuring efforts in their states on the first anniversary of the Education Summit.

In developing the report card, the Panel will be guided by the following principles:

- The measurements and benchmarks should be consistent with the intent of the Charlottesville Joint Statement and the comprehensive statement of national education goals adopted by the President and the Governors.
- The measurement of benchmarks should not discriminate in favor of or against any state based on its current performance or the degree of improvement needed to reach the goals. The main focus of the national report card will be measuring each state's progress toward achieving the goals based on each state's baseline.

Following the release of the annual report card, each Governor shall issue a report on progress in his or her state related to the goals.

Extending the Partnership

Although the immediate task relates to national, state, and international assessments, the President and the Governors encourage the creation of similar systems of accountability in every school in America.

The President and Governors agree to begin work immediately to fulfill the commitments made in this Joint Statement.

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THE PRESIDENT'S EDUCATION SUMMIT WITH GOVERNORS

— UNIVERSITY OF VIRGINIA

September 27 - 28, 1989

Joint Statement

The President and the nation's Governors agree that a better educated citizenry is the key to the continued growth and prosperity of the United States. Education has historically been and should remain, a state responsibility and a local function, which works best when there is also strong parental involvement in the schools. And, as a Nation we must have an educated workforce, second to none, in order to succeed in an increasingly competitive world economy.

Education has always been important, but never this important because the stakes have changed: Our competitors for opportunity are also working to educate their people. As they continue to improve, they make the future a moving target. We believe that the time has come, for the first time in U.S. history, to establish clear, national performance goals, goals that will make us internationally competitive.

The President and the nation's Governors have agreed at this summit to:

-- establish a process for setting national education goals;

-- seek greater flexibility and enhanced accountability in the use of Federal resources to meet the goals, through both regulatory and legislative changes;

-- undertake a major state-by-state effort to restructure our education system; and

-- report annually on progress in achieving our goals.

This agreement represents the first step in a long-term commitment to reorient the education system and to marshal widespread support for the needed reforms.

NATIONAL EDUCATION GOALS

The first step in restructuring our education system is to build a broad-based consensus around a defined set of national education goals. The National Governors' Association Task Force on Education will work with the President's designees to

recommend goals to the President and the Nation's Governors. The process to develop the goals will involve teachers, parents, local school administrators, school board members, elected officials, business and labor communities, and the public at large. The overriding objective is to develop an ambitious, realistic, set of performance goals that reflect the views of those with a stake in the performance of our education system. To succeed we need a common understanding and a common mission. National goals will allow us to plan effectively, to set priorities, and to establish clear lines of accountability and authority. These goals will lead to the development of detailed strategies that will allow us to meet these objectives.

The process for establishing these goals should be completed and the goals announced in early 1990.

By performance we mean goals that will, if achieved, guarantee that we are internationally competitive, such as goals related to:

-- the readiness of children to start school;

-- the performance of students on international achievement tests, especially in math and science;

-- the reduction of the dropout rate and improvement of academic performance, especially among at-risk students;

-- the functional literacy of adult Americans;

-- the level of training necessary to guarantee a competitive workforce;

-- the supply of qualified teachers and up-to-date technology; and

-- the establishment of safe, disciplined, and drug-free schools.

THE FEDERAL/STATE PARTNERSHIP

Flexibility and Accountability

The President and the Governors are committed to achieving the maximum return possible from our investment in the Nation's education system. We define maximum return as the following: significant and sustained educational improvement for all children. Nothing less will meet the Nation's needs for a strong, competitive workforce; nothing less will meet our children's needs for successful citizenship and economic opportunity.

Federal funds, which represent only a small part of total education spending, are directed particularly toward services for

young people most at risk. Federal laws and regulations control where and for whom states and localities spend this money. State and local laws and regulations control what is taught, and how, for all students.

At present, neither Federal nor State and local laws and regulations focus sufficiently on results, or on real educational improvement for all children. Federal and State executives need authority to waive statutory and regulatory provisions in return for greater accountability for results.

The President and the Governors have agreed:

-- to examine Federal regulations under current law and to move in the direction of greater flexibility;

-- to take parallel steps in each state with respect to State laws and administrative rules.

-- to submit legislation to Congress early next year that would provide State and local recipients greater flexibility in the use of Federal funds, in return for firm commitments to improved levels of education and skill training.

The President and the Governors have agreed to establish a working group of Governors and the President's designees to begin work immediately to accomplish these tasks.

We know that other voices need to be heard in this discussion -- voices of educators, parents, and those whose primary interest is the protection of the disadvantaged, minorities, and the handicapped. We need to work with the Congress. The processes we will set up immediately following this conference will involve all parties.

The urgent need for flexibility in using Federal funds can best be illustrated by a few examples.

First, the Federal Vocational Education Act, which mandates specific set-asides that often result in individual awards that are too small to be meaningful and that prohibit the money from being spent to achieve its purpose. One state reported being required to divide $300,000 in aid among far too many categories and set-asides.

Second, similarly, the Chapter 1 program requires that equipment purchased to provide remedial education services cannot be used for non-Chapter 1 institutions in areas such as adult education. Several States report that large numbers of computers purchased by Federal funds are idle at night, while adult education classes that need them either do without or use scarce tax dollars to buy other equipment.

Third, the requirements that children who benefit from Federal

funds for compensatory and special education be taught separately often undermines their achievement. Waivers that permit these students to return to regular classes and receive extra help have produced large increases in their test scores. This option should be available for all school districts.

These commitments are historic steps toward ensuring that young people with the greatest needs receive the best our schools and training programs can give them, and that all children reach their highest educational potential.

In a phrase, we want to swap red tape for results.

The Federal Government's Financial Role

State and local Governments provide more than 90 percent of education funding. They should continue to bear that lion's share of the load. The Federal financial role is limited and has even declined, but it is still important. That role is:

-- to promote National education equity by helping our poor children get off to a good start in school, giving disadvantaged and handicapped children extra help to assist them in their school years, ensuring accessibility to a college education, and preparing the workforce for jobs;

-- and second, to provide research and development for programs that work, good information on the real performance of students, schools, and states, and assistance in replicating successful state and local initiatives all across the United States;

We understand the limits imposed on new spending by the Federal deficit and the budget process. However, we urge that priority for any further funding increases be given to prepare young children to succeed in school. This is consistent with the President's recommendation for an increase in the number of children served by Head Start in this year's budget. If we are ever to develop a system that ensures that our children are healthy and succeed in school, the Federal Government will have to play a leading role.

Further, we urge that the Congress not impose new Federal mandates that are unrelated to children, but that require States to spend state tax money that could otherwise go to education.

COMMITMENT TO RESTRUCTURING

Virtually every State has substantially increased its investment in education, increased standards, and improved learning. Real gains have occurred. However, we still have a long way to go. We must make dramatic improvements in our education system. This cannot be done without a genuine, National, Bipartisan commitment to excellence and without a willingness to dramatically alter our

system of education.

The President and the Nation's Governors agree that significant steps must be taken to restructure education in all states. We share the view that simply more of the same will not achieve the results we need. We must find ways to deploy the resources we commit to education more effectively.

A similar process has been going on in American manufacturing industry over the last decade with astonishing results: An increase in productivity of nearly 4 percent a year.

There are many promising new ideas and strategies for restructuring education. These include greater choice for parents and students, greater authority and accountability for teachers and principles, alternative certification programs for teachers, and programs that systematically reward excellence and performance. Most successful restructuring efforts seem to have certain common characteristics.

-- a system of accountability that focuses on results, rather than on compliance with rules and regulations;

-- decentralization of authority and decision-making responsibility to the school site, so that educators are empowered to determine the means for achieving the goals and to be held accountable for accomplishing them;

-- a rigorous program of instruction designed to ensure that every child can acquire the knowledge and skills required in an economy in which our citizens must be able to think for a living;

-- an education system that develops first-rate teachers and creates a professional environment that provides real rewards for success with students, real consequences for failure, and the tools and flexibility required to get the job done; and

-- active, sustained parental and business community involvement.

Restructuring efforts are now underway in many states. The Nation's Governors are committed to a major restructuring effort in every state. The Governors will give this task high priority and will report on their progress in one year.

ASSURING ACCOUNTABILITY

As elected chief executives, we expect to be held accountable for progress in meeting the new National goals and we expect to hold other accountable as well.

When goals are set and strategies for achieving them are adopted,

we must establish clear measures of performance and then issue annual Report Cards on the progress of students, schools, the states, and the Federal Government.

Over the last few days we have humbly walked in the footsteps of Thomas Jefferson. We have started down a promising path. We have entered into a compact -- a Jeffersonian compact to enlighten our children and the children of generations to come.

The time for rhetoric is past; the time for performance is now.

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THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release February 26, 1990

NATIONAL GOALS FOR EDUCATION

INTRODUCTION

At the historic education summit in Charlottesville five months ago, the President and the Governors declared that "the time has come, for the first time in U.S. history, to establish clear national performance goals, goals that will make us internationally competitive." The six national education goals contained here are the first step in carrying out that commitment.

America's educational performance must be second to none in the 21st century. Education is central to our quality of life. It is at the heart of our economic strength and security, our creativity in the arts and letters, our invention in the sciences, and the perpetuation of our cultural values. Education is the key to America's international competitiveness.

Today, a new standard for an educated citizenry is required, one suitable for the next century. Our people must be as knowledgeable, as well-trained, as competent, and as inventive as those in any other nation. All of our people, not just a few, must be able to think for a living, adapt to changing environments, and to understand the world around them. They must understand and accept the responsibilities and obligations of citizenship. They must continually learn and develop new skills throughout their lives.

America can meet this challenge if our society is dedicated to a renaissance in education. We must become a nation that values education and learning. We must recognize that every child can learn, regardless of background or disability. We must recognize that education is a lifelong pursuit, not just an endeavor for our children.

Sweeping, fundamental changes in our education system must be made. Educators must be given greater flexibility to devise challenging and inspiring strategies to serve the needs of a diverse body of students. This is especially important for students who are at risk of academic failure -- for the failure of these students will become the failure of our nation. Achieving these changes depends in large part on the commitment of professional educators. Their daily work must be dedicated to creating a new educational order in which success for all students is the first priority, and they must be held accountable for the results.

This is not the responsibility of educators alone, however. All Americans have an important stake in the success of our education system, and every part of our society must be involved in meeting that challenge. Parents must be more interested and involved in their children's education, and students must accept the challenge of higher expectations for achievement and greater responsibility for their future. In addition, communities, business and civic groups,

and state, local, and federal government each has a vital role to play throughout this decade to ensure our success.

The first step is to establish ambitious national education goals — performance goals that must be achieved if the United States is to remain competitive in the world marketplace and our citizens are to reach their fullest potential. These goals are about excellence. Meeting them will require that the performance of our highest achievers be boosted to levels that equal or exceed the performance of the best students anywhere. The performance of our lowest achievers must be substantially increased far beyond their current performance. What our best students can achieve now, our average students must be able to achieve by the turn of the century. We must work to ensure that a significant number of students from all races, ethnic groups, and income levels are among our top performers.

If the United States is to maintain a strong and responsible democracy and a prosperous and growing economy into the next century, all of our citizens must be involved in achieving these goals. Every citizen will benefit as a result. When challenged, the American people have always shown their determination to succeed. The challenge before us calls on each American to help ensure our nation's future.

NATIONAL EDUCATION GOALS

Readiness for School

GOAL 1: By the year 2000, all children in America will start school ready to learn.

Objectives:

- All disadvantaged and disabled children will have access to high quality and developmentally appropriate preschool programs that help prepare children for school.
- Every parent in America will be a child's first teacher and devote time each day helping his or her preschool child learn; parents will have access to the training and support they need.
- Children will receive the nutrition and health care needed to arrive at school with healthy minds and bodies, and the number of low birthweight babies will be significantly reduced through enhanced prenatal health systems.

High School Completion

GOAL 2: By the year 2000, the high school graduation rate will increase to at least 90 percent.

Objectives:

- The nation must dramatically reduce its dropout rate and seventy-five percent of those students who do drop out will successfully complete a high school degree or its equivalent.
- The gap in high school graduation rates between American students from minority backgrounds and their non-minority counterparts will be eliminated.

Student Achievement and Citizenship

GOAL 3: By the year 2000, American students will leave grades four, eight and twelve having demonstrated competency in challenging subject matter including English, mathematics, science, history, and geography; and every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning, and productive employment in our modern economy.

Objectives:

- The academic performance of elementary and secondary students will increase significantly in every quartile, and the distribution of minority students in each level will more closely reflect the student population as a whole.
- The percentage of students who demonstrate the ability to reason, solve problems, apply knowledge, and write and communicate effectively will increase substantially.
- All students will be involved in activities that promote and demonstrate good citizenship, community service, and personal responsibility.
- The percentage of students who are competent in more than one language will substantially increase.
- All students will be knowledgeable about the diverse cultural heritage of this nation and about the world community.

Science and Mathematics

GOAL 4: By the year 2000, U.S. students will be first in the world in science and mathematics achievement.

Objectives:

- Math and science education will be strengthened throughout the system, especially in the early grades.
- The number of teachers with a substantive background in mathematics and science will increase by 50 percent.
- The number of U.S. undergraduate and graduate students, especially women and minorities, who complete degrees in mathematics, science, and engineering will increase significantly.

Adult Literacy and Lifelong Learning

GOAL 5: By the year 2000, every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship.

Objectives:

- Every major American business will be involved in strengthening the connection between education and work.
- All workers will have the opportunity to acquire the knowledge and skills, from basic to highly technical, needed to adapt to emerging new technologies, work methods, and markets through public and private educational, vocational, technical, workplace, or other programs.
- The number of quality programs, including those at libraries, that are designed to serve more effectively the needs of the growing number of part-time and mid-career students will increase substantially.
- The proportion of those qualified students, especially minorities, who enter college; who complete at least two years; and who complete their degree programs will increase substantially.
- The proportion of college graduates who demonstrate an advanced ability to think critically, communicate effectively, and solve problems will increase substantially.

Safe, Disciplined, and Drug-Free Schools

GOAL 6: **By the year 2000, every school in America will be free of drugs and violence and will offer a disciplined environment conducive to learning.**

Objectives:

- Every school will implement a firm and fair policy on use, possession, and distribution of drugs and alcohol.
- Parents, businesses, and community organizations will work together to ensure that schools are a safe haven for all children.
- Every school district will develop a comprehensive K-12 drug and alcohol prevention education program. Drug and alcohol curriculum should be taught as an integral part of health education. In addition, community-based teams should be organized to provide students and teachers with needed support.

NECESSARY CHANGES AND RESTRUCTURING

These goals are ambitious, yet they can and must be achieved. However, they cannot be achieved by our education system as it is presently constituted. Substantial, even radical changes will have to be made.

Without a strong commitment and concerted effort on the part of every sector and every citizen to improve dramatically the performance of the nation's education system and each and every student, these goals will remain nothing more than a distant, unattainable vision. For their part, Governors will work within their own states to develop strategies for restructuring their education systems in order to achieve the goals. Because states differ from one another, each state will approach this in a different manner. The President and the Governors will work to support these state efforts, and to recommend steps that the federal government, business, and community groups should take to help achieve these national goals. The nature of many of these steps is already clear.

The Preschool Years

American homes must be places of learning. Parents should play an active role in their children's early learning, particularly by reading to them on a daily basis. Parents should have access to the support and training required to fulfill this role, especially in poor, under-educated families.

In preparing young people to start school, both the federal and state governments have important roles to play, especially with regard to health, nutrition, and early childhood development. Congress and the administration have increased maternal and child health coverage for all families with incomes up to 133 percent of the federal poverty line. Many states go beyond this level of coverage, and more are moving in this direction. In addition, states continue to develop more effective delivery systems for prenatal and postnatal care. However, we still need more prevention, testing, and screening, and early identification and treatment of learning disorders and disabilities.

The federal government should work with the states to develop and fully fund early intervention strategies for children. All eligible children should have access to Head Start, Chapter 1, or some other successful preschool program with strong parental involvement. Our first priority must be to provide at least one year of preschool for all disadvantaged children.

The School Years

As steps are taken to better prepare children for schools, we must also better prepare schools for children.

This is especially important for young children. Schools must be able to educate effectively all children when they arrive at the schoolhouse door, regardless of variations in students' interest, capacities, or learning styles.

Next, our public education system must be fundamentally restructured in order to ensure that all students can meet higher standards. This means reorienting schools so they focus on results, not on procedures; giving each school's principal and teachers the discretion to make more decisions and the flexibility to use federal, state, and local resources in more productive, innovative ways that improve learning; providing a way for gifted professionals who want to teach to do so through alternative certification avenues, and giving parents more responsibility for their children's education through magnet schools, public school choice, and other strategies. Most important, restructuring requires creating powerful incentives for performance and improvement, and real consequences for persistent failure. It is only by maintaining this balance of flexibility and accountability that we can truly improve our schools.

The federal government must sustain its vital role of promoting educational equity by ensuring access to quality educational programs for all students regardless of race, national origin, sex, or handicapping condition. Federal funds should target those students most in need of assistance due to economic disadvantage or risk of academic failure.

Finally, efforts to restructure education must work toward guaranteeing that all students are engaged in rigorous programs of instruction designed to ensure that every child, regardless of background or disability, acquires the knowledge and skills necessary to succeed in a changing economy. In recent years, there has been an increased commitment to mathematics and science improvement programs. The federal government should continue to enhance financial assistance to state and local governments for effective programs in these areas. Likewise, there has been a greater federal emphasis on programs that target youth at risk of school failure and dropping out. The federal government should continue to enhance funding and seek strategies to help states in their efforts to seek solutions to these problems.

Improving elementary and secondary student achievement will not require a national curriculum, but it will require that the nation invest in developing the skills and knowledge of our educators and equipping our schools with up-to-date technology. The quality of teachers and teaching is essential to meeting our goals. We must have well-prepared teachers and we must increase the number of qualified teachers in critical shortage areas, including rural and urban schools, specialized fields such as foreign languages, mathematics and science, and from minority groups. Policies must attract and keep able teachers who reflect the cultural diversity of our nation. Policies that shape how our educators are prepared, certified, rewarded, developed and supported on the job must be consistent with efforts to restructure the education system and ensure that every school is capable of teaching all of our children to think and reason. Teachers and other school leaders must not only be outstanding, the schools in which they work must also be restructured to utilize both professional talent and technology to improve student learning and teacher- and system-productivity.

The After-School Years

Comprehensive, well-integrated lifelong learning opportunities must be created for a world in which three of four new jobs will require more than a high school education; workers with only high school diplomas may face the prospect of declining incomes; and most workers will

change their jobs ten or eleven times over their lifetime.

In most states, the present system for delivering adult literacy services is fractured and inadequate. Because the United States has far higher rates of adult functional illiteracy than other advanced countries, a first step is to establish in each state a public-private partnership to create a functionally literate workforce.

In some other countries, government policies and programs are carefully coordinated with private sector activities to create effective apprenticeship and job training activities. By contrast, the United States has a multilayered system of vocational and technical schools, community colleges, and specific training programs funded from multiple sources and subject to little coordination. These institutions need to be restructured so they fit together more sensibly and effectively to give all adults access to flexible and comprehensive programs that meet their needs. Every major business must work to provide appropriate training and educational opportunities to prepare employees for the twenty-first century.

Finally, a larger share of our population, especially those from working class, poor, and minority backgrounds, must be helped to attend and remain in college. The cost of a college education, as a percentage of median family income, has approximately tripled in a generation. That means more loans, scholarships, and work-study opportunities are needed. The federal government's role in ensuring access for qualified students is critical. At the same time, the higher education system must use existing resources far more productively than it does at present, and must be held more accountable for what students do or do not learn. The federal government will continue to examine ways to reduce students' increasing debt burden and to address the proper balance between grant and loan programs.

ASSESSMENT

National education goals will be meaningless unless progress toward meeting them is measured accurately and adequately, and reported to the American people. Doing a good job of assessment and reporting requires the resolution of three issues.

First, what students need to know must be defined. In some cases, there is a solid foundation on which to build. For example, the National Council on Teachers of Mathematics and the Mathematical Sciences Education Board have done important work in defining what all students must know and be able to do in order to be mathematically competent. A major effort for science has been initiated by the American Association for the Advancement of Science. These efforts must be expanded and extended to other subject areas.

Second, when it is clear what students need to know, it must be determined whether they know it. There have been a number of important efforts to improve our ability to measure student learning at the state and national levels. This year for the first time, the National Assessment for Education Progress (NAEP) will collect data on student performance on a state-by-state basis for thirty-seven states. Work is underway to develop a national assessment of adult literacy. These and other efforts must be supported and strengthened.

The Governors urge the National Assessment Governing Board to begin work to set national performance goals in the subject areas in which NAEP will be administered. This does not mean establishing standards for individual competence; rather, it requires determining how to set targets for increases in the percentage of students performing at the higher levels of the NAEP scales.

Third, measurements must be accurate, comparable, appropriate, and constructive. Placement decisions for young children should not be made on the basis of standardized tests. Achievement tests must not simply measure minimum competencies, but also higher levels of reading, writing, speaking, reasoning, and problem-solving skills. And in comparing America's achievement with that of other countries, it is essential that international comparisons are reliable. In addition, appropriate, nationally-directed research, demonstration, data collection, and innovation should be maintained and recognized as a set of core responsibilities of the federal government in education. That role needs to be strengthened in cooperation with the states.

The President and the Governors agree that while we do not need a new data-gathering agency, we do need a bipartisan group to oversee the process of determining and developing appropriate measurements and reporting on the progress toward meeting the goals. This process should stay in existence until at least the year 2000 so that we assure ten full years of effort toward meeting the goals.

A Challenge

These national education goals are not the President's goals or the Governors' goals; they are the nation's goals.

These education goals are the beginning, not the end, of the process. Governors are committed to working within their own states to review state education goals and performance levels in light of these national goals. States are encouraged to adjust state goals according to this review, and to expand upon national goals where appropriate. The President and the Governors challenge every family, school, school district, and community to adopt these national goals as their own, and establish other goals that reflect the particular circumstances and challenges they face as America approaches the twenty-first century.

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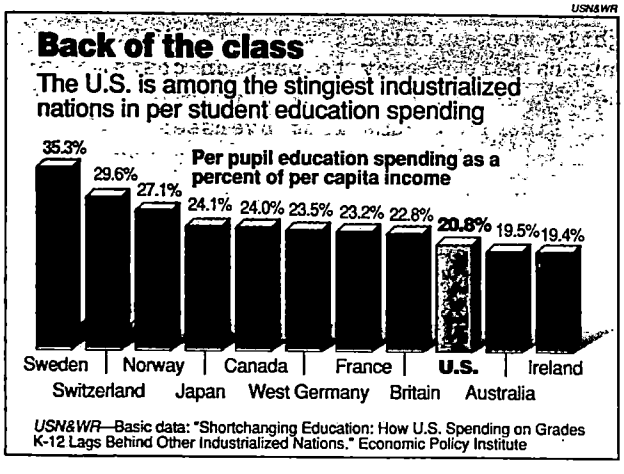
The President's worst subject

EDUCATION ■ He showed lots of promise, but for a variety of reasons he's failing in the classroom

During his run for the White House, candidate George Bush frequently pledged that if elected he would become the nation's "education President." But as the midpoint of his Presidency approaches, he's showing himself to be virtually all promise and no performance in addressing the problems of the nation's schools. So far, the Bush administration's record on education has been largely one of superficial rhetoric, half-hearted initiatives and a devastating deficiency of leadership at the U.S. Department of Education. "Pretty soon, it's going to be 1992," says one administration official, "and I don't know what the President is going to run on."



Despite his claim to the title of "education President," Bush was short on specifics—and especially on new ideas—from the start. He promised to boost funding for a few existing and politically popular programs, and he pledged to push a set of reforms already popular among state policymakers: Alternative teacher certification, for instance, and parental choice.

Retreat on funding. But as President, Bush has failed to fulfill even those modest pledges—in part because he has been willing to spend less than what even he estimated would be needed for reform. Last year, the administration drafted a $218 million "educational-excellence act" to pay for such things as cash awards for top teachers and "merit schools," a magnet-school program to promote parental choice, and aid to black colleges; on the campaign trail, Bush had promised $500 million for merit schools alone. And when the House of Representatives earlier this month passed a bipartisan $1 billion education bill that included parts of Bush's package, the administration opposed the legislation as too expensive, a move that dismayed even the President's Republican allies in the House.

For 1991, the Bush administration is proposing a decrease in inflation-adjusted spending on education. In keeping with candidate Bush's pledge to make Head Start available to all who qualify, the new budget would boost Head Start spending by $500 million. But in sharp contrast with the campaign promise, even with that increase the program would not be able to serve 1.8 million children—nearly three fourths of those who are eligible.

The administration defends its lean budgets by pointing to the federal deficit and arguing that U.S. schools and colleges are already heavily funded. "We've got to shift the debate from resources to results," says Roger Porter, Bush's chief domestic-policy adviser. But a study released earlier this year by the Economic Policy Institute (EPI), a Washington, D.C., think tank, casts doubt on the administration's key claim that the United States outspends Japan, Germany and its other economic competitors on education. The administration lumps together higher education and precollege spending. But EPI's study separates the two; in income-based per pupil spending at the elementary and secondary-school level, the United States ranks 14th among 16 industrialized nations.

Even centrist reformers like California school Superintendent Bill Honig argue that the administration's stance on funding is dead wrong. "The issue should not be reforms vs. more money, as if spending more money is a reform strategy or as if initiating high-payoff reforms can be done for free," says Honig, who urges a $10 billion infusion of federal funding in such areas as teacher training and educational technology. "They've got to get off this argument that money doesn't count. Money well targeted is crucial."

One cheer. *Education Secretary Lauro Cavazos,*

Since constitutional authority for schooling rests with the states, the federal government has always had a limited role to play. But Presidents from Lyndon Johnson to Ronald Reagan have successfully used the federal "bully pulpit" to press for improvements in the nation's schools and colleges. As a candidate, Bush pledged to do the same, and his advisers tout last fall's Charlottesville, Va., school summit with the nation's governors and the announcement of national educational goals in January's state-of-the-union address as evidence of his making good on his pledge.

But critics saw the summit, long on atmospherics and short on substance, as largely a presidential photo opportunity. Discussions, said former U.S. Education Secretary William Bennett at the time, were marked by partisan "pap." And the six national goals enunciated in the state-

DARRYL HEIKES—USN&WR

a holdover from the Reagan administration, applauds President Bush

of-the-union address were a mix of apple pie ("By the year 2000, all children in America will start school ready to learn") and, unless things change drastically, pie in the sky ("By the year 2000, U.S. students will be first in the world in science and mathematics achievement").

Active governors. The nation's governors are scheduled to lend more meaning to the goals by approving an ambitious education-improvement blueprint at their annual meeting in Mobile, Ala., this week, a development the President rightly can say he helped inspire. The proposals in the governors' plan range from expanding prenatal care by simplifying medicaid eligibility requirements to permitting public providers other than traditional school systems to operate schools. But since the state-of-the-union address, Bush's own increasingly bland and repetitive remarks on education have attracted virtually no attention.

Most damning for Bush is his failure to name a strong Secretary of Education. Lauro Cavazos, 63, the former president of Texas Tech University, was initially appointed by Ronald Reagan in August, 1988, largely so that his Hispanic heritage and Texas roots might help the Bush campaign in the state. From the beginning, the mild-mannered Cavazos has emphasized platitudes over leadership. At a press conference earlier this year, for instance, he called for the "restructuring" of the nation's schools. Just what did he mean by restructuring? Cavazos' reply: "Those strategies that you have to bring about in the operation of schools in order to improve the schools."

Cavazos has been far less effective in raising the public debate on education than Bennett, his abrasive but idea-oriented predecessor. "We had our problems with Bill Bennett," says a senior Democratic Senate education adviser, "but there's no denying that he got a lot of ideas into circulation." A master of the bully pulpit, Bennett also penned a series of provocative reports on topics ranging from elementary schools to curriculum during his tenure. Cavazos is "friendlier with the education establishment than Bennett," says an administration source who knows Cavazos well, "but he can't get anyone to do anything. He lectures, then there's no follow-up."

Cavazos' management of the Department of Education has been chaotic as well. Staffers at the department's headquarters describe the Education Secretary as "detached" and "not fully engaged." "Decision memos frequently sit in his office for weeks, some never to be resolved," says one official. Department sources say Cavazos takes leave frequently and regularly works short days, arriving between 8:30 and 9 a.m. and departing

Student deadbeats: The next crisis?

Among its many other problems, the Department of Education is spending billions of dollars a year in scarce resources to reimburse banks for unpaid student loans. The tremendous volume of loan defaults has raised the specter of banks refusing to make federally sponsored loans to college students—a move that would severely erode educational opportunity.

Last year, it cost the department nearly $2 billion to cover unpaid loans under its various student-loan programs—a whopping increase of 338 percent since 1983. Two weeks ago, the department announced that delinquent loans had forced one of the largest of the 55 agencies that guarantee student loans into "serious" financial straits. The Higher Education Assistance Foundation, a Kansas-based agency that has $9.6 billion in outstanding loan guarantees on its books, has sought the department's approval to merge with a smaller Nebraska-based agency on stronger financial footing.

Under the federal financial-aid system, private banks make college loans that are insured by one of the 55 guaranteeing agencies. The federal government in turn reinsures the agencies against loan defaults. Financial failure among the guarantors may make already nervous banks less willing to make student loans, experts say.

The department drafted a plan in 1989 to crack down on schools and colleges with the highest student-default rates. While it is too early to measure its full impact, Department of Education Inspector General James Thomas, Jr., wrote in a recent letter to Education Secretary Lauro Cavazos: "We continue to be concerned that serious systemic weaknesses in federal student-aid programs facilitate continued bleeding of hundreds of millions of dollars through abuses by program participants." And this month, the Bush administration raised its fiscal 1990 loan-default estimate by $300 million. Says Edward Elmendorf, assistant secretary for higher education in the Reagan administration: "There's still a lot of slack to be taken out of the program."

at his "target-departure time" of 4:45 p.m. In sharp contrast with the hard-charging Bennett, Cavazos has exhibited no overarching agenda for the department. "He never takes a strong enough role to get initiatives off the ground," says a department official. As an example, a departmental math-and-science initiative has languished for months without action. Says Jeanne Allen, an education specialist at the Washington-based Heritage Foundation: "There are talented staff at the department, but they aren't getting any marching orders." Indeed, Cavazos' performance has left many Education Department officials deeply frustrated. In a recent interview with *U.S. News,* Cavazos responded to his critics by saying his office "is setting the pace and direction for education in the U.S. in a strong, forceful and responsible way."

Cabinet choices. There is no shortage of suggested replacements for Cavazos. Former Tennessee Governor Lamar Alexander, now president of the University of Tennessee, and former New Jersey Governor Thomas Kean, now president of Drew University, top the list. Yet Cavazos remains a bad mark on the "education President's" record. But as the nation's first Hispanic cabinet member, Cavazos cannot be fired easily. Sacking him, an administration official acknowledges, "would create a serious political problem for the White House."

There are a few bright spots in the Bush cabinet, especially at the Department of Labor, where Secretary Elizabeth Dole has launched several initiatives to strengthen school-to-work transitions, and at the Department of Energy, where Secretary James Watkins has cut through the federal bureaucracy to mobilize the department's laboratories at Oak Ridge, Los Alamos and elsewhere to help tackle the nation's math-and-science crisis. Marc Tucker, president of the National Center on Education and the Economy, based in Rochester, N.Y., argues that the initiatives by Watkins and Dole "prove that the White House could do far more to mobilize the resources of the federal government" on behalf of education. "The Department of Defense in peacetime is essentially a training organization," he says. "Imagine if some fair fraction of its resources were deployed against the educational problems of the inner cities. The administration is suffering a failure of imagination."

Unless President Bush's leadership on education becomes bolder as well as more imaginative, it's unlikely that his "education President" slogan will be nearly as useful to him in his next election as it was in the last. ■

by Thomas Toch
with Kenneth T. Walsh and Ted Slafsky

PUTTING THEORY TO THE TEST

CHELSEA SCHOOL SYSTEM

Best program to improve curricula

Boston University's agreement to oversee the run-down, dropout-plagued public schools of Chelsea, Mass., for the next 10 years marks the first time a private institution has subjected its educational theories to so rigorous a test. "Instead of talking about the problem, Boston University is *doing* something," said one of nearly 200 educators who cited the university's venture as exemplary. Already B.U. has boosted teacher salaries by 26 percent, written a new curriculum and wired Chelsea's five schools for computers. The university also plans to establish health-care programs for Chelsea's many immigrant and minority families, provide mentors for children of single-parent homes and create adult-literacy centers. The Copernican Plan, offering students at Masconomet High School in Topsfield, Mass., double-length classes and interdisciplinary seminars, was commended by respondents, as well.

BIG BUSINESS GOES TO SCHOOL

COLLEGE BOUND

Best program to motivate students

Educators overwhelmingly commended the General Electric Foundation's College Bound program, designed to boost the number of students who attend college from struggling inner-city schools over the next 10 years. The $20 million program adopts selected schools, providing local GE employes as mentors and awarding grants of $250,000 to $1 million for tutoring and other programs.

HIGH-PRESTIGE SERVICE

TEACH FOR AMERICA

Best idea to improve teaching

Taking her cue from the Peace Corps, Princeton grad Wendy Kopp has created a fresh, new source of sorely needed teaching talent. Her Teach for America program recruits students at the nation's top 100 colleges for two-year paid stints in inner-city and rural public schools. So far, Kopp, 23, has attracted 2,500 applicants and more than $1 million in private donations. The first 515 recruits will enter classrooms this fall. Educators in our survey also hailed RJR Nabisco's $30 million Next Century Schools Fund for rewarding risk-taking schools like San Diego's heavily Asian Linda Vista elementary, which will teach morning classes in pupils' native languages and afternoon classes by grade. Likewise, they applauded Baltimore's Science/Math Enrichment Program, in which retired scientists and engineers lead seminars and tutor students.

A Private Public School

A profitable education in South Miami Beach

Dade County's South Miami Beach is known for its pastel art deco cafés, nightclubs and hotels. But behind the gaudy beachfront buildings are tattered apartment complexes that house some of the county's poorest residents, many of whom are recent Hispanic immigrants. It is a world away from suburban Minneapolis-St. Paul, where Education Alternatives Inc. (EAI), a for-profit company, runs a successful private school. Last spring EAI chairman John Golle proposed testing his company's methods in the public sector, and Dade County officials agreed to let him try in a soon-to-be-built elementary school in Miami Beach. "We want to see whether using a successful private-school model with typical urban-school-district kids will get the same results," says Dade associate superintendent Frank Petruzielo.

When South Pointe opens next September, it will be the first public school in the nation to be operated by a private company. Last June the Board of Education signed a five-year contract with Golle to design South Pointe's classrooms and curriculum, and train the Dade County teachers and administrators who will work at the school. Now, South Pointe's newly appointed principal and lead teacher have begun shuttling to the Minneapolis private school to immerse themselves in the EAI way. "It's not voodoo and it's not trendy," says Golle, who founded the Minneapolis school in 1987 and a second in Paradise Valley, Ariz., in 1988. "These ideas have been around as long as 50 years."

PAUL SHAMBROOM

Bad knees: *Mary Beth Eiter usually teaches at kid level at EAI's Minnesota school*

Personal plan: The ideas were actually first gathered by the education subsidiary of the Control Data Corp. When CDC ran into hard times in 1986, Golle, a corporate consultant, acquired CDC's research and started EAI. Everything in the program revolves around a "personal education plan" that teachers draw up before the school year begins, after consulting parents. Students work at their own pace, either alone, at a computer terminal, in small groups, or with the teacher to achieve the goals set in their plan. The classroom itself is a large open area, with room to sprawl and crawl, and the teachers generally can be found on the floor, too. There are no grades, and few tests. Students progress at 1.80 grade levels a year according to standardized tests.

South Pointe will operate like a "privatized" public school. Teachers will start the year earlier and work longer hours in order to meet with parents. Students of all abilities—from the gifted to the learning impaired—will be taught in the same class instead of tracked according to their skill level. (South Pointe's 550 students will be drawn from two overcrowded Miami Beach schools that are 88 percent Hispanic, 10 percent black and 2 percent white; about 95 percent of the kids come from families that qualify for public assistance.) The school will be divided into four communities of 125 to 150 students. The students and teachers will stay together until the children graduate.

South Pointe will get the $1,145,886 budget, slightly more than similar Dade elementary schools. But to buy the extra computers and hire the staff necessary to have a 12-to-1 student ratio, Golle has pledged to raise about $450,000 each year from private funding. EAI's $240,000 annual fee will come out of that money, too. Golle makes no apologies; he's a businessman and not an educator. If his school works, parents won't begrudge him the money, but where will officials get the money to take the project districtwide?

CONNIE LESLIE *with* TODD BARRETT *in Eagan, Minn.*

We'll Do Better or We'll Quit. Honest We Will

Politicians might find this idea disturbing. In an attempt to rally support for a $19.5 million levy on the ballot Nov. 6, the St. Paul, Minn., school board has promised that if the money doesn't improve the city's schools, the members won't run again. That's right—as part of a 7-point program, if reading scores don't rise 20 percent by 1995, the school board is gone. If the dropout rate doesn't fall 25 percent, the school board retires. "This may even become fashionable," says board chair Margo Fox. "Accountability" is the buzzword in education circles. "We realized that it's no longer all right to say, 'Trust us—give us the money and we'll do better,'" says Fox. St. Paul already spends $350 more per pupil than the state average, but supporters of the new tax say the district still needs more teachers. Basic-skills scores have risen 14 percent over five years but the dropout rate is edging up.

A dip in performance quality can be costly. Minnesota is an open-enrollment state, so students can cross district lines to attend school—and take their state support with them.

Even with the board's declaration, the vote will likely be close. Tax increases in a sour economy are a hard sell. And only about 20 percent of St. Paul households have children in the public schools. But the pledge is winning attention. Now if only Congress would do the same.

MEDICINE

Vital Aid for Preemies

FDA approval for a drug that saves babies' lives

The birth of their twin sons two years ago should have been a happy time for Debra and Erik Randich of Manteca, Calif. But the boys, Brian and Brett, were born 13 weeks early, and their first two months of life were an agonizing struggle against the odds. Brian weighed just two pounds at birth, and Brett was an ounce less. Both were immediately hooked up to machines to help them breathe. Brian's condition stabilized, but Brett was still very sick. "He just kept going up and down," his mother recalls. After a few hours, Brett was given an experimental drug called Exosurf to help with his breathing problems. Shortly afterward, "Brett seemed to level off," his mother says. "He was holding steady."

Now thousands more babies will get that lifesaving boost. Last week, after five [illegible] of clinical trials, the Food and Drug [illegible]inistration approved the sale of Exosurf, manufactured by Burroughs Wellcome Co. Neonatologists are hailing the drug as a major advance in the treatment of very premature babies—those born between the 24th and 32nd weeks of gestation who weigh less than two pounds. (A full-term pregnancy is 40 weeks.) They say the drug could save the lives of half the 5,000 preemies who die every year because their lungs are unable to produce a lubricant called surfactant. This mucouslike substance, which is produced in the lungs of most babies by the time they are 32 weeks old, coats the inner lining of the lung and prevents the airspaces from collapsing. Without it, babies can't breathe.

LISA SEDARIS

Lifesaver: *An Exosurf-treated infant gets help*

Exosurf is a synthetic surfactant. When mixed with sterile water, it becomes a white, foamy liquid which is then dripped directly into the windpipe of premature infants through a tube in their mouths. Although response to the drug varies, at least half of the babies treated show marked improvement in breathing within hours. Dr. Mary Ellen Avery of Harvard Medical School, an expert on lung disease in preemies, says the maximum number of doses is usually four, given every 12 hours. After that time, babies' lungs usually kick in and make their own surfactant. Some babies need only one dose to start breathing normally.

Lower bills: Exosurf will save money as well as lives, says Dr. Roderic Phibbs of the University of California, San Francisco. Medical bills for the very smallest infants can be astronomical—more than $1,500 a day. Babies who need treatment with Exosurf are connected to breathing machines, called ventilators, as soon as they are born. Without Exosurf, babies could be hooked up to expensive ventilators for weeks. With the drug, which costs $450 a dose, they can breathe on their own much sooner.

For parents of preemies, of course, the cost is a secondary issue. Debra Randich's son Brett is now a healthy 26-month-old boy. "If he hadn't received the drug and turned around," she says, "I don't know if he would be alive today."

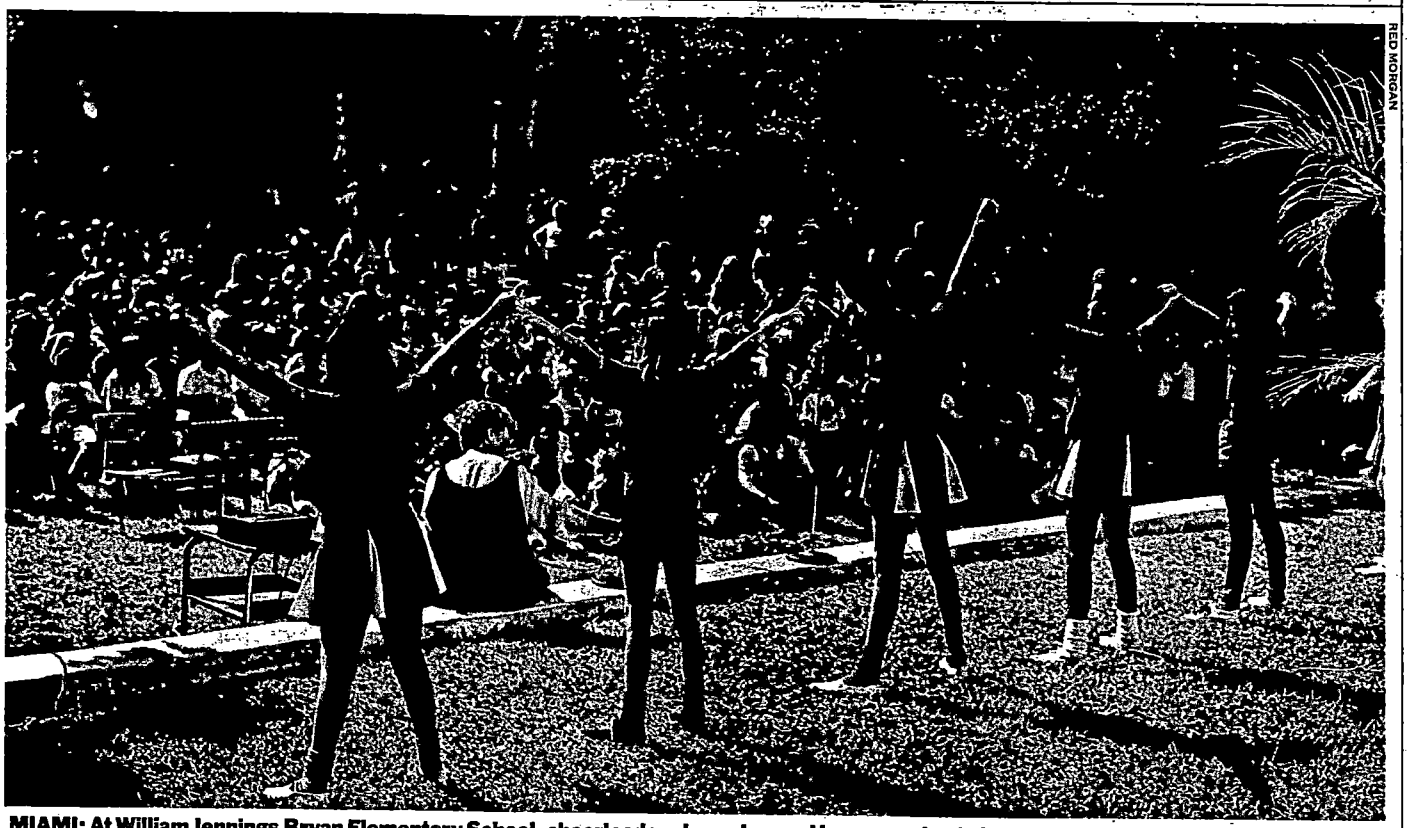
BARBARA KANTROWITZ *with* REBECCA CRANDALL

EDUCATION

The Arrival of 'Free Market' Schools

Consider: the nation's public schools are such a mess that the current system should be scrapped in favor of a "free market" scheme in which schools compete for students. Under such a scheme, public and private schools would be combined into a single pool. States would provide tax-funded "scholarships" or vouchers for students to pay tuition set individually by the schools. If this sounds like a [illegible]nservative plot hatched by [illegible]e Reagan right, think again. Two months ago scholars from the Brookings Institution, the liberal think tank, released their own report advocating a free-market school system. And last week a circuit court in Wisconsin upheld the legality of using such a program. "We now have a formula to free the hostages," says state legislator Polly Williams, referring to students in Milwaukee's troubled inner city. Last spring she helped push through the bill establishing a one-year pilot program that would pay for 1,000 low-income students in Milwaukee to attend private, nonsectarian schools. The court ruled that the program is legal because the Wisconsin constitution doesn't expressly require that public expenditures go solely for public purposes.

Wisconsin is the first state to actually legislate a free-market plan aimed at turning around failing schools. Several other states have "choice" plans that allow parents to choose among public schools, but so far none is considering expanding the selection to include private schools. Teachers' unions, meanwhile, abhor free-market plans. They fear that money will be drained from public education—each student who transfers to a private school would take along $2,500 in state money—and that the kids with the most problems will remain in the public schools. "The idea that shopping for schools will somehow lead to the rise of better schools is a real leap of faith," says Gary Timmons, a spokesman for the National Education Association. Three teachers' unions have vowed to appeal the court decision before the plan takes effect this fall. In the meantime, 300 parents and 10 private schools have applied to participate in the program.



RED MORGAN

MIAMI: At William Jennings Bryan Elementary School, cheerleaders leap skyward in a campaign to improve students' self-image.

Power to the Classroom!

Self-managed schools are all the rage, but so far the reviews are mixed

By SUSAN TIFFT

Joseph Fernandez, who has just completed his first semester as New York City's schools chancellor, is often compared with Mikhail Gorbachev. Like the Soviet President, Fernandez is using a combination of personal charm and high-handedness to reform a system nearly paralyzed by its own plethoric bureaucracy. Fernandez's brand of *perestroika* is called "school-based management," a system that allows those closest to the classroom to oversee budgets and set curriculums largely free of centralized control. "The idea is to give schools more latitude," says the chancellor, "because generally they will make better decisions than we will."

Having pushed that approach in Miami, where he was Dade County school superintendent for almost three years, Fernandez is trying to apply it to the nation's largest school system. Whether or not it works in New York, school-based management is gathering momentum across the U.S. School districts in 27 states have experimented with it, with varying degrees of success, over the past five years. Since 1987 the schools in Rochester have been run by a team of teachers, parents and administrators. Beginning last fall, locally elected councils—composed of six parents, two community residents, two teachers and the principal—have been in charge of each of Chicago's 541 public schools.

Supporters of school-based management claim that it lifts teacher morale and makes schools more flexible, factors that improve learning. But detractors contend that many teachers find group decision making threatening and onerous. Others argue that self-governance simply takes turf battles once fought at the district or state level and dumps them at the schoolhouse door. "All they have done is decentralize the politics," says Paul Hill, senior social scientist for the Rand Corp.

Does school-based management lead to more effective teaching or merely create problems for already overburdened educators? Three case histories illustrate the gains—and some pains—that can result from more local control:

SAN DIEGO. Within six months of her arrival at Linda Vista Elementary School in July 1987, principal Adel Nadeau custom-tailored a program to fit her 950 students, 62% of whom were from Southeast Asia and spoke little or no English. With the approval of the school district, she and her 33 teachers decided to split the day in two.

Mornings are reserved for language skills and social studies, with students grouped by their proficiency in English instead of their age. In the afternoons, youngsters of all abilities are thrown together to study two subjects, which are taught for three weeks straight, then switched. After three weeks of computer writing and library research, for example, a student might spend the next three investigating art and music. The aim: to help children learn by giving them concentrated doses of material.

Without the pressure of grades, which the school eliminated three years ago, pupils are progressing more quickly, and attendance has improved. This year, for the first time, Linda Vista placed 27 children in gifted-student classes, and next fall will add 24 more. Three multilingual aides regularly visit parents to talk about what they can do to help their children achieve. "The idea behind site-based management is to make the community part of the process," says Nadeau. RJR Nabisco agrees: last April the company awarded Linda Vista a $550,555

Next Century Schools grant to continue its outstanding work.

LOUISVILLE. For years the only high scorers at Fairdale High School were its basketball stars. Good teachers shunned the school, located on the outskirts of town. Today 31% of Fairdale graduates go to college, 11% more than in 1987, and there are nine applications for every available teaching slot. "If you want to be on the cutting edge of teaching," says social studies instructor Jackie Powell, "this is the place to be."

Behind the striking change is principal Marilyn Hohmann and a committee of elected teachers. They have worked together to change the school's 1,200 students, 30% of whom live in public housing projects, from passive recipients of knowledge into active problem solvers. "Covering the material is not the goal," says Hohmann. "Learning how to learn is the point."

The same goes for teachers, many of whom have been grouped together in interdisciplinary programs. Juniors take "U.S. Is Us," a daily two-hour course combining history and literature, led by two social studies teachers, two language-arts teachers and one special-education teacher. These classes include some of the brightest youngsters as well as the slowest, an approach Hohmann calls "teamstreaming." Teaching together takes more time, commitment and compromise, but it is rapidly becoming the norm at Fairdale—a development that pleases ninth-grade teacher Brenda Butler. "I love the changes," she says. "We finally have an opportunity to voice our opinions and make decisions about student learning."

DADE COUNTY, FLA. During the past three years, 139 of Dade County's 263 schools have voted to join the school-based-management movement spearheaded by former superintendent Fernandez. William Jennings Bryan Elementary School, which embraced the concept in 1987, is an example of a school in mid-metamorphosis, experimenting with change on the one hand while retaining some aspects of more traditional schools on the other.

Principal Nora Brandt, elected by the Bryan faculty to lead them in restructuring, began with the basics, repainting the run-down stucco building and starting a "Bryan Pride" campaign to boost children's self-image and team spirit. To pave the way for improvement, she hired several forceful, imaginative teachers. Today literacy is paramount at Bryan, where the student body is one-third white, one-third black and one-third Hispanic. Teachers stress writing and the classics. Each month 400 children are bused to the Dade County Public Library; parents receive a "reading tips" newsletter.

A small senate consisting of Brandt, an assistant principal, two parents and seven teachers makes proposals to the faculty, which votes on them monthly. Most teachers feel the system allows them to concentrate on what they do best. Says science teacher Jo-Anne Chumbley: "The people in charge here let you run your own show. I can do things that I wasn't able to do in 18 years of teaching."

The main lesson of these schools' experience is that self-governance works best when the principal helps form and carry out group decisions rather than imposes them from above. It is also essential to set clear goals. "You need to think about school-based management; you cannot rush in," says Dorothy Mazine, a middle-school teacher in Miami Springs, Fla. "The biggest pitfalls are time, communication and resistance to change."

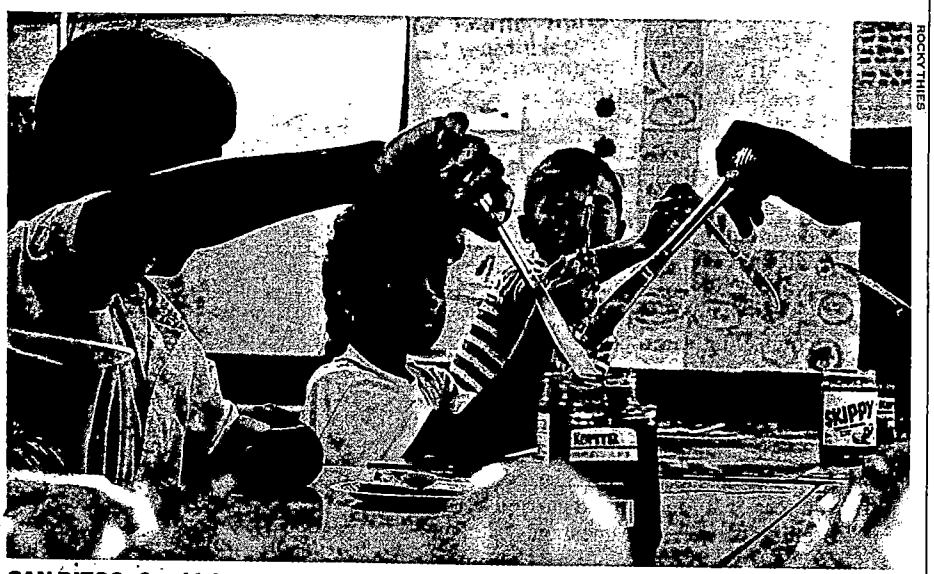
Teachers and administrators must also take care to use their freedom creatively, evaluating everything from the length of a typical class period to how math should be taught. "Restructuring won't make much impact on learning and teaching if we just tinker with the system," says San Diego superintendent Thomas Payzant.

The link between self-governance and student performance is clear at some schools, unclear at others. Yet this spotty record is unlikely to mar school-based management's bright future. In May Citibank gave $2.4 million to help nine Washington, D.C., schools get their plans under way. Dade County has taken the notion a step further, asking principals and teachers to submit ideas for creating 49 new schools from the ground up. Seven are now in the planning-and-building stage. More innovations are sure to come. School districts may find that giving teachers and parents the right to make decisions about education is like dancing with a bear: once you start, you cannot decide to stop.

—Reported by Mary Cronin

MICHAEL L. ABRAMSON

LOUISVILLE: Interdisciplinary study is commonplace at Fairdale High. Here students perform a skit dramatizing themes in constitutional law and American literature.



ROCKY THIES

SAN DIEGO: Combining peanut butter and language skills at Linda Vista, where non-English speakers learn together in the morning and join other classmates in the afternoon.

The Battle over Classroom TV

Two newscasts, one with ads and one without, aim for teens

The beleaguered high school teacher played by Glenn Ford in *Blackboard Jungle* finally got through to his unruly inner-city class by showing them a movie. "What's the answer—visual education?" marveled a fellow teacher after the breakthrough session. "Partly," Ford replied. "If you can just get them stimulated . . ."

Times have changed. Today the issue is not whether visual education (via flickering projector or state-of-the-art VCR) can stimulate students. The question is who should do the stimulating, and at what cost. With the debut of a controversial newscast for teenagers, a fierce battle has been joined over TV in the classroom.

Channel One, the latest brainchild of Knoxville media entrepreneur Christopher Whittle, began daily broadcasts last week to 400 junior and senior high schools. (An additional 2,500 have signed up, and will be on board by late May.) Each twelve-minute show provides a digest of the previous day's news, tailored for teens. Few educators dispute the value of such a show in teaching kids about world affairs. Nor do they deny the appeal of Whittle's sales pitch: for every school that agrees to take Channel One, Whittle will donate the satellite and video equipment needed to receive it. The problem, for many, is how Whittle plans to make money from all this: each show is laced with two minutes of commercials.

The notion of commercials in the classroom raised a furor when it was introduced last year. It also inspired a shrewd countermove by Atlanta cable kingpin Ted Turner. Starting last September, Turner's Cable News Network began offering a classroom newscast of its own, without commercials. (Time Warner Inc. owns 18% of CNN's parent, Turner Broadcasting Co., and 50% of Whittle Communications.) The 15-minute show, *CNN Newsroom,* is telecast each morning at 3:45; schools with cable can tape it and play it back later in the day. Turner's nonprofit venture does not offer free equipment, but many cable operators have agreed to connect noncable schools gratis if they sign up for CNN's program. More than 7,500 schools have enrolled thus far, though only half of them are actually using the show in classes.

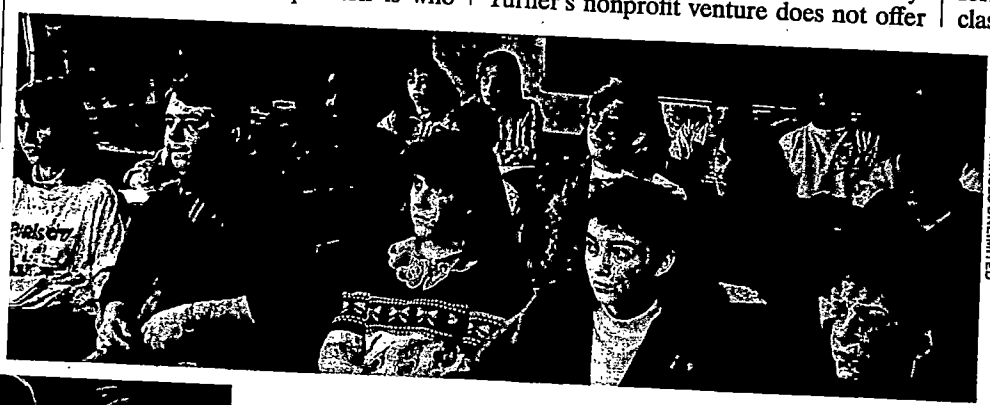
The two programs resemble each other only superficially. Each is fronted by a young team of male and female co-anchors. Each provides a quick recap of headlines along with a few lengthier reports. But Channel One is slicker, faster-paced and more customized for its young audience. Last week's stories, for example, included a look at what military-budget cuts could mean for teenagers who want to enlist, a report on the outcry against satanic rock lyrics, and interviews with young West Berliners. The show's approach seems geared mainly for younger teens; the ads, however, hawk Gillette razors along with Nike shoes and M & M's candy.

CNN's entry is both more substantial and more of a patchwork. Stories are a combination of fresh material and recycled pieces that have aired on CNN earlier in the day. A report on the Soviet elections, for example, began with narration by anchorman Brian Todd, who carefully defined such concepts as *perestroika.* But then came a report from Moscow correspondent Steve Hurst, who tossed out phrases like "party apparatchik" without further elaboration.

The content of both shows, however, has been overshadowed by the debate about commercials. Several prominent education organizations have denounced Channel One for bringing ads into the classroom. Officials in New York and California have barred the show from state classrooms. "We felt that we had no right as educators and policymakers to provide Whittle a captive audience to which he could sell," says Martin Barell, chancellor of the New York State Board of Regents. Others balk at Whittle's demand that schools guarantee a certain percentage of students will watch the show daily. "If you mandate that kids watch it, you really have a problem with who controls the curriculum," says Bill Honig, California's superintendent of public instruction.

Whittle has fought back vociferously. In a series of full-page ads in the New York *Times,* he attacked state bureaucrats for overruling local principals, teachers and parents, who Whittle claims support Channel One. On the matter of commercials, Whittle argues that kids see thousands of TV ads each year and that two minutes more a day is a small price to pay for a show that will enhance their meager knowledge of world affairs. "I don't see why we can't bring [commercials] into the service of education," he says. "It's a reasonable trade-off."

So far, both shows are getting mostly high marks from their customers. Carrollton High School in northwest Georgia last fall selected 30 students to participate in a course built around *CNN Newsroom.* The result, says principal Pat Wright: "We have some pretty strong data that these kids are more apt to know what's going on in the world." Joe Mancini, principal of Bishop Ready High School in Columbus, which subscribes to Channel One, praises the show's emphasis on geography and world events. As for the ads, he says they will be discussed in class along with the news: "What better way to produce discriminating consumers than to have the students watch commercials with some faculty members?" No word yet on whether the students are buying more Nike sneakers—or how many 13-year-olds are shaving. *—By Richard Zoglin. Reported by Naushad S. Mehta/New York and Don Winbush/Knoxville*



REG PARKER—IMAGES UNLIMITED

CNN founder Turner

	CNN	WHITTLE
Schools signed up	7,500	2,900
Length of show	15 min.	12 min.
Commercials	None	2 min.
Selling point	CNN credibility	Free video equipment

CHARLES BROOKS

Entrepreneur Whittle

Not Just for Nerds

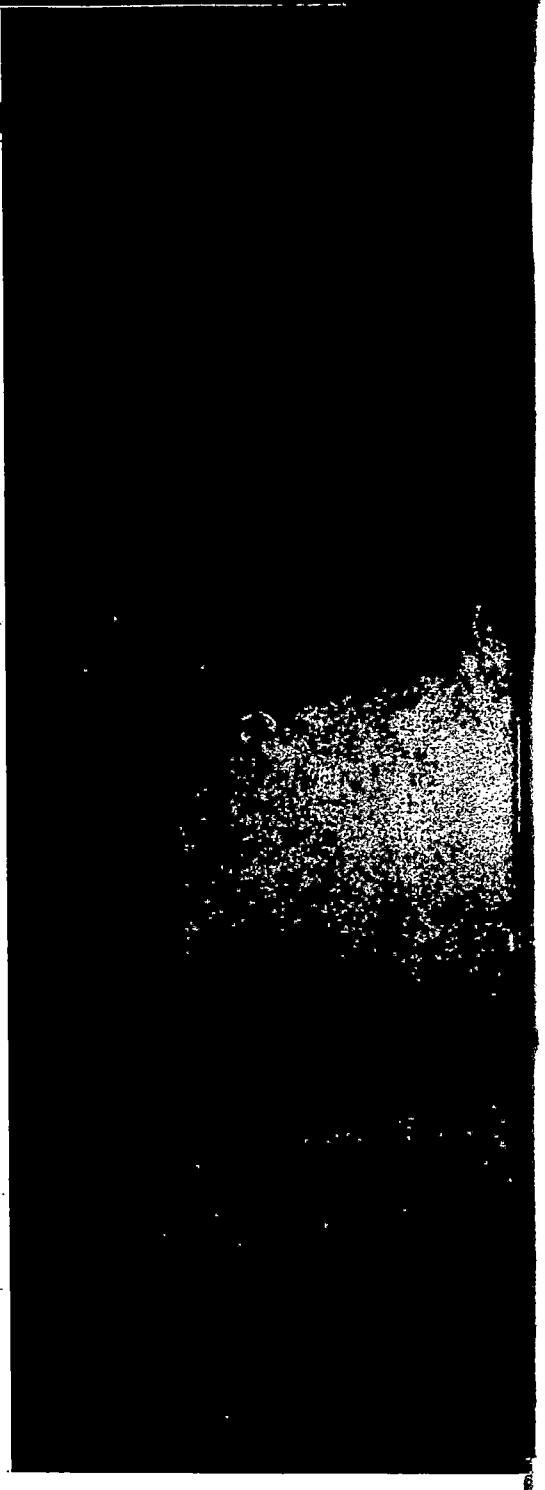
Science is now too important to be left to the technicians, the experts insist. But what can we expect from the crusade to make it user-friendly?

You may not recall the difference between DNA and the PTA, but you've no doubt heard about the science-literacy crisis. Every year brings a fresh set of revelations about America's seemingly boundless superstition and ignorance. Fully 40 percent of the nation's adults think alien creatures have visited Earth, according to studies by Jon Miller, director of Northern Illinois University's Public Opinion Laboratory. Only 45 percent of us know the planet revolves annually around the Sun, and just 46 percent have accepted that humans evolved from earlier species. The prescience era even has its acolytes in the White House. Ronald Reagan admits to being interested in astrology and permitted his wife's obsession with pseudoscience to influence the presidential schedule.

While hocus-pocus thrives in high places, one international study after another places U.S. school kids near the bottom of the heap in mathematical achievement. The Educational Testing Service reported last year that Korean 13-year-olds succeeded twice as often as Americans at solving a two-step mathematical problem, such as determining an average. Three times as many could design a simple scientific experiment. University of Michigan researchers have documented similar achievement gaps between Chinese and American children of various ages. Other investigators have shown that *average* Japanese 12th graders have a better command of mathematics than the top 5 percent of their American counterparts. Indeed, a 1989 report by the National Research Council estimates that three quarters of the nation's graduating high-school seniors leave school without the skills to survive a college-level math or engineering course.

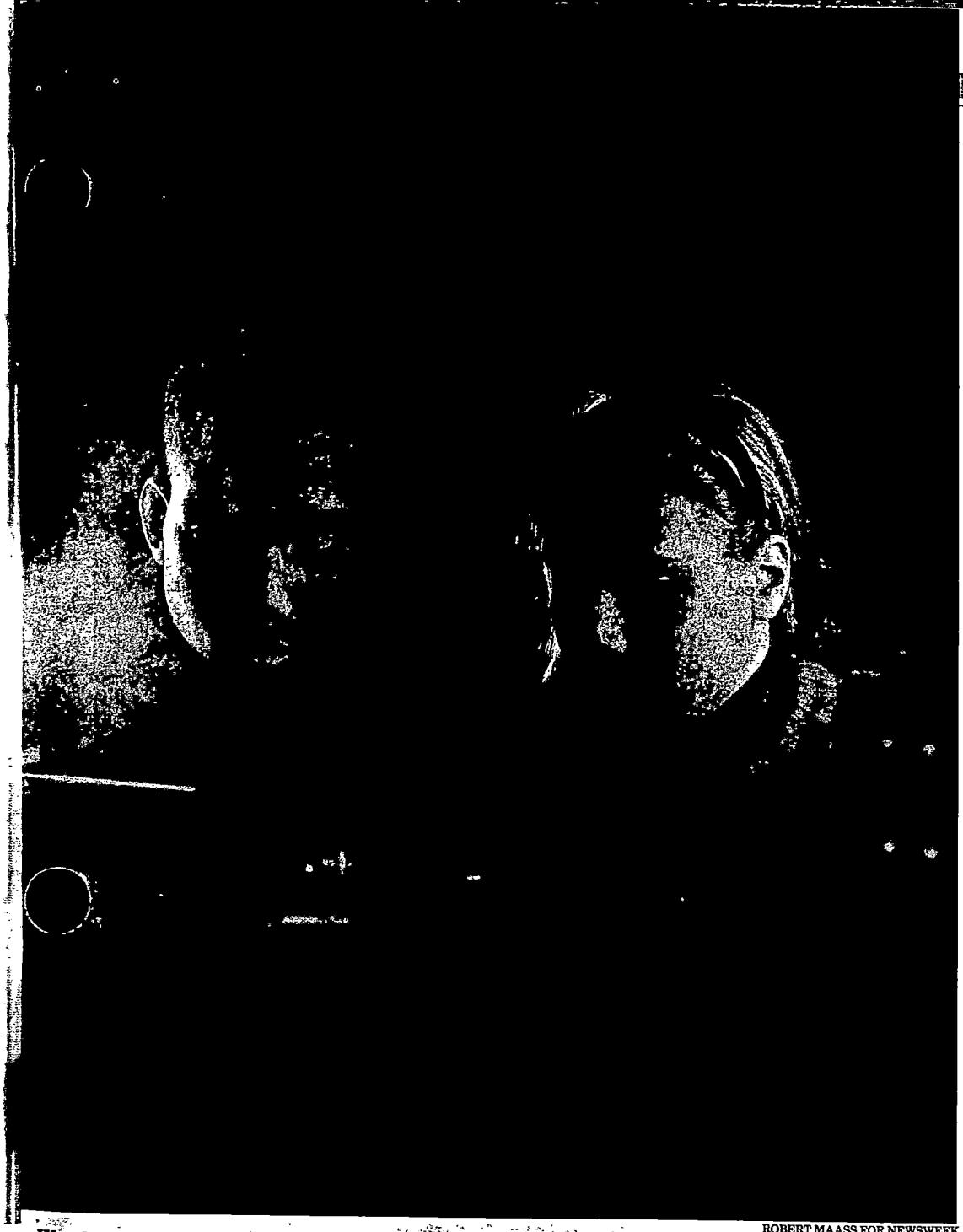
These unrelenting poor results have managed to restore science education to the nation's list of unmet crises. Science—with its drab lab coats, pocket penholders and flaming Bunsen burners—suddenly seems more important. Brains are beautiful! The nation needs its nerds; maybe we all better become nerds. The alternative, say the mighty coalition of teachers, business leaders and public officials, is trouble. Without more and better technical education, the argument runs, future workers will be ill prepared for even the most routine jobs. The United States will lack the engineering talent to compete effectively in the new global economy. Worse yet, voters won't be able to make sensible decisions about waste management or global warming or genetic experimentation or new missile systems. None of those claims is beyond dispute—indeed, some scientists take issue with each of them—but no one denies that something is seriously wrong.

Open eyes: Science is simply a way of looking at the world. At root, it consists of asking questions, proposing answers and testing them rigorously against the available evidence. As the popular astronomer Carl Sagan wrote recently, "Science invites us to let the facts in, even when they don't conform to our preconceptions. It counsels us to carry alternative hypotheses in our heads and see which best match the facts." For all the natural forces it explains, science is a course in analytical thought.



Appealing to any supple mind: *Obi Laing (left) and*

Unfortunately, few American students ever get to taste real science, for few of the nation's schools teach it. All parties now seem to agree that American science education serves not to nurture children's natural curiosity but to extinguish it with catalogs of dreary facts and terms. "The questions we're all interested in concern the universe we live in, the way our bodies work, what the mind is, how all these things are integrated," says Stephen Toulmin, a physicist turned philosopher at Northwestern University. As most of us



ROBERT MAASS FOR NEWSWEEK

Wendy Madigosky watch a laser demonstration at Montgomery Blair H.S. in Silver Spring, Md.

We're Not No. 1

■On a chemistry achievement test, high-school students in Hong Kong ranked first among 13 countries, followed by England and Singapore.
Americans ranked 11th.

■In physics, Hong Kong was first again, followed by England and Hungary.
American students who took two years of physics ranked ninth.

■Singapore scored first in biology, followed by England, Hungary and Poland.
In biology, the most popular science course, U.S. kids ranked last.

SOURCE: THE INTERNATIONAL ASSOCIATION FOR THE EVALUATION OF EDUCATIONAL ACHIEVEMENT

know firsthand, those aren't the kinds of questions that kids are encouraged to ponder. Instead, says Toulmin, "we teach them to solve differential equations, to handle test tubes without breaking them."

Whether out of boredom, laziness or the allure of other pursuits, American students are fleeing math and science in droves. By the third grade, half of all students don't want to take science anymore, says Edward Pizzini, associate professor of science education at the University of Iowa; by the eighth grade, only 1 in 5 wants to keep going. Fewer than half ever take a math or science course after the 10th grade, and only 1 percent study calculus, a subject pursued by 12 percent of Japan's high-school students. The proportion of college students who major in engineering is six times as high in Japan (4 percent) as in the United States (.7 percent). And the U.S.-born engineering doctorate is almost a thing of the past. Foreign nationals now receive a quarter of the natural-science Ph.D.s and more than half of the engineering Ph.D.s awarded in this country.

Sense of crisis: All of which raises economic concerns. Thanks largely to the influx of foreign graduate students, the nation's annual Ph.D. crop has so far held steady as a percentage of the population. But many analysts predict actual shortages of Ph.D. scientists by the mid-1990s unless more students are drawn into the pipeline—particularly more minority students. Historically, science and engineering have been overwhelmingly white, male enclaves; in a 1986 count, only 2.5 percent of the nation's engineers were black and even fewer Hispanic. But both of those groups are now growing fast as a percentage of the population, and the proportion of white males is declining. To keep up, science will have to attract more minority and female students.

Stirred by the sense of crisis, various groups—school boards, corporations, foundations, the federal government—have launched ambitious initiatives to help create a more science-savvy populace. Project 2061, a massive program sponsored by the

RICK FRIEDMAN—BLACK STAR

Never too young: *A skeletal lesson at High Rock Elementary in Needham, Mass.*

American Association for the Advancement of Science, now has six teams of elementary educators working up a plan to revise the nation's primary schools. The National Science Teachers Association has its own nationwide "scope sequence and coordination project"; 10,000 members of the NSTA will meet this week in Atlanta to chart the crisis, among other things. The National Science Foundation is offering grants to states that want to revamp their ience- and math-education programs. e National Research Council and the mithsonian Institution have joined forces to set up a National Sciences Resources Center to train teachers and help bring real science into the schools. The list goes on.

These may all be worthy efforts. The current system is repelling vast numbers of Americans from a fascinating human endeavor, and it may be depriving the nation of a new generation of technical innovators. To the extent that better teaching can alleviate our ignorance and stoke the economy, no one is likely to oppose it. Nonetheless, a few apostates question whether the situation is as dire, or better teaching as sure a cure, as the science boosters proclaim. Will the demand for scientists and engineers really go unmet for any duration, they ask. Is a working knowledge of science in fact essential to productive employment? To good citizenship?

Morris Shamos, an emeritus professor of physics at New York University, thinks not. The impending manpower shortage, he argues, has never been unambiguously documented. "We have seen spot shortages of scientists and engineers in the past and will continue to see them in the future, simply because the supply cannot be rned on and off as quickly as the demand," he argues. "But the same is true of surpluses in the field, and we have seen times when engineers were pumping gas or driving cabs."

Professional scientists are not the education advocates' only concern. They warn that numerically controlled machines are fast replacing old drill presses, and that future autoworkers will have to manipulate robots rather than wrenches. Shamos counters that Americans have mastered all manner of gizmos—from personal computers to electronic machine tools—by reading the instructions or attending on-the-job training courses. The fact that few of us can explain what's going on inside these contraptions has yet to cripple us.

There would seem to be even less evidence that science illiteracy is locking people out of the white-collar work force. As Harper's editor Lewis Lapham has observed, "The society bestows its rewards on the talent for figuring a market, not on the proofs of learning or the subtlety of mind." Ronald Reagan's superstitions didn't slow him down. Nor have Vice President Dan Quayle's scientific failings kept him from becoming chairman of the National Space Council. Why send astronauts to Mars? "We have seen pictures," he explained last fall, "where there are canals, we believe, and water. If there's water, that means there's oxygen. If oxygen, that means we can breathe. And therefore, from the information we have right now, Mars clearly offers the best opportunity to see if a man or a woman can be able to survive on that planet."

Atomic poetry: As for the argument that good citizenship requires a working knowledge of science, it's true that public-policy issues have become increasingly technical. It's also true that scientists are often as bitterly divided on them as the rest of us. People who are familiar with science can argue more effectively about the pros and cons of pesticides or nuclear power. But if *science* is needed for more effective debate, asks Harvey Brooks, emeritus professor of technology and public policy at Harvard, what about other disciplines? Central American history, say, or economics? What about geography? Just last year, young Americans placed last among 10 nations on a National Geographic quiz about the world's political boundaries. When adults were included, Americans placed sixth. But even then, only 32 percent could find Vietnam on a map. Fourteen percent could not find the United States.

None of this suggests that science doesn't matter. To say a president needn't understand biology is not to say he *shouldn't.* And trying to raise public awareness of history or geography hardly precludes doing the same with science. The reasons aren't all utilitarian. The insights of science rival those of poetry or music; the contemplation of atomic structure or speculation on the cosmic reaches offer mystery and elegance that would please any supple mind.

Unfortunately, none of us can begin to take in the expanding web of human knowledge; no amount of schooling will make us expert in every new drug, weapon, device, food additive or environmental issue. Since we can't know what's in every black box science sends our way, some critical perspective seems especially important. Whether we gain that perspective via physics or philosophy is of little consequence. But gain it we must. The alternative is live by the judgment of experts who are no less fallible than we are.

RUSS KINNE—COMSTOCK

Hands on: *The Brunswick School in Greenwich, Conn.*

GEOFFREY COWLEY *with* KAREN SPRINGEN *in Chicago,* TODD BARRETT *in Boston and* MARY HAGER *in Washington*

Rx for Learning

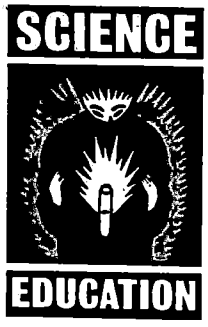
There's no secret about how to teach science

JODI BUREN—WHEELER

'Keep that wheel in their head turning': *Two students conduct a litmus test at the Montessori School of New York*

It's not as if the schools were failing to *create* budding scientists. No one could fault them for that. The scandal is much worse. Educators take children who demand "Why?" and "How?", who poke and drop and squeeze like the most exuberant experimenters—and turn them off to science completely and irreversibly. As Nobel Prize-winning physicist Leon Lederman of the University of Chicago puts it, schools take "naturally curious, natural scientists and manage to beat that curiosity right out of them." Along with the curiosity goes the interest. By third grade, half of all students don't like science; by eighth, 80 percent dislike it.

Small wonder. Despite almost 30 years of exemplary programs, demonstration projects and more reports than there are test tubes in a chem lab, most schools still teach science by lecture, textbook and memorization. Those three unnatural elements combine to produce a familiar chemical reaction: boredom. That style of pedagogy doesn't do much good in history or English, either, but what makes it especially pernicious in science is that it is contrary to the way science is practiced and inimical to a scientific habit of mind. This is hardly a new insight. Since the heady post-sputnik days of the early 1960s, scientists and educators have mapped out in great detail how to foster scientific ways of thinking and nurture inborn curiosity. But these ideas have been adopted in no more than a dozen of the nation's 15,577 school districts. Now we have another chance. Science education is back on the agenda, and the remedies are at hand. "There's no mystery about how to teach science," says Gerald Holton, a Harvard University physicist and science historian. "This time we could do it a lot better than last time." But will we?

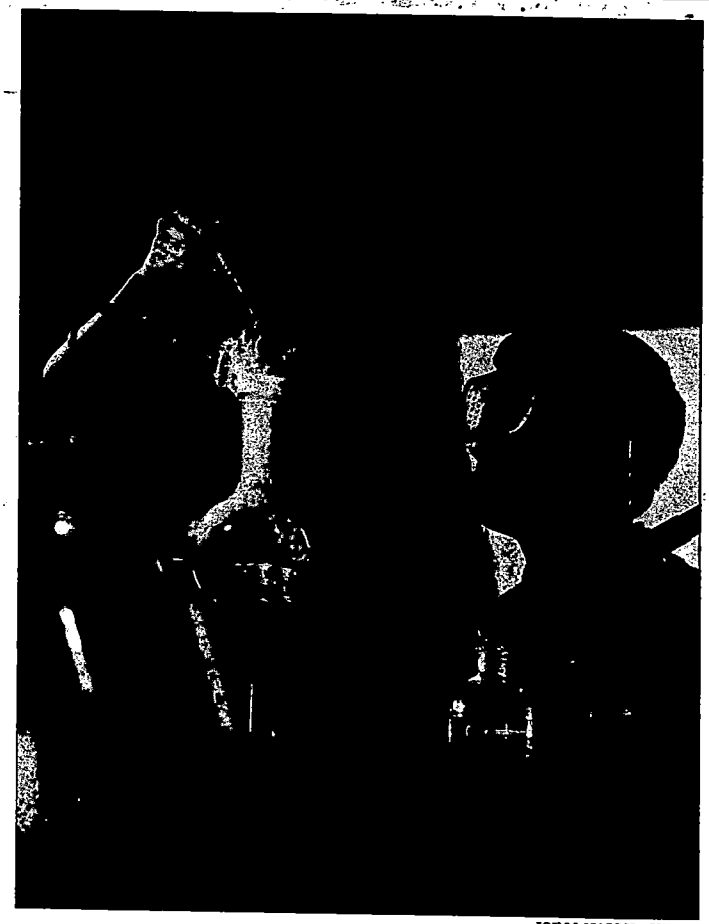


There are only two problems in science education: what is taught and how. Educators get in trouble when they forget that the best way for students to learn science is to have them do science. That means, at a minimum, throwing out the vocabulary drills—nothing is more anathema to science than rote memorization. Instead, youngsters should observe, measure, collect, categorize, record and interpret data, whether by growing radishes in the dark, listing the colors of autumn leaves or measuring how fast hockey pucks glide on dry ice. Since projects such as watching a caterpillar spin a cocoon take more time than reading a chapter on metamorphosis, the best science lessons teach less, emphasizing depth rather than breadth. "Science education should emphasize ideas and thinking at the expense of specialized vocabulary and memorized procedures," argues a 1989 report by Project 2061, a group of scholars mapping out a strategy to make Americans science literate.

A consensus on what specific information to teach is more elusive, since there is no inherent reason to prefer geology

to astronomy, for instance. But in general, educators are realizing that they should teach what is—brace yourself—*interesting.* Now "we teach a lot of things that are intrinsically boring," says physicist and philosopher Stephen Toulmin of Northwestern University. Rather than droning on about impedance, teachers might offer lessons on such mind-bending ideas as the big bang, the mysteries of the brain, the atomic theory of matter. *(Consider: Hold still, said the mother. I can't, said the girl, my matter is always moving.)*

Regardless of what's taught, there are ample models of how to teach science. The favorite buzzword today (as it has been for 30 years) is "hands on" science. "But it's just as possible to have a mindless hands-on program as a mindless textbook program," notes Charles Anderson, professor of teacher education at Michigan State University. To avoid that pitfall, the best programs adapt theories of how the young mind unfolds. "There doesn't necessarily need to be an age-specific curriculum," says psychologist Lauren Resnick of the University of Pittsburgh. "But there does need to be a sequential one." Thus, a smart hands-on program builds one concept atop another until they form a solid edifice of learning.



JOE McNALLY—SYGMA

Learning by doing: *A chem lab at Stuyvesant H.S. in New York*

Soap bubbles: The foundation must be laid early. "Einstein supposedly said that he'd learned half of his physics by age 3," says Edward Chittenden of the Educational Testing Service in Princeton, N.J. Today's tiny aspiring Einsteins should be playing at sand and water tables, rolling balls across floors, stacking blocks. In one exemplary, if unintentional, science lesson, a 4-year-old in a Boston nursery school splashed with kitchen utensils at a water table full of soap bubbles, beating them until they got smaller and smaller. All the teacher had to do was encourage the child's pleasure in his experiment; one day he'll ask why the bubbles got smaller, having already mastered the fundamental principle of cause and effect. With the right tools, children will make discoveries by themselves.

First and second graders benefit from the same informality. Says Chittenden, "They should be feeding caterpillars in order to learn about natural change, doing kitchen chemistry to learn about changes of state," such as from water to steam. The Halloween pumpkin should be allowed to rot so children learn to observe natural changes in the world. Such lessons are cheap and do not require teachers to have a technical background. The instructor must simply recognize the joys of discovery and be able to appreciate the pedagogic value of moldy pumpkins.

The rest of elementary school should replay the early stages of science itself. "All the sciences began with a natural-history phase, in which observations were paramount," notes David Elkind of Tufts University. "Children are natural observers, collectors and categorizers" much like the first biologists, chemists and physicists. In those grades, students should collect leaves, classify animals, observe the activity in a terrarium, for example. Uncontrolled experiments that ask "what happens if . . ." are fine, Elkind believes: they might include putting salt in the dirt of a flowerpot, leaving a balloon in the sun, mixing baking soda with ammonia. Formal experiments, in which variables are carefully controlled, are best left to junior high.

Whenever they experiment, students must not be told to expect a certain result. "That's not a true investigation at all," criticizes ETS's Chittenden. "Once kids feel that they're expected to learn only what an authority tells them, that wheel in their head stops turning for good." To keep it spinning, the best science programs "have no textbooks at all," says physicist Jerome Pine of the California Institute of Technology, who has long advised the local Pasadena schools. Instead they use kits from both commercial and nonprofit publishers. Second graders might use "Plant Growth and Development," which contains everything from seeds and dirt to dried bees and forceps, for 16 lessons such as "What Is Inside a Seed?" Fourth and fifth graders tinker with batteries, bulbs and wires for "Electric Circuits," learning "Hidden Circuits" (such as that formed when an unsuspecting child touches a live wire) and 15 other lessons. The kits are so enticing, says Pine, "that all the teacher has to do is generate an atmosphere where inquiry takes place." The goal is not to teach kids to be electricians or botanists. Instead, "the kits hammer home the notion that one should create hypotheses, gather evidence and weigh it," says Pine.

Cancer cluster: A program developed by the University of Iowa for fourth through ninth graders tries to foster the same sort of skills in a more free-form way. The students come to class with researchable questions that intrigue them, such as how to get blood to a heart when arteries are

The Grown-Ups Also Get F's

■80% of all American adults knew that the continents have been moving for millions of years—and will continue to drift.

Just 45% knew that the Earth orbits the Sun in one year; only 37% recalled that dinosaurs lived before the earliest human beings.

■76% answered correctly that light travels faster than sound.

But only 43% knew that electrons are smaller than atoms and 36% remembered that lasers don't use sound waves.

SOURCE: 1988 SURVEY, NATIONAL SCIENCE FOUNDATION

blocked. They then design ways to find answers. The idea is to encourage higher-order thinking—not memorization but the ability to see connections, solve problems, make generalizations and abstractions. It also gives students a sense of how scientists solve problems, beginning with a testable hypothesis and proceeding by experiment or observation. That might serve them in good stead when faced with, say, an alarming cluster of cancers in their town.

Another trick is to give students "a minimum amount of information," says Paul Williams, director of the Center for Biology Education at the University of Wisconsin. "Let them rediscover the principles of science by doing it." Williams has developed fast-breeding plants that even kindergartners can use to rediscover the foundations of genetics, such as the difference between dominant and recessive traits. That approach taps into a well-documented aspect of learning: people retain information they have found for themselves, not facts they have been told. "If kids do experiments that allow them to reach their own understanding, they learn it," says educational theorist Audrey Champagne of the American Association for the Advancement of Science. This approach, and the flexibility not to demand "right" answers, teaches that the sciences seek verifiable facts, but that none lays claim to absolute truth.

The content of lessons should be geared to real life. Too often, students wrestle with such irrelevant algebra puzzles as finding the age of a man who is three times the age of his son but will be twice his son's age in 13 years. (Answer: he's 39.) Mathematician Jim Flanders of Western Michigan University has a better idea. "Application really motivates us to learn," he says. He suggests that eighth graders, for example, graph the winning times in the men's mile run over the years, observe the improvement of about one second annually and work out an equation to predict a winning time in 1990. (They should also use the times of women runners, so the exploits of FloJo might keep more girls interested in math.)

Chemist Arthur Ellis of the University of Wisconsin exploited current events when he developed a superconductivity kit soon after the 1987 discovery of new materials that conduct electricity with no resistance. The kit comes with a manual describ-

Attention, Teachers: Keep Curiosity Alive!

"Children enter school eager and curious about science," says Jane LoDuca, who teaches a combined class for gifted fifth and sixth graders at Moorhead Elementary School in Indianapolis. "But if we fail to cultivate these qualities, they change." Like most elementary-school teachers, LoDuca has a graduate degree in elementary education. She has no formal education in teaching science, but she likes the subject and works hard not to give it short shrift. That's no easy feat because the curriculum is so crammed. Along with state-mandated dollops of math, writing, spelling, social studies and reading, she is required to give a half hour of science. On a good day, she manages to tack on an extra 15 minutes to science.

Pressed for time, LoDuca relies on both creative accounting and creative teaching. She doesn't lie about how she spends her classroom time. Rather, her approach is marvelously interdisciplinary. "If we're measuring things in science, hopefully we're doing measurements in math," says LoDuca. Or, she might pepper the day's vocabulary and spelling tests with words that students learned earlier in the day during a science lesson on the concept of sound. This year LoDuca has helped run an "invention convention," a new spin on a science fair, which involved the entire school district. Her students started by going to the library and reading books about inventors. Afterward they wrote about figures like Rube Goldberg in their daily journals. Each chose an inventor, wrote a report and made an oral presentation to the class. Then every student had to design and build an invention. Kristin Cox, 11 years old, constructed a long vacuum-cleanerlike machine, called Bye, Bye Fly, to clean the bugs out of the light fixtures at her church. When students had trouble translating an idea into a working model, the class broke up into small groups to brainstorm, the way scientists in Silicon Valley might iron out the bugs in a new design for a computer.

LoDuca gets help from local high-school teachers who have organized a science institute aimed at improving elementary-school classes. In one program, high-school students can become "cadet teachers in science." Each team of two cadets gets $50 to buy equipment. Twice a week the cadets go to classrooms at four of the district's elementary schools, including LoDuca's, to teach 45-minute science lessons. In another program, called Parents and Children for Terrific Science (PACTS), sixth graders can bring a parent to a lab session every Tuesday evening in the high school where teachers supervise experiments. About 30 teams of parents and their children are taking the classes this semester, including several from LoDuca's class.

The institute also runs training sessions to show teachers how to conduct lively hands-on science experiments. Last year sixth-grade teachers learned to use a high-powered microscope. Institute instructors also bring in guest experts from local industry and nearby Purdue University. But the elementary-school teachers say they get their best ideas from sharing with their peers and the high-school teachers. "It was interesting to see a high-school chemistry teacher whose experiment didn't work, either. It makes you feel that you don't have to be an expert," says LoDuca. Only a teacher.

CONNIE LESLIE *in Indianapolis*

Marvelously interdisciplinary: *LoDuca (center) and students*
MARY ANN CARTER

ing Buck Rogers-ish applications such as levitated bullet trains and cars. At Concord High School in New Hampshire, seniors in biology traipse up and down mountains collecting needles of diseased spruce trees to discover the reason for forest decline—a burning question in ecology today.

Studies of memory show that people make indelible copies of experiences that have a high emotional content. In school, that emotion can be surprise. Demonstrate something kids don't expect and they are likely to remember both the phenomenon and the explanation. To teach about thermal expansion of gases—that gas particles, when heated, bounce around more and so take up more space—teachers might heat an inflated balloon until it pops. To teach gaseous diffusion, a teacher might spritz a classroom with perfume and send students sniffing out the far corners.

Structural changes, too, would better exploit what psychologists know about learning. Bill Aldridge, executive director of the National Science Teachers Association, believes that "the major cause of uninterest and failure is the way science courses are structured, sequenced and taught" in a way that "never gives students a chance to understand science." He recommends doing what the Soviet Union, Japan and China do: offer high-school biology, chemistry and physics over four or five years rather than one, and for an hour or so a week rather than five. This exploits the psychological principle called the spacing effect, which holds that the best way to retain information is to study it over a long period of time. Aldridge proposes that 10th graders spend three hours a week on biology, two on chemistry and one on physics, emphasizing description and using few equations or other abstractions. Eleventh graders would spend two hours a week on the three subjects, learning a few empirical laws. Twelfth graders would devote three hours to physics, two to chemistry, one to biology, tackling recombinant DNA, mathematical models and organic chemistry.

Teaching science better obviously requires science-literate instructors. To accomplish that, Paul Saltman of the University of California, San Diego, brings 100 elementary-school instructors together with science scholars and Nobelists for five weeks every summer. The teachers do

(Continued on page 64)

'It's Amino World Without Chemists'

The first-year chemistry students at North High School in Downers Grove, Ill., are locked in battle over the shape of C_2H_5OH molecules. Several have climbed atop their desks. Dancing down one aisle in his black Reeboks, his lab goggles askew, comes Bob Lewis, teacher and referee. As one who strives for chaos in the classroom, he is pleased: having been subdivided into small groups that compete for play money, 23 students who sleepily shuffled into class now care passionately about the molecular structure of grain alcohol. "I can't teach kids 'til I've hooked them," Lewis says. "This is five shows a day."

Lewis's first law of dynamic teaching is simple: the more involved students get pursuing science, the longer they will retain their lessons. And the corollary provides that the more enthusiasm a teacher radiates, the greater the pull of his gravitational field. Classroom theatrics dominate Lewis's repertoire. One perennial stunt begins when a custodian delivers a parcel containing a jar of murky liquid during class. An accompanying note, purportedly from a scientist friend in Atlanta, explains that the dark objects bobbing in the jar are "sewer lice," rare insects capable of purifying raw sewage water. Ashen-faced students eventually learn that these gyrating critters are, in fact, raisins interacting with the carbon dioxide in Mountain Dew. Lewis's most popular "lecture" is actually a 25-minute pantomime on electron energy transfer. He also cavorts through the halls as a furry mammal for "Mole Day," an annual celebration named after a unit of molecular measurement. None of which, he sardonically admits, can compete with any vivid lab display like his occasional magnesium fire: "My students' attentiveness increases exponentially with the likelihood I'll be killed during the experiment."

DAVID WALBERG

There's no business like sci business: *Lewis in action*

Downers Grove North draws many students from "Silicon Prairie," a high-tech corridor in Chicago's western suburbs. Most of the school's 2,000 students are college bound; Lewis's pupils have elected to take his course. Every test question they face has been culled from college tests that several alumni routinely supply to Lewis. His students also must endure the science T shirts he favors as classroom attire. Corniest inscription: "It's amino world without chemists."

Lewis's work also takes him far beyond his classroom. Sponsored by the Woodrow Wilson National Fellowship Foundation, he crisscrosses the nation with a team that instructs other teachers in such new techniques as "microchemistry," a less expensive way of performing experiments. He also travels with "Weird Science," a four-teacher roadshow that exposes youngsters to seemingly magical wonders more intriguing than video games.

Lewis is popular with his students. "The classes are fast," says Lisa Chen, a junior studying advanced chemistry. "You wish you could understand more, and eventually you do." After 20 years, Lewis has concluded that he'll never leave the classroom. He is comparatively well paid but says he won't ever reach his school's top scale, currently $61,000. To do so would involve taking more postgraduate education courses, and Lewis says he has no interest in what he calls the pie-in-the-sky study of education. "I realize at times that I'm a 'professional educator'," he says with a wry smile. "It worries me."

JOHN MCCORMICK *in Downers Grove, Ill.*

So You Think You're Science Literate?

The one sure way to turn kids off science is to make them memorize vocabulary lists. By one estimate, there are more new words in a science course than in an introductory foreign-language class. But once students become familiar with the ideas of science, the terminology becomes, if not second nature, at least familiar. Here are terms that anyone with a good knowledge of high-school science should recognize. Fewer than 30 right? Watch "Nova" every week. More than 50? Congratulations!

absolute zero: lowest possible temperature, -273.15 degrees Celsius; the point at which all molecular and atomic motion ceases

acid rain: contains a high concentration of acidity, resulting from sulfur and nitrogen oxides emitted primarily from motor vehicles and power plants

amino acids: compounds containing nitrogen, oxygen, carbon and hydrogen which, when linked, are known as proteins

antibody: naturally produced protein formed by the blood in response to an invading *antigen,* such as a bacterium. After such exposure, the body has *acquired immunity* to this particular pathogen.

antimatter: matter identical to the ordinary variety but with an opposite electric charge. A *positron* is the antimatter equivalent of an electron.

astronomy: study of the motion, size and other traits of heavenly bodies; distinct from *astrology,* a pseudoscience that believes planetary positions influence events on Earth

Radio Telescope

atom: the smallest unit of matter that can take part in a chemical reaction; consists of a *nucleus,* which in turn is composed of one or more *protons* and *neutrons* orbited by one or more *electrons*

atomic bomb: powered by the splitting of an atomic nucleus *(nuclear fission);* a *thermonuclear* or *hydrogen bomb* releases energy when atomic nuclei undergo *nuclear fusion,* or combination

bacteria: microscopic organisms larger than viruses that replicate by splitting or forming spores and, unlike viruses, are vulnerable to antibiotics

big-bang theory: the leading idea in *cosmology,* the study of the origin and evolution of the universe, holds that the universe began in an immense explosion of space-time. The legacy of that bang is the *expanding universe,* in which everything races away from everything else like raisins in a rising tea cake.

biomass: total weight of all organisms in a particular place, such as a swamp

black hole: collapsed star with such a strong gravitational field that nothing, not even light, can escape it

byte: unit of 8 binary digits, used as a measure of computer storage capacity

carbon cycle: circulation of carbon from plants that take in *carbon dioxide* from the air and convert it into *carbohydrates* (any compound made of only carbon, hydrogen and oxygen) by *photosynthesis,* the process in which sunlight is changed into energy; animals eat the plants, respire and decay, returning gaseous carbon to the atmosphere

Ecological Niche

cell: the basic unit of life. Within cells, *DNA,* the molecule that encodes heredity, contains the blueprint for producing proteins, which fuel biochemical reactions and comprise the structural components of the organism.

centigrade: temperature scale, a.k.a. Celsius, in which water boils at 100 degrees C and freezes at zero

cerebellum: part of the brain that controls muscles

cerebral cortex: part of the brain that controls higher thought

chemical bond: attractive force that links atoms into molecules

Conductor

cholesterol: fatty substance present in the body, as well as in all animal fats, blood, nervous tissue and bile; strongly linked to hardening of the arteries

chromosome: a string-like body, usually in a cell nucleus. Along it are strung *genes* that govern heredity.

comet: a ball of frozen gas and dust that follows a very stretched-out orbit around the Sun

conductor: any material that transmits heat, light or other energy

Crick and Watson: Francis and James, British and American biologists who discovered that *DNA* has the shape of a *double helix*

dinosaur: a reptile that lived from about 220 to 65 million years ago, some 60 million years before the first appearance of humans

Doppler effect: the change in perceived frequency of waves when either the source or receiver moves. For instance, a siren moving toward you increases its pitch, then becomes lower as it speeds away.

$E=mc^2$: the relationship discovered by *Albert Einstein* between energy (E) and mass (m) and the speed of light (c), which determines how much energy a given amount of mass can be converted into. A consequence of Einstein's *theory of special relativity,* it is the basis for the *atomic bomb,* in which splitting atoms releases energy equivalent to the mass lost.

ILLUSTRATIONS BY MARK MATCHO

ecological niche: place and function of an organism in an *ecosystem,* such as living on the savanna and hunting gazelles

electromagnetic radiation: any wave of energy generated when an electric charge, such as an electron, is accelerated. Includes light, radio waves and X-rays, which differ only in their frequency

elementary particle: any indivisible unit of matter, such as an *electron* or *quark*

entropy: the measure of a disorder of a system. According to the laws of thermodynamics, entropy always increases in a closed system unless energy is added.

enzyme: protein that causes or accelerates biochemical reactions in cells

evolution: the central tenet of biology, as first articulated by Charles Darwin in *"The Origin of Species,"* stating that random *mutations,* or changes in genes, are naturally selected, i.e., passed on to the next generation, if they improve the organisms' *fitness* or ability to survive and reproduce. The changes in an organism's structure or behavior to fit new conditions are *adaptations.* Contrast with *creationism,* the idea that God formed all organisms in their current form.

Doppler Effect

fossil fuel: any derived from decayed organisms, such as oil, gas and coal

genetic engineering: the altering of *genes* through any technique of molecular biology, such as splicing foreign *DNA* into a host's *chromosomes;* also called *recombinant DNA*

genome: all the genes in an organism. A multibillion-dollar project to determine the sequence of the human genome is underway.

geologic fault: a fissure in the earth, usually where *tectonic plates,* large masses of the earth's crust, meet. Often the site of earthquakes

geothermal energy: that derived from the heat of the earth, as evidenced by thermal springs and geysers

Homo Sapiens

gravity: one of four basic forces of nature, which moves objects toward each other. A very weak force, it was shown by *Einstein* to be a consequence of the shape of space-time. In contrast, the other three basic forces of nature, the *strong nuclear force, the weak nuclear force* and *electromagnetism,* are carried by particles. A primary goal of physics is to unify the four forces into a *unified-field theory.*

greenhouse effect: warming of a planet caused by an accumulation of gases that trap heat in the atmosphere

Heisenberg uncertainty principle: the principle that certain qualities of an object, such as an electron, cannot be simultaneously known with perfect precision, because the act of measuring one quantity changes the other

Homo sapiens: the species to which modern man belongs; arose about 200,000 years ago

hormone: substance secreted by endocrine glands, which affect an organ or tissue elsewhere in the body

infrared: invisible part of the electromagnetic spectrum, with waves longer than light; heat from sunlight and lamps is infrared radiation

ion: any electrically charged atom or molecule

ionizing radiation: high-energy radiation that knocks out electrons in molecules of material it passes through, such as human tissue, causing ions to form. The loose electrons can cause cancer.

jet stream: air current, moving west to east about 10 to 15 miles up, that affects weather

Mendel: Gregor, 1822-1884. Austrian monk and botanist who first discovered such principles of inheritance as *dominant* and *recessive traits*

neuron: nerve cell, of which the human nervous system has some 10 billion

Occam's razor: a guiding principle of science, stating that the simplest hypothesis accounting for the most facts is most likely to be correct

organic: containing carbon

ozone layer: a layer of ozone gas (composed of three oxygen atoms) 6 to 12 miles above the Earth that screens out most harmful ultraviolet radiation. Currently being damaged by *chlorofluorocarbons (Freons),* gases used as refrigerants and for other industrial applications

plasma: a fourth state of matter (distinct from solids, liquids and gases), consisting of a gas of ions; believed to constitute 99 percent of the universe. Also, the clear, liquid, noncellular component of blood

quasar: starlike objects at the edge of the universe, they provide clues to its age and origin

radio telescope: collects radio (as opposed to light) waves. Used to search for extraterrestrial life

Richter scale: an open-ended scale indicating the severity of earthquakes. 2.0 is barely felt; 6.0 causes considerable structural damage and anything above 8.0 causes massive destruction.

scientific method: identify the problem, gather pertinent data, form a working hypothesis (explanation), do experiments to test the hypothesis, interpret the result, draw a conclusion and modify hypothesis as needed

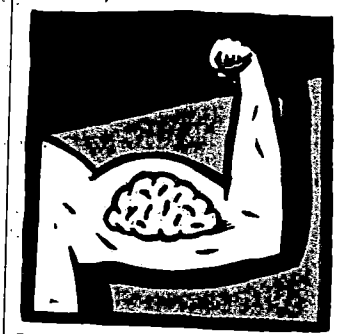
sex-linked trait: characteristic carried on either the *X* or *Y chromosome,* such as colorblindness

software: set of instructions (program) that runs a computer's *hardware*

star: gaseous celestial body, such as the Sun, located in a *galaxy* (collection of stars under mutual gravitational attraction) like our Milky Way

superconductor: material that conducts energy without resistance

Z-particle: recently discovered subatomic particle that carries the weak nuclear force, one of the four basic forces of nature



Cerebellum

(Continued from page 61)

hands-on experiments to vanquish their r and loathing of science. It works. The chers now invent their own experiments and demonstrations rather than teaching from a textbook. One used a peanut-butter sandwich to model the 1989 World Series earthquake; another choreographed a dance to show how the genetic materials DNA and RNA interact.

Improving teaching would do wonders to jump-start America's science literacy. But there is a more insidious drag on our collective science IQ. Call it the nerd factor. Biologist Stephen J. Gould of Harvard University recalls what it was like to be a "kiddie dinosaur nut in the late 1940s": "Any kid with a passionate interest in science was a wonk, a square, a dweeb, a doofus or a geek . . . I was called 'fossil face' on the playground. It hurt." The picture is hardly different today. "Real men don't do science, real women don't even think about it," is how physicist Ronald Parker of the Massachusetts Institute of Technology describes the popular attitude. Science does not seem like the path to fame, glamour and fortune. Bassam Shakhashiri, who heads the education directorate at the National Science Foundation, sums it up: "Our science literacy reflects our values as a society, what we care about." If he's right, fostering science literacy will require radical changes in cultural attitudes built up over centuries.

Even without this obstacle it is difficult to be optimistic about the future of America's scientific IQ. Yes, there are signs of hope, from success with easy-to-use kits to new curricula that encourage discovery. Six school districts, from Philadelphia to San Diego, will take Project 2061's advice, tossing out vocabulary lessons in favor of giving students the values and attitudes of curious, critical thinkers. By this fall, school districts in Houston, Anchorage and much of California will implement Aldridge's recommended high-school science sequence. But there have been so many demonstration projects over the years, so many wonderfully innovative curricula, so many teaching kits that never made it into mainstream education. Once the innovators retired, or lost their funding, the programs crumbled. We aren't befuddled about how to teach science. We know perfectly well what to do. We just don't do it.

SHARON BEGLEY *with* KAREN SPRINGEN *in Chicago,* MARY HAGER *in Washington,* TODD BARRETT *in Boston and* NADINE JOSEPH *in San Francisco*

A Class for Freshmen That May Last a Lifetime

So what happens to the kids who've been bored in grammar school, stifled in junior high and memorized to death in high school? They end up at Marvin Druger's knee. For 30 years he has taught the freshman biology course at Syracuse University, and in the process has become the most popular professor on campus. Sure he gets more than his share of grade-grubbing pre-meds: it's an occupational hazard. But his real concern is with the others. "More than other college classes," he says, "the introductory course should provide a meaningful, motivational, personalized, broadening, life experience that is still meaningful many years later."

But how can you manage that in a course with 1,000 students? There isn't the room or the time to carefully nurture every precious tuition-paying curiosity. So Druger has done the next-best thing. He's built his course around 17 workbooks and tapes. Each covers a different topic such as animal development or genetics. And they're funny. One day he impersonates Charles Darwin—hey, who remembers the original? The next, he follows the tribulations of Sam Sperm looking for a friendly egg. Students basically tutor themselves through the heart of the course by listening to the tapes and completing the workbooks in lab, which is open seven days a week.

HANK MORGAN

A most popular professor: *Druger with students in lab*

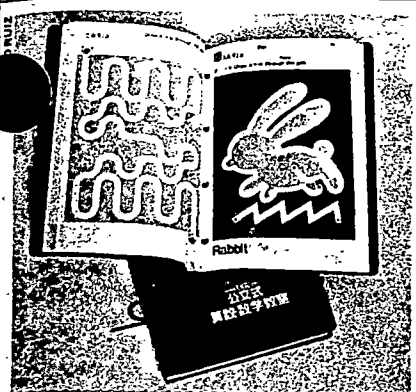
Lab talk: Druger remembers the isolation of his own college days and spreads his 22 graduate teaching assistants among the labs. The TAs are expected to talk with the freshmen; Druger wants to reduce the tensions and anxieties that often develop between teacher and student in a more formal lab-class setting. Also, they might learn something. In addition, students must attend one of Druger's two weekly lectures and a small discussion-group section once a week that's taught by a TA.

Druger doesn't hide behind his assistants. He eats lunch in the dorms with students who talk to him about everything from their career plans to campus life. He writes a chatty weekly newsletter, BioNews, that features the work of students competing in his "BioContests." And Druger offers extra credit to coax students into attending his evening "Frontiers of Science" lecture series that features the top scientists on campus.

Because he hated rushing to complete tests and then waiting a month to get his grade as an undergrad, Druger gives his three major exams in the evening. Students can take up to two hours to answer the questions, which are designed to require an hour of work. Then Druger reviews the answers the same night on "the Bio-Answer Show" (a cross between "Saturday Night Live" and "Wheel of Fortune"), the most popular program on the university's student-run closed-circuit television system.

Druger knows he's only as good as yesterday's class. He carefully monitors evaluation sheets and makes changes accordingly. But any evaluation of his long-term impact, he says, takes 20 years; the final tally isn't in until students reach the point when nostalgia is so diluted by life experience that they can look back on college and decide which experience was worthwhile. He wants to be remembered not so much for the details of his class as for an attitude he tried to foster. "The key to scientific literacy is to provide in-depth exposures that show students how interesting and exciting science is, so that they want to go and learn it themselves," says Druger. And to that extent, his class lasts a lifetime.

CONNIE LESLIE *in Syracuse*



HOW KUMON WORKS

Students are given a series of work sheets emphasizing mechanics over theory.

They must score 100% on each set of exercises before going on to the next set.

By progressing at their own pace, they can climb from basics to calculus.

BRUCE BERMAN

A Kumon trainer works with a student at the Walcott School in Texas

Mathematics Made Easy

Japanese teaching method adds up in the U.S.

By EDWIN M. REINGOLD

To many Americans, Japanese math students seem like computer-brained superhumans who effortlessly outscore their U.S. counterparts. The image may be exaggerated, but the challenge is real. So a growing number of American schools are adopting the latest Japanese import: Kumon Mathamatex, a math-teaching method developed by educator Toru Kumon to improve his own child's performance.

Unlike Japan's notorious *juku* cram schools, which concentrate on passing exams, the Kumon system seeks to increase speed and accuracy in calculation. Students compete not with others but with themselves, constantly striving to better their own scores. A student is given a series of graduated work sheets containing math problems and must score 100% on each within a prescribed time period, usually 15 to 30 minutes, before moving on to the next set. The emphasis is on learning and developing speed in computational skills rather than in mathematical theory. Although intended as a supplement to regular math curriculums, the work sheets can take students from simple arithmetic through calculus at their own pace.

The method, developed in 1958, has had considerable success in Japan. Last year Kumon sent an old friend, retired auto dealer Takayoshi Sogo, to try to sell the program to American schools. So far, 196 in the South and Southwest have taken the offer. "I didn't see any reason why this system wouldn't work in America," says Sogo. "We have merely taken universal techniques and applied them to give each student the self-confidence to tackle his regular math courses."

The first U.S. school to try the system was Alabama's Sumiton Elementary. "One of the first things our teachers noticed," says vice principal Ilene Black, "was the change in attitude of the students. The parents are very positive; they love the fact that their children like it; they don't have to make them do their homework." John Aston, headmaster at the Undercroft Montessori School in Tulsa marvels that "some of our students are already performing at a masterful level" after less than one year.

Each morning at 8:15, students at the Walcott School, located near the New Mexico border in the Texas panhandle, hunch over their desks and busily scribble on their work sheets. There is absolute silence. Keith Meiwes, a fourth-grader who was once intimidated by math, is now doing seventh- and eighth-grade classwork. Melissa Meyer and Amy Perrin also credit Kumon with their new success in math. "This program has helped to give them

self-confidence, a better self-image and motivation," says principal Bill McLaughlin. Nonetheless, Walcott teacher Cathy Fury finds most students still need aid: "It has helped the poorer students most."

Although teachers who have used Kumon are generally enthusiastic about the results, a few question the value of the repetitious system, with its heavy emphasis on the mechanics of math. Some are unconvinced that test-score increases are attributable to Kumon, while others object to the $45-a-pupil annual cost. Shirley Frye, president of the National Council of Teachers of Mathematics, takes a balanced view. "Of course there is no panacea for teaching math," she says. "We are looking for all of the methods that will help make students successful." Kumon certainly seems to be one of them. ■

Miracle Workers

Small victories at a New York school

No one would confuse Seward Park High School with Eton. Half the students at this underfunded, overcrowded facility on New York City's Lower East Side are from single-parent homes, and 65% come from families eligible for welfare. As many as 150 have been abandoned by their parents or are from families that have been evicted. Drugs and alcohol are a way of life. That any learning takes place under such circumstances is nothing short of miraculous. But miracles can happen, as former New York *Times* reporter Samuel Freedman demonstrates in *Small Victories: The Real World of a Teacher, Her Students & Their High School* (Harper & Row; 431 pages; $22.95).

Freedman, who spent the 1987-88 school year observing Seward, focuses on English and journalism teacher Jessica Siegel. A self-proclaimed "salvage and reclamation" expert, Siegel, 41, struggles to pull her predominantly black, Hispanic and Asian students into the safety of the middle class. "I put so much energy and so much emotion into those kids," says Siegel, "sometimes I think my job is being a professional mother." Her efforts are rewarded as she watches the most dedicated of her charges march off to Syracuse, Sarah Lawrence and the University of Chicago.

Despite its often brutal subject matter—one student hangs himself—this is an upbeat book about triumphing against the odds. Freedman offers moving portraits of two immigrant kids—one Chinese, the other Dominican—battling to make it in their adopted country. He also captures the rewards of teaching, while exposing the hardships. Considering the obstacles confronting Seward's teachers and their students, Freedman's book may be misnamed. The victories seem large indeed. ■

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EDUCATION

Shortage of Scientists Approaches a Crisis As More Students Drop Out of the Field

By Dana Milbank
Staff Reporter of The Wall Street Journal

PITTSBURGH — It's only 10 minutes into the first day of class in Chem 11, the University of Pittsburgh's introductory chemistry course, and student Matt Smith is already yawning.

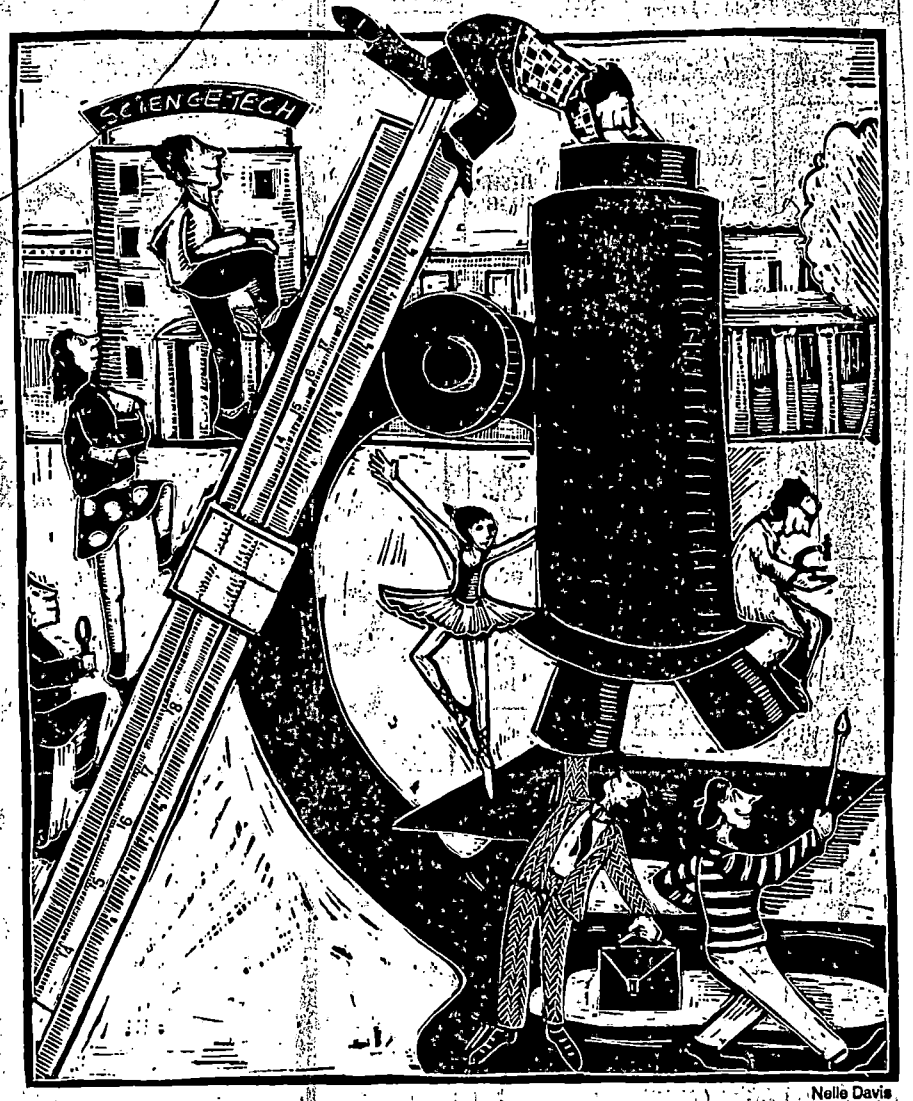
Undaunted, Prof. Henry Bent tries a one-liner about measuring density. Nobody laughs. He explodes a pink balloon full of hydrogen. Mr. Smith starts jiggling his leg and reading his mail. The professor shoots a fire extinguisher into the crowd. Mr. Smith shuts his eyes and slumps in his seat.

Sustaining interest among budding scientists is no easy task nowadays. Mr. Smith, a 20-year-old junior, has already switched his major from biology to business, forgoing plans to be a biology teacher. "I couldn't study science because I didn't enjoy it," he says.

Mr. Smith isn't alone. Comprehensive statistics on the subject don't exist, but according to a National Science Foundation study, some 42% of those who enter college professing interest in science or engineering careers drop out of the sciences after freshman year, and another 23% defect before graduation.

The dropout problem isn't new. But Robert Watson, the science foundation's director of undergraduate science, engineering and mathematics education, says that "certainly the evidence is it's getting worse." With fewer students interested in science to begin with and a critical shortage of scientists and engineers, the attrition rate could soon represent a national crisis.

Frustrated faculty members blame their students. High schools left them ill-prepared for rigorous college science, the teachers say. Television and video games, meanwhile, gave them meager technical skills, short attention spans and a distaste for hard work. "They get here and may genuinely be interested in science, but they don't have the tools to do it," says Gary Haller, professor of chemical engineering at Yale University.



Nelle Davis

Students, in turn, blame science professors for using antiquated teaching methods and draconian grading systems. They also complain of dry lectures packed with scores of incomprehensible formulas and illustrated with confounding diagrams. Science students typically put in more work than their peers in the humanities or social sciences, and their labors are often rewarded with substantially lower grades.

David Weisberg, a junior at Emory University in Atlanta, entered college as a pre-med major, but after dabbling in

Please Turn to Page B11, Column 2

vide details.

Shortage of Scientists Nears a Crisis As More Students Leave the Field

Continued From Page B1

chemistry, biology and mathematics, he transferred to the business school. "With all that lab work and the time put forth and for as well as I was doing, it wasn't worth it," Mr. Weisberg says. "It shot me down. I was just miserable."

Weekly Problem Sets

Michael Chen entered Yale in 1986 planning to study science like his parents and sister, who are doctors, and his brother, who is a computer consultant. But then, he took astrophysics. "It scared the hell out of me," says Mr. Chen. "I put more work into the weekly problem sets than I did into midterm and final papers" for other courses.

Mr. Chen switched his major to English and has since taken a job in publishing. "In other classes, if you do the work, you'll get an A," says Mr. Chen. "In science, it just doesn't work that way."

"It's an enormous problem," concedes mathematician Uri Triesman of the University of California at Berkeley. "No one will follow us unless we make an invitational atmosphere."

Much of the hostility students perceive in science comes from the stingy grading. Science professors, notoriously tight with the A's, commonly grade on a "curve." For every A awarded, there must be a certain number of D's, regardless of merit. That leads to fierce competition for the good grades. Some students refuse to help others prepare for exams and disparage high achievers for "breaking the curve." Competition becomes so fierce that students have been known to steal or sabotage their classmates' lab experiments.

Lowest Grades

"It's a great source of pride to science departments that they have the lowest grades in the college," says William Coleman, professor of chemistry at Wellesley College and an advocate of reform. "I don't see why they're proud of that."

Frightened by low grades, students reject science courses in favor of history, for example, where an A paper will be given an A, regardless of how many other A papers are submitted.

They also find that they usually don't have to work as hard for that A in history. On top of lectures, science students must take time-consuming lab courses—often for only partial credit, or for no credit at all. At some colleges, science majors have to take twice as many required courses as students in other disciplines.

Some scientists say today's crisis has its origins in the post-Sputnik era. Professors had more science enthusiasts than they could handle in those days, so they devised ways to "weed out" the less serious. They piled work on their students and made them compete for high marks. And with an oversupply of science students, they didn't have to worry whether their teaching style was inaccessible.

Financial Incentives

But now that interest in science careers has waned, the "weeding out" system has become perilous. "A lot of people are turned off" from sciences, says Katharine Hanson, executive director of the Consortium on Financing Higher Education. "It's just not worth the battle." It doesn't help that the financial incentives for science careers are less attractive than those for, say, law or business careers, she added.

Some science professors are trying to make their courses more appealing. Wellesley's Mr. Coleman, for example, has been having his introductory chemistry students read and write more about science's social and political relevance. He threw out the grading curve, so students wouldn't compete against each other. He also thinks science departments nationwide could ease requirements without compromising rigor. But he admits his views are considered radical by many of his peers.

Others, trying to fight the lethargy without compromising the requirements, become entertainers instead of professors. One organic chemistry professor set his lecture to the tune "America the Beautiful."

Another entertainer, however, is about ready to close his act. "I'm going to be a marine drill sergeant—I'm not going to smile until Christmas," threatens Pitt's Mr. Bent, a 40-year teaching veteran.

"We've pulled out all the stops, and we're still not getting results," he says, disassembling a toy cannon after class. "We're having the worst times of our lives now, and it's getting worse."

French Steel Output

PARIS — French companies produced 1,161,000 metric tons of crude steel in August, down 12.5% from a year earlier, according to industry data released Friday.

The National Steel Manufacturers' Association said the August result brings French output for the first eight months of the year to 12,792,000 tons, down 3.1% from the like 1989 period.

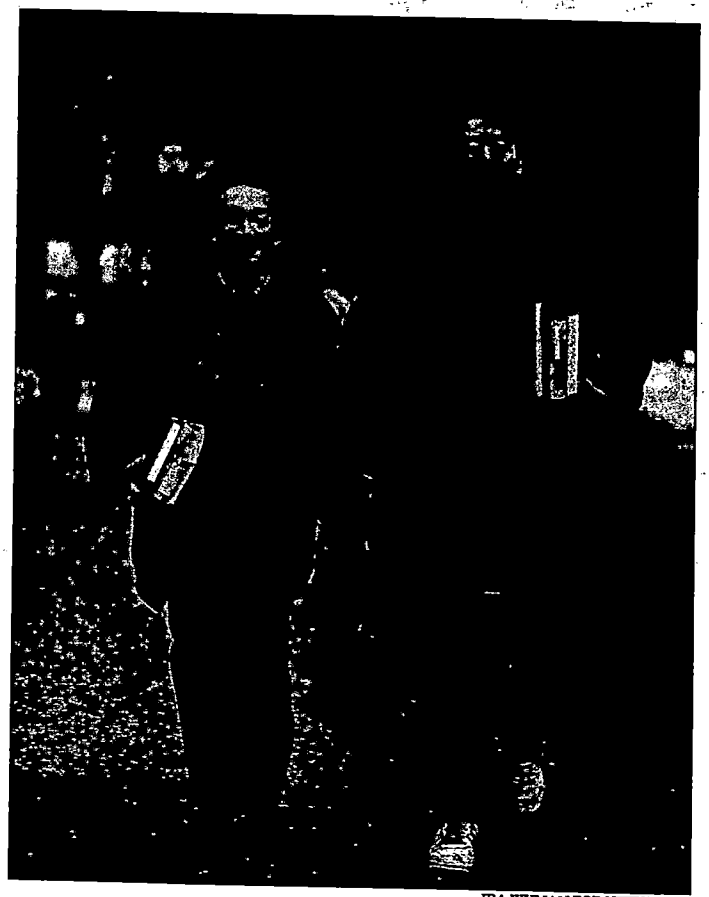
EDUCATION

Mastering Being in America

Japanese are flocking to U.S. business schools

For much of the last decade, Japan has been teaching American business a lesson or two. Pick an industry, almost any industry. Consumer electronics? Companies like Sony and Matsushita long ago bested such U.S. firms as RCA and Admiral. Automobiles? The Honda Accord is now the best-selling auto in the United States. Banking? In the last 10 years, Japanese banks have displaced not only American but French and German institutions from the list of the 10 largest banks in the world. So why are thousands of Japanese now flocking to American business schools?

Backed in most cases by corporate cash and charged with the mission of deciphering often inscrutable American culture, the Japanese are coming to America to learn from—and about—the vanquished. Japanese students now account for more than 5 percent of the total enrollment at America's top business schools—and as much as 12 percent of the class at Massachusetts Institute of Technology. In the last five years, the number of Japanese taking the standardized test for admission to M.B.A. programs has nearly tripled to 3,700.



IRA WYMAN FOR NEWSWEEK

At home abroad: *Yamamori (left) and Yamaguchi*

The Japanese have attended American business schools in small numbers since the 1960s. But corporate leaders there have generally been wary of M.B.A.s, preferring to teach business the old-fashioned way—on the job where they can also soak up the corporate culture. Venturing outside the company can risk tainting that spirit. "Some of the major employers in Japan still feel that graduates of the M.B.A. program stand for things they don't like," says Charles Hickman of the American Assembly of Collegiate Schools of Business.

But they send their "salarymen" anyway. Japanese corporations may not be enamored of American business practices, but they're certainly enamored of American markets, a subject business schools address. To Japanese students, the M.B.A. has come to mean Mastering Being in America. More than three fourths of Japanese business students here are sponsored by their employers, and many of them expect to manage Japanese subsidiaries here someday. Jack Lewis, an associate professor at the University of Southern California Business School, says that for Japanese students, developing business skills is down the list of priorities, behind honing language ability and understanding American culture. Jinei Yamaguchi, a Mitsubishi Bank employee attending MIT's Sloan School of Management, echoes that notion. "[Business school] is more to learn about America," he says, "than to learn about net present value."

In many ways, the M.B.A. has become just one more American product that the Japanese have adapted to their country's best advantage. Says one American expert on Japan, "If there's something of value in these schools, they're not going to overlook it." Naoki Yamamori is typical. Formerly a bank branch manager for Dai-Ichi Kangyo in Tokyo, he came to Sloan nearly two years ago. Though he hopes to learn more about finance, Yamamori's foremost goals are "to have an American friend and understand how they think." Yamaguchi says his experience at Sloan should pay off later if he has to communicate with branch managers of Mitsubishi's American subsidiaries. Beyond that, he concedes, the utility of much of the curriculum eludes him. "The real world and what I learn here are pretty different," he says.

Foreign influence: Business education is one American industry that's eager to have a Japanese influx, regardless of the reasons. "Globalization" is the rage on campus, and the more international influence the better. While the Japanese may be the single biggest foreign group (and the fastest-growing) in top-ranked American schools, they are hardly alone. This year foreign students make up almost 20 percent of the enrollment at the nation's elite business schools. Colin Blaydon, dean of the Amos Tuck School of Business at Dartmouth, says having so many foreign students in the classroom "changes the conversation entirely. There's nothing like having your classmates bring 22 different perspectives to a case study."

While the demand for diversity is genuine, the schools are motivated by practical, as well as academic, considerations. Though the number of American applicants to business schools has grown steadily for the last 25 years, some educators see a decline on the horizon. There are now more than 700 graduate business programs in the United States, compared with about 400 in 1975. With the '90s promising fewer college-age students, the competition for students is expected to become more intense. "The demographics are sobering," says Robert Virgil of the John M. Olin School of Management at Washington University in St. Louis.

Some American business schools have begun exporting students. In late 1988, the Tuck School launched a program in international business in cooperation with International University of Japan. This spring Stanford will send a select group of M.B.A. students to Kyoto to study Japanese business. Still, with the Japanese economy flourishing and only four business schools in all of Japan, this is one trade balance that is likely to remain in America's favor for a long time to come.

TODD BARRETT *in Boston*

EDUCATION

Not a 'Miracle' Cure

After a difficult year, BU is still trying to save the schools of Chelsea

BY MARK STARR

Ted Sharp, assistant dean of Boston University's School of Education, was a long way from the ivory tower when he arrived last year at the Burke Elementary School in Chelsea, Mass. The school sits on the edge of an urban wasteland, in the shadow of the hulking green expressway that connects tiny Chelsea to Boston. And on this day, the opening of school, windblown trash lined the schoolyard's metal fence. "I can tell you one thing," Sharp said, kicking at the garbage. "We're going to get this mess cleaned up."

Good to his word, the trash is gone. But as Chelsea opened its schools last week for the second year in what is arguably the most dramatic experiment in American education—the private takeover of one city's public schools by a major university—that's the only mess that proved easy to clean up. "I have to admit," says Peter Greer, dean of BU's education school, "that we didn't realize how tough it was going to be."

In theory, it all seemed so clear. The poorest and perhaps worst school district in Massachusetts admits its failure and turns over its district—broken locks, paltry stock and empty barrels—to the can-do men of academia. With a clear purpose and a 10-year contract, BU moves swiftly and boldly, establishes a womb-to-tomb educational system and becomes nothing less than a light to the nation.

It hasn't happened yet. BU made its deal with the local school committee and then found itself battling lawsuits from the teachers' union and local Hispanic parents. BU knew Chelsea couldn't afford many educational luxuries but then watched in horror as the locals *cut* the already inadequate school budget. After a heavily publicized send-off, BU's controversial president, John Silber, went looking for foundation funding and found that in those deep pockets there wasn't even chump change for his vision.

For the past year, NEWSWEEK has followed the Chelsea experiment, attending meetings and regularly interviewing key participants. This report is the start of a closely observed study of how education reform is accomplished—if it can be accomplished—and, for the first year at least, has been a view of the boardroom and courtroom, not the classroom. The process has proven slow and incremental; the white knights have found that their spades are as useful as their lances.

In the first year BU managed to appoint an outstanding new school superintendent only after withstanding a political backlash in a community where patronage was more important than any one of the three R's. BU bought computers, wrote curricula, set up alternative high-school programs, started an adult-literacy campaign and built bridges to immigrant groups more used to neglect and failure. "Don't ask us to show you anything for five years," the always combative Silber says. "It took them about 30 years to mess up the system. Who says we can correct it in three or four?"

Chelsea (population: 26,000) once boasted a quality school system that served generations of successful Italian, Irish and Jewish immigrant communities. Horatio Alger graduated from Chelsea High some 140 years ago. But there are few modern-day Horatio Alger stories read or lived there today. Over the last 60 years, the population has shrunk by half, fleeing along with the city's once strong industrial base. What's left is a litany of underclass woes. Chelsea is the state's poorest community. More than 60 percent of its population

Long Odds

Chelsea is small, very diverse and full of problems.

Population: 26,000.

Average family income: $10,000.

Student body: 3,560. 55% Hispanic, 28% white, 12% Asian and 5% black. A majority speak English as a second language. One in four female high-school students is either pregnant or already has a child.

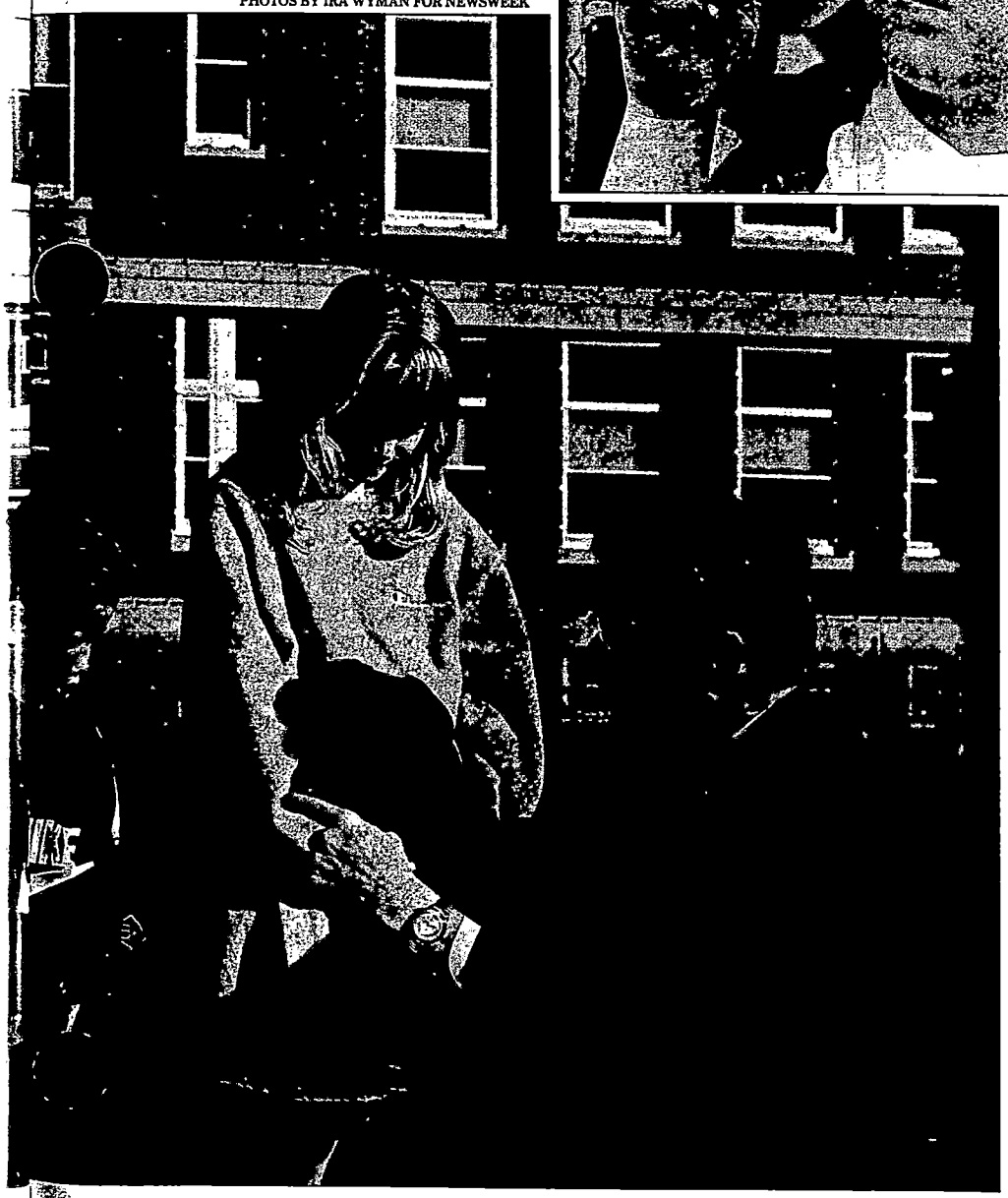
Dropouts: 52% of entering eighth graders quit before graduating.

School funds ('90-91): $16,661,490 (city, state and federal).

BU fund raising (through August 1990): $2,400,000.

is minority, principally Hispanic and Asian; a majority of the children speak English as a second language. Only about a dozen seniors even take college entrance exams. The dropout rate exceeds 50 percent, and its teenage pregnancy rate is one of the highest in Massachusetts. The newest school was built 67 years ago. "Quite frankly I find our problems insurmountable," said former Chelsea School Committee chairman Bruce Robinson. "We believe [BU] is the only hope."

That notion didn't originate in Chelsea but with Silber, who had proposed his university as the "only hope" for Boston's schools several years ago. When Boston balked, Chelsea, which borders Boston just to the north, invited the university in. "The wonderful thing about Chelsea," Silber said, "is that it is small enough to reach our arms around." Critics called it a stranglehold. The school board gave the university a 10-year contract to run the schools and relinquished virtually all powers—except the power to fire BU.



Bold visions: *Silber (below) with Chelsea pupils, two kindergarten children examine a snail (right)*

PHOTOS BY IRA WYMAN FOR NEWSWEEK

"I don't want to be an ass or grandiose," Silber told NEWSWEEK just before school opened last year, "but I don't think it's utterly fanciful to say we're testing the future viability of American primary and secondary education." Also, the viability and utility of America's schools of education. He didn't think much of them to begin with and, he'd wonder aloud, if they couldn't run a local school district the way a medical school managed a teaching hospital, who needs them? Silber turned the project over to Greer and Sharp, both former school superintendents and veterans of William Bennett's U.S. Department of Education. They were not naifs. "I'm not sure anything could have prepared us for the level of cynicism and despair," says Greer. By sheer willpower they set out to overcome the resistance: Chelsea's problems—despite countless community meetings—would be solved from the top down. Sharp explains the strategy bluntly: "We've been suffocated by wonderful people in education. Give me a few bastards who know what they're doing."

The cornerstone of BU's Chelsea program was to be three years of preschool for every child and day care for any infant that required it. Silber himself had set one standard of judgment; he insisted that BU would raise $3 million for Chelsea and get started on the preschool program the first year. BU fell about a million short. This year kindergarten will be extended to a full school day and a pilot Early Learning Center will handle 154 youngsters from 7:30 a.m. to 6 p.m. But the full preschool program remains a major foundation grant away.

Without the preschool program, the deans concede, Chelsea is unlikely to become a national model; in fact, though no one at BU ever suggested this publicly, it might not warrant 10 years of the university's full-time attention. "If we're not going to be able to get those kids from birth through five years old," said Sharp, "we're just treading water. That's where you break the cycle." Still, BU balked at bankrolling—at an estimated cost of a whopping $7 million—that critical program. "We've shown our commitment," says Greer. "Now's the time for others to show theirs."

Silber was supposed to raise the big

First home for immigrants: *Developmental screening of 5-year-old Malessa Peuo*

bucks. The BU president had developed a national reputation and, despite roots as a Texas Democrat, had close ties with the Reagan-Bush Republicans. (Bush spoke at BU's 1989 commencement.) Talk, however, was no substitute for money. A few corporations like Raytheon made grants, but the big foundations declined. How could the Ford Foundation, which spent millions on a blueprint for education reform, turn down a real-life effort, Silber fumed? How could the Rockefeller Foundation, which once tried to feed India, reject "Chelsea" as "too big"?

Peter Goldmark, president of the Rockefeller Foundation, said it turned down BU because the huge costs of the project made it very difficult to replicate. "One of the central questions for us," he said, "is if it works, will it go elsewhere?" Silber, who had been flirting with a run for governor, had said he wouldn't be a candidate in order to devote his energies to Chelsea. In January, he announced his candidacy; Silber had, in effect, become an absentee father, busy raising funds for himself.

Silber had conceived his takeover at the height of the "Massachusetts miracle." By the time it occurred, the miracle was how fast the economy had plummeted. The city's first school-budget proposal was even lower than the previous year's—and 11.5 percent below BU's request; it would have lopped as many as 100 teachers off the payroll and jeopardized $1.8 million in state funds. Suddenly the money BU could raise was needed just to maintain the status quo. The university was frustrated by Chelsea's refusal to make a financial commitment to its schools. Chelsea spent about 20 percent of its tax revenues on education; statewide, the average city expenditure is 31 percent. A letter to the local paper seemed to embody the Chelsea attitude: "I was under the impression that you were going to bring in the money, not have us raise it," wrote an angry taxpayer.

Beside the money woes was the other major plague, politics: small-town politics, racial politics, union politics and university politics. Every significant step, in fact almost every insignificant step, was taken across a political minefield. Before the school year even opened, the Chelsea project was saddled with two lawsuits challenging the constitutionality of the takeover, one filed by the teachers' union, the other by members of the Hispanic community. (The suits are still pending.) "We're going to war," proclaimed then union leader Donald Menzies. "You don't need to sell out to the first bidder."

The irony was not lost on the university that these two BU adversaries were hardly flourishing in the old Chelsea system. The teachers, among the lowest paid in the state, were working without a contract and faced major layoffs. BU prevented the layoffs and delivered a 5 percent bonus to teachers at the start of the school year. Despite Silber's reputation as a union buster, BU and union negotiators, backed by the American Federation of Teachers, agreed on a new three-year deal.

But the membership, wary of new review procedures for teachers who had previously performed without formal evaluations, rejected the deal. The teachers, Greer learned, were suspicious of everything BU did; they saw everything, he says, as "a scam." With time, however, a gust of *perestroika* reached the faculty room. After all, a teachers' newsletter had been established and a 45-member teachers' board was meeting regularly with the superintendent. In one new venture, all but one of the kindergarten and first-grade teachers had volunteered to visit model programs around the Boston area. On the next-to-last day of school, the teachers approved a new three-year contract. "Division isn't helping us," says Mike Heichman, the union vice president. "The common ground we stand upon to improve public education . . . is greater than any differences that separate us."

Slowly, the community at large absorbed that message, too. In August 1989, after BU bought out the contract of Chelsea's veteran school superintendent, Greer invited community representatives to participate in the search for a replacement. The choice came down to three candidates, two of whom, BU believed, would be exceptional. The locals voted overwhelmingly for the third. When BU ignored its counsel, the Chelsea contingent was irate. Soon even BU's critics would agree that the choice of Diana Lam, a dynamic veteran of the Boston school system, was inspired. But only a few weeks into the BU era, Greer could be heard lamenting, "I'm spending my whole life doing damage control."

He had particular problems with Chelsea's Hispanic community. Local leaders were slow to embrace BU. Their distrust of BU was likely exacerbated by Silber's longstanding and vocal distaste for bilingual education. Greer was exhausted by ceaseless demands for him to appear at community functions. "I could go to 10 events and if I missed the 11th, it was a *cause célèbre,*" he said.

Angel Meza, of the Chelsea Commission on Hispanic Affairs, says the university "lacks respect" for the Hispanic community and makes no serious outreach effort. "We don't want BU to go away, but we want this to be a partnership, not a dictatorship," he says. Greer, however, is convinced that what His-

PHOTOS BY IRA WYMAN FOR NEWSWEEK

Bringing reforms from the top down: *Sharp (left) and Greer*

panic parents feel about BU might not be the same as "what two or three 'leaders' and their lawyers feel." BU had named the Peruvian-born Lam to head the system. And she began phasing out a tracking system that grouped most of the Hispanic children together, in classes that tended to be less stimulating even by Chelsea's dim standards. Now, all students will follow an academic curriculum and will be grouped heterogeneously. (There had been heavy gender tracking as well; a business course for girls entitled "Charm and Personality" has been eliminated.)

Greer's efforts at appeasing the community weren't helped by Silber's nascent political campaign. If he wasn't remarking on how it was generous welfare benefits that attracted so many Cambodians to the state, he was urging an end to welfare benefits for unwed mothers who have more children. Still, his offenses paled next to the clumsy actions of Jon Westling, Silber's choice as BU's acting president. Westling's letter to superintendent Lam chastising her for praising Nelson Mandela to Chelsea eighth graders made front-page news in Boston. "Nelson Mandela is not someone who should be held up as an heroic example of patient commitment to a good cause . . . he has thrown in his lot with killers," he wrote of the man who soon after would be given a hero's welcome by the entire city of Boston.

Westling was just one more frustration for Lam. Despite pursuing a regimen of coffees with any and every group, and corresponding with parents in English, Spanish, Vietnamese and Khmer, Lam was hearing a constant refrain demanding consultation on every issue and change. "Everyone simply can't be involved in everything," Lam said. She was already working 12- to 16-hour days, which left her communicating with her two young children at home by note, yet making very little headway where it counted—in the classrooms. Lam even began teaching a third-grade class once a week, hoping to inspire by example. "I've got to be more patient," she kept telling herself. "What I see as going too slow, the people in Chelsea view as moving too fast."

Greer and Sharp, though, weren't convinced it was simply a matter of pace. What BU had to do, they believed, was to break through the local resistance to any change. Sharp called his critics the "ain't-it-awful crowd," and they seemed to howl at every policy or personnel shift, major or minor. A dramatic example came at midyear when Chelsea implemented alternative after-school and weekend courses. The courses—some 17 such as "Johnny Tremain and Exploring Boston," which included a Freedom Trail field trip—offered credit for attending. The teachers' union blasted this "charade" that rewarded students "just for warming seats." Greer defended the new program as an option to a system that wasn't working. "When you have 490 out of 1,050 students flunking two or more courses," he said, "you just don't blame the students."

Many of the critics, though, prefer to blame the university. Anthony Tiro, chairman of the Chelsea School Committee, says BU always seems to know better than the locals. "There's a big difference sometimes between what's important to BU and what's important to the community," he says. Elizabeth McBride, another school committee member, echoes that concern—and says that while the university may know education, it knows nothing about public relations. "Unless they change and stop looking down at the people of the community," she said, "they're going to have big problems." Moreover, McBride says, the city never really understood how comprehensive BU's approach would be—in areas like prenatal care, drug abuse and day care. "A lot of folks here think they're not just trying to run the schools," she said, "they're trying to run the city."

Greer was more than willing to blame himself for at least some of the disenchantment. He didn't always have the time to follow up his own initiatives. The BU-Chelsea experiment was among the hottest topics in education circles. Greer was inundated with calls, correspondence and invitations to speak. As he headed off to Puerto Rico for a speaking engagement, Greer said he understood why the best innovations in education so often went awry. "They're wonderful in the beginning," he mused. "Then everyone in charge heads off on their speaking tours."

IRA WYMAN FOR NEWSWEEK

Black pride: *Chelsea's first African-American History Month*

For all the confusion, contention and contretemps that marked the first year, there was significant change and achievement in Chelsea. BU brought $800,000 worth of computer hardware and software into the system for use in both office and classroom, reintroduced the concept of professsional development for teachers, involved a few hundred BU tutors with Chelsea students, divided the high school into three separate "schools within schools" and developed a plan for a health clinic there. Its Intergenerational Literacy Project taught 66 adults how to read and, in turn, how to teach their own children. Other successes were smaller, from the Chelsea football players suiting up for a BU home game to the college fraternity that adopted an elementary school. The good will engendered by these lesser efforts was not lost on Greer. "When we came up with three quarters of a million in technology for the schools, I didn't hear a thing," he says. "But when we raised $1,500 to send seven students to tour Congress, people were coming up to me saying, 'Heard what you did. Great, really great!' "

The first year is over and BU finally has Chelsea's most familiar weapon on its side: inertia. The transition has been made, and there is tremendous reluctance to abort the experiment and put the city through another huge upheaval. Expectations have been lowered a bit. Everyone realizes that no quick fixes are in the offing. While Silber is still an underdog, should he find himself in the statehouse next November, as governor he could pump funds into Chelsea's experiment. If he loses and returns to BU, he will undoubtedly go back to raising money—he's never been known as a quitter. So stay tuned. How far can BU take the system? Will the community go along or resist more bitterly? How many students will be saved? "This isn't a movie, it's the real world of Chelsea," says Silber. And the real world, as he knows all too well, is full of surprises. ■

EDUCATION

Swapping Debt for Knowledge

New dollars for scholars

It's hard to conceive of any good coming of the $1.3 trillion that less developed nations owe to foreign banks and other lenders. The interest payments alone stifle the impoverished countries' economies and, with virtually no foreign exchange, most debtors haven't a prayer of meeting payments on the principal. But in 1987 a clever conservationist figured out how to turn this financial albatross into a golden-egg-laying goose. Environmental groups started buying Third World debt from banks for a fraction of its face value and donating the notes back to the debtor country. In exchange, that nation shows its good will by establishing nature preserves or hiring ecologists, often by selling bonds to investors. Now the debt swap is being expanded into causes beyond merely saving the planet.

The latest swap involves education. This month Harvard University announced that it will soon begin converting Ecuador's debt into funds that will support both Ecuadoran exchange students and the university's researchers. Harvard is exploring similar arrangements with Mexico, Argentina and several African countries. Other schools are getting into the act as well. The University of California, Los Angeles, eight Oregon colleges and six other schools are pooling their money to expand their own exchange programs, allowing their scholars to study South American rain forests and the Galápagos Islands.

IRA WYMAN FOR NEWSWEEK

The brighter side of an international crisis: *South American students at Harvard*

The transactions, which seem like the financial equivalent of a perpetual-motion machine, are based on the near worthlessness of the debt owed by developing countries. In the case of Ecuador, which owes $11 billion, lenders offer the I.O.U.s on the secondary market for 15 cents on the dollar, since they have little hope of getting any money back otherwise. Taking advantage of that markdown, Harvard will buy $5 million worth of Ecuadoran government debt for $750,000. It will donate the $5 million note to an Ecuadoran cultural foundation called Fundación Capacitar, which will return it to the nation's central bank in exchange for domestic bonds worth $2.5 million. Result: a bank will improve its balance sheet by $750,000 and Ecuador will have $5 million less external debt.

That's only the beginning. By selling the domestic bonds to local investors and putting the receipts into a scholarship fund, Capacitar will have enough interest income to support 20 Harvard scholarships for Ecuadoran students over the next decade. The rest of the interest income will enable 50 Harvard faculty and students to study in Ecuador. "There are no losers," exults Ned Strong of the Latin American Scholarship Program of American Universities, which has run educational exchange programs since 1964.

Much of the activity centers on Ecuador because its government is one of the few with a system for exchanging donated debt for local bonds. But as more nations come to appreciate the power of the swaps, predicts Jack Van de Water, director of foreign study for the Oregon college system, "we may see a lot more universities sign on the dotted line." The swaps will hardly dent the mountain of Third World debt, but they may enable poor nations to adopt social programs that they could never otherwise afford.

DEBRA ROSENBERG *and* LYDIA DENWORTH

SCIENCE

Discovering What Little Boys Are Made Of

Just where do males come from, anyway? Reports last week in the journal Nature offer the most convincing answer yet. Researchers have known since 1959 that the Y chromosome makes an embryo develop testes rather than ovaries. Once that occurs, the sexual die is cast: other male traits, from beards to baldness, stem from hormones made by the testes. Now biologists think they've found the actual gene, on the Y chromosome, that nudges an embryo toward maleness.

People with two X chromosomes are usually female; an X and a Y make a male. But sometimes an XX is male and an XY is female. By studying these exceptions, researchers narrowed the search for the maleness gene to a smidgen of the Y—a piece that was absent from an XY female's Y, but present on an XX male's X. Researchers at the Imperial Cancer Research Fund in London used biochemical scissors to chop this smidgen of human DNA into 50 bits; they then mixed those bits with DNA segments from other mammals, male and female. Because a trait as basic as maleness is expected to have deep evolutionary roots and thus can be shared across species, the bit that found a match in every male was the best candidate for the masculinity gene. In a second study, using only mice, a team at Britain's National Institute for Medical Research discovered a virtually identical maleness gene, in the Y chromosomes of the test rodents.

Is it *the* maleness gene? If inserting it into an XX mouse turns "her" into "him," it would indeed prove to be the only gene needed for maleness. Understanding how this gene works might yield insights into how a mere fertilized egg becomes a complete newborn—boy *or* girl.

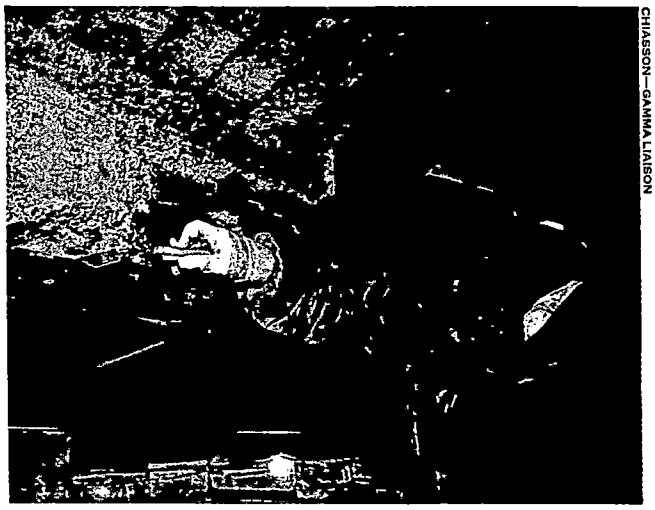
An Overblown Asbestos Scare?

The dangers are minimal in most buildings, says a new study

Lurking in ceiling tiles and insulation, wrapped around heating pipes and boilers, asbestos—that once beloved fireproof mineral, now dreaded as a carcinogen—is virtually everywhere in American buildings. Communities and companies around the country have been spending millions of dollars in a race to remove the lethal stuff. The Environmental Protection Agency (EPA) estimates that at least 733,000 public and commercial buildings and up to 45,000 of the nation's 100,000 schools contain asbestos in a potentially dangerous condition. While the cost of removing it could reach hundreds of billions of dollars over the next few decades, failure to do so would expose millions of children and other citizens to the prospect of an early, painful death.

Or would it? According to a report in last week's *Science,* the asbestos "crisis" is grossly exaggerated, and the public would do well to save its dread and its dollars. Says Brooke Mossman, a cell biologist at the University of Vermont College of Medicine and the lead author of the report: "Low-level exposure is not a threat to human health. The scare is unprecedented, and the amount spent on asbestos removal is ridiculous." In fact, say Mossman and her co-authors, removal often puts more asbestos into the air than was there in the first place.

The scientists agree that airborne asbestos can be deadly. It is a proven cause of mesothelioma, an incurable cancer of the membranes surrounding internal organs. It also causes asbestosis, a choking stiffening of the lungs, and it has been linked to lung cancer. Yet nearly all cases of asbestos-related disease have been confined to people who mined the mineral or those who worked with it in manufacturing or installation jobs. As for the general public, says Mossman, the level of exposure even in buildings with flaking asbestos is no more than 1% of the level deemed safe for workers.



CHIASSON—GAMMA LIAISON

A worker removes asbestos at New York's La Guardia Airport

In many cases, it would be both cheaper and safer to leave it.

The researchers note that some sorts of asbestos are far more dangerous than others and that the safest type is used almost exclusively in U.S. buildings. The bottom line: the risk of dying from smoking, drowning, airplane crashes or even playing high school football is 100 to 1,000 times as great as the risk of dying from asbestos exposure in buildings. "We have known this for two years," complains Mossman, "yet I can still pick up a newspaper that says it's a problem."

The public's fears have been fueled in part by EPA regulations that require school officials to inspect buildings for flaking asbestos every six months, notify parents if it is found and make every effort to contain or remove the material. "The law implies that they must do something about it, and that is not always right," says Mossman.

Government officials acknowledge that the scientists have a point. Says Charles Elkins, director of the EPA's office of toxic substances: "I would agree that in many cases removal is the wrong thing to do. It is a mistake for people to overreact. But it is also a mistake to say that asbestos is not a problem." In some situations, he says, simply blocking off an area or coating the damaged material with chemical sealants may do the trick. But asbestos insulation should probably be routinely removed from pipes in hallways, for example, to prevent passing children from dislodging it.

The *Science* authors do not oppose all asbestos removal, but they contend that it should be done only when the level and type of airborne particles are clearly hazardous. Given the cost of asbestos removal—$20 or more per sq. ft., or 100 times the price of installing it—that argument should be a weighty one for policymakers. —**By Michael D. Lemonick. Reported by Andrea Dorfman/New York**

Education

Short Change

Blasting Bush on funding

George Bush has no patience for those who accuse him of stinting on public education. As he told Governors last fall, the U.S. "lavishes unsurpassed resources" on schooling. Last week that claim was strongly challenged by the Economic Policy Institute (E.P.I.), a Washington-based think tank. In a 29-page report based on data published by the Federal Government and the United Nations Educational, Scientific and Cultural Organization, the institute concludes that the U.S. spends relatively less on elementary and secondary education than 13 other industrialized countries, including Japan, West Germany, France and the Netherlands.

According to the report, *Shortchanging Education,* only Ireland and Australia invest less than the U.S. in basic education in terms of a percentage of gross national product. Of the 16 countries studied, Sweden spends the most (7%), followed by Austria (5.9%), Switzerland (5.8%), Norway (5.3%) and Belgium (4.9%). Denmark and Japan tied at 4.8%, while the U.S. spends only 4.1%. "If the U.S. were to increase spending for primary and secondary school up to the 'average' level found in the other 15 countries," the study says, "we would need to raise spending by over $20 billion annually."

The report charges that Bush's claims of largesse are misleading because his figures are inflated by the hefty public and private sums spent on colleges and universities. With this spending included, the U.S. places second among the countries surveyed. But when money for higher education is not included, the U.S. falls from second to nearly last. That low ranking is all the more disturbing, the report maintains, because the "current crisis in American schools" is centered in the elementary and secondary grades.

The Bush Administration is not amused by E.P.I.'s new math. An Education Department rebuttal says the institute has mixed "apples, oranges and moonbeams to produce an indigestible concoction." By measuring education spending as a percentage of national income instead of comparing dollars spent, it says, E.P.I. uses a methodology that is "seriously flawed." But the study does, in fact, compare per pupil expenditures as well. Result: the U.S. comes in ninth out of 16. "No matter how you do it, we're a low spender," says Lawrence Mishel, co-author of the report. "We're definitely not as Bush claims. We don't spend lavishly on our kids." ■

EDUCATION

I Hear America Scratching

The SATs will require more thought but no writing

They were at it again last weekend, the flower of America's youth, bent over test papers, scratching in answer boxes as though their lives depended on it. And they did, for this was the inexorable fall ritual known to six decades of students as the college boards. Each year more than 2 million kids take the Scholastic Aptitude Test and companion achievement tests, the scores of which allow admissions offices to decide among the fuzz-faced supplicants at their gates. Such clout has inevitably brought criticism of the tests' accuracy and fairness. After three years of study by the College Board, a blue-ribbon panel announced changes last week which will significantly alter the exams but stop short of requiring that most frightening of prospects: a mandatory essay.

The revisions will take effect in 1994. The biggest change is in the mathematical questions on the aptitude test, which will be renamed the Scholastic Assessment Test, or SAT I. About 15 of the 60 math questions will require computation and short answers; there will be no multiple choices to pick from. Students will be allowed to use calculators. "That begins to send a message to schools that it is the problem-solving ability that is important and not just the ability to select the correct answer," says retiring Harvard president Derek Bok, cochairman of an advisory panel of 15 educators who reviewed the changes.

The verbal section of the SAT I will test more vocabulary in reading passages and drop some isolated word exercises; the antonyms, for instance, will be excised. The achievement tests, which aren't required by all colleges, will be renamed the SAT II. The 15 one-hour-long tests of subject areas will be expanded to include language exams in Japanese and Chinese, a non-Western history test, an English-as-a-second-language exam, a test of basic subjects for students who aren't high achievers and, for those hearty few, a writing test that will include an essay.

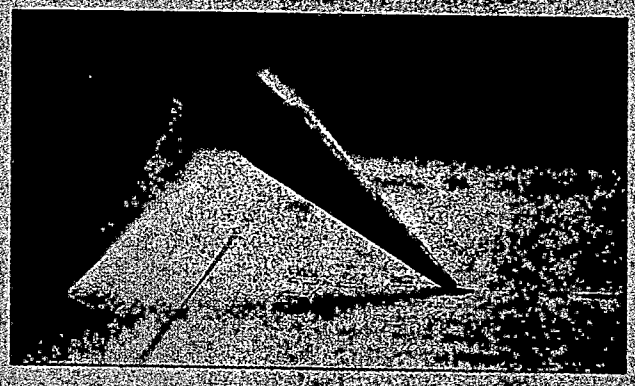
Some educators are disappointed that the SAT I will not include a mandatory written-essay question. "I think the College Board was aware of considerable constituencies for whom English is not their first language who feared that this would harm them," says Fred Hargadon, Princeton's admissions director. "But we really can't overlook that English is still the medium of instruction, and at some point to be successful it has to be mastered." Over the past three years, field tests included experimental essay questions. In the academic community it had been assumed that after more fine-tuning, essays would become part of the standard regimen. Many officials objected, however, particularly in California, which has a large and fast-growing immigrant population. The opposition was led by Patrick Hayashi, associate vice chancellor at the University of California, Berkeley. "I support an essay," he says. "I just didn't think it had been adequately field-tested or thought through."

This was more than talk. Last month a committee of the California Legislature held public hearings on the SATs, a thinly veiled reminder that the public campuses in the nation's largest state could drop the exam. "I hope that the hearing provided at least a catalyst for the College Board to consider that they are no longer operating in a vacuum," says state Sen. Art Torres. In his view, the Educational Testing Service, which administers the SAT, will have to explain publicly its policies and their effects on students. The Californians prevailed, and the mandatory essay was dropped. Says Donald M. Stewart, president of the College Board, "One of the guiding principles of our explorations has been an absolute commitment to guaranteeing the fairness of the SAT."

The College Board hopes to put more of a premium on critical thinking and mathematical computation, making the SATs less susceptible to coaching and more relevant to classroom learning. But critics argue that the revisions don't address the test's real flaws. They charge that such multiple-choice tests don't accurately assess student ability and are biased against women and minority groups; they'd rather scrap the exams. "The changes are just polish," says Bob Schaeffer, public-education director at FairTest, a Cambridge, Mass.-based advocacy group. "It's adding new tail fins to the Edsel." That may be, but in the meantime, prospective Ivy Leaguers will have to keep sharpening their pencils and drying their palms.

CONNIE LESLIE *with* DEBRA ROSENBERG *in Boston*

Questions and Answers



Math questions on the aptitude test require computation. The verbal part drops some word exercises like antonyms and includes more critical reading passages.

Math Question

If the average (arithmetic mean) of four numbers is 37 and the average of two of these numbers is 33, what is the average of the other two numbers?

Verbal Question

The domestic cat is a contradiction. No other animal has developed such an intimate relationship with humanity, while at the same time demanding and getting such independent movement and action.

According to the above, why is the domestic cat a "contradiction"?

A. It generally gives the appearance of being aloof and arrogant but is actually quite dependent on its owners.

B. It relies on human beings for survival but does not become attached to them.

C. It lives comfortably with humans but avoids being dominated by them.

D. It survives as well in the wild as in captivity.

E. The wildcat is a solitary creature but the domestic cat becomes attached to its human owner.

ANSWERS: 41; C

SOURCE: EDUCATIONAL TESTING SERVICE

The Test That Everyone Fears

A major revision shakes up the all-important SATs

Seldom has a warning been so baldly ignored. Back in 1926 the nonprofit College Board introduced the Scholastic Aptitude Test with a cautionary observation: "This additional test," said the board, "should be regarded merely as a supplementary record. To place too great an emphasis on test scores is as dangerous as the failure properly to evaluate a score."

So much for caution. In test-happy America, the SAT has since become a kind of academic icon and a national rite of passage for college-bound high school students. Every year more than 1.3 million of them take the 2-hr., 30-min. multiple-choice exam, which is intended to measure students' reasoning skills, math and verbal, as well as their readiness for college. High SAT scores—perfection is 800 on each half of the exam—have acquired the cachet of quality. Suburbs lure prospective home buyers by touting the SAT records of their high schools' graduates. Colleges boast of the high average scores of their incoming freshmen; nearly 1,600 U.S. colleges and universities, including the Ivy League élite, rely on SAT results.

Nonetheless, complaints abound. Critics of standardized testing have long charged that the SATs contain built-in cultural and class biases, which put women and minorities at a disadvantage. They claim that the multiple-choice questions do not effectively gauge students' critical thinking skills or their future potential.

Partly to deflect the growing unhappiness, trustees of the College Board last week revised the SAT, although less radically than some critics had wanted. Starting in 1994, the SAT and its companion Achievement Test will be known as SAT-I and SAT-II. The former will test verbal skills and reasoning ability in math; the latter, knowledge of certain specific subjects, such as history and politics. SAT-I will include longer critical reading passages and more questions to test students' understanding of the material.

In the math portion, test takers will have to work out the answers to several problems rather than merely make a multiple-choice selection. They will, however, be allowed to use hand-held calculators. The optional SAT-II will include a 20-min. essay as well as a world-history test.

Harvard University President Derek Bok was chairman of a commission that recommended the changes. The revision, he says, "begins to send a useful signal to schools that problem-solving ability is important, rather than simply the ability to identify the correct answer from a predetermined list." But Bob Schaeffer of the National Center for Fair and Open Testing, a longtime critic of the SAT, charged that the board had failed to deal with the verbal section's analogy problems, which frequently make unconsciously élitist, racist or sexist assumptions about the backgrounds of those taking the test. On one recent test, nearly 16% more men than women were able to select the right analogy to "mercenary: soldier" (hack: writer).

Many educators argue that high SAT scores are no more accurate a predictor of academic success than high school class ranking or grade averages. They also charge that SAT success can be learned, pointing to cram schools that promise, for substantial fees, to raise students' scores by 100 points or more. After a two-year study, Dr. Stuart Katz, a University of Georgia psychologist, concluded last March that the verbal section of the SAT measures test-savvy, not reading ability. He found that 172 college students correctly answered, on average, 38% of the multiple-choice comprehension questions without even reading the test selections. Many colleges, notably in the Midwest, are turning to the rival ACT exam, put out by the American College Testing Program. That 3-hr. battery of exams claims to measure student skills in four curriculum areas: English, reading, science reasoning and math.

The SAT revisions have again focused attention on what one critic, author David Owen, has called "probably the most powerful unregulated monopoly in America": the Educational Testing Service of Lawrence Township, N.J., which prepares the exams for the College Board to administer. And not just the SATs. A nonprofit corporation, ETS is by far the nation's largest private educational assessment service, offering a variety of tests that range from electrology to law to the federally sponsored National Assessment of Educational Progress, which measures student achievement in seven subjects. Founded in 1947, ETS has a serene, campus-like headquarters near Princeton University, a staff of 2,960, more than 270 clients (including the Federal Government), gross revenues of $299.7 million—and seemingly boundless ambitions.

"Our traditional mission has been to place ourselves at the transitional points of education between high school and college, college and graduate school," says ETS president Gregory Anrig, 58, a former teacher and commissioner of education for Massachusetts. "Now we are expanding

Multiple choices in the old SAT

1 A "weather watch" camera is set so that its shutter opens every 31 seconds. At this rate, approximately how many times does the camera's shutter open in one hour?

(A) 12 (B) 91 (C) 116 (D) 1,200 (E) 1,800

A B C D E

2 Choose the word that is most nearly opposite in meaning to the word in capital letters.

PARITY

(A) ruthlessness (B) indecision (C) inequality (D) unpreparedness (E) forfeiture

A B C D E

Answers: 1 (C); 2 (C)

Open questions in the new SAT

1 Martin and Alice buy newspapers for $0.20 each and sell them for $0.25 each. If, at the end of one week, Martin made a profit of $12.60 and Alice made a profit of $18.75, how many more papers did Alice sell than Martin?

The answer as shown on the new form

	1	2	3
	/	/	
.	.	.	.
0	0	0	0
1	●	1	1
2	2	●	2
3	3	3	●
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

2 "Everything has its cost"

Assignment: Choose an example from literature, current affairs, history or from personal observation in which a cause, an ideal, or an object had to be paid for at some cost. What was that cost? Was what was gained worth it or was the cost too high? Give reasons for your position.

TIME Chart

into more and more programs that help kids to learn and teachers to teach more effectively."

In fact, ETS is moving as aggressively as a for-profit corporation would in seeking to expand its business. Among other things, the service is using computers and interactive video in new grammar-school courses that are designed to advance critical-thinking skills. In a program currently under development in Brookline, Mass., students play reporters who "investigate" a story from classical mythology under the direction of a computerized editor and their homeroom teacher. Then the youngsters write a story on what they have discovered. ETS is also working with computers to redesign the National Teachers Exam, used in 34 states to license prospective educators. The company's proposed test for fifth-grade math teachers would measure not only the exam takers' knowledge of the subject but their understanding of how fifth-graders learn.

ETS officials deny that the SATs propagate inequity and reflect bias. The fact that upper-income whites score higher than lower-income minorities, they contend, reflects society's imbalances, not the exams'. ETS notes that 400 people of varying backgrounds check every SAT question during 10 review stages and eliminate any that are found to be biased. "To say these tests are biased because results vary," says Gary Saretzky, chief of ETS's sensitivity-review process, "is like blaming the thermometer for the fever."

Perhaps the strongest criticism of ETS is that its zealous promotion of standardized testing emphasizes minutiae at the expense of mind stretching. "In some inner-city schools, kids don't read whole books," says Arthur Weiss, president of the National Council for Accreditation of Teacher Education. "They spend all their time learning how to read three paragraphs and answer multiple-choice questions." Anrig concurs. "You don't need to test a child every three months to see whether he can read," he says. "It's like pulling up a carrot to see if it's growing."


MARIO RUIZ FOR TIME

Anrig of ETS

His concern is a major reason why ETS is devoting more of its energies to curriculum development. On tests there may be instant answers, but not in the learning process. It may take years before educators can decide whether Anrig and his colleagues have created new solutions or compounded old problems for America's troubled schools. ***—By John Elson. Reported by Joelle Attinger/New York, with other bureaus***

THE WASHINGTON POST

SAT Being Revised to Lengthen Reading Passages and Alter Math Questions

... THURSDAY, NOVEMBER 1, 1990 A19

By Kenneth J. Cooper
Washington Post Staff Writer

The Scholastic Aptitude Test, the most widely used college entrance examination, will be revised to better measure critical thinking and problem solving skills, the College Board announced yesterday.

The revised SAT will include longer reading passages designed to make students think more deeply about comprehension questions and it will reduce the number of multiple choice questions by requiring students to produce their own answers to some math problems.

An estimated 1.3 million high school students take the SAT each year. A competing test, the American College Testing Program (ACT), is popular in western states and was revised a year ago.

College Board trustees decided at an annual meeting in Boston against another proposal to add an essay section to the test, a change that Asian-American and Hispanic educators charged would be unfair to students who did not learn English as their first language. The trustees instead opted to create a new writing test as part of the achievement tests, given in individual subjects, that far fewer colleges require and are taken by only 350,000 students.

The SAT revisions will constitute the most significant changes in the 2½-hour exam since 1974, according to College Board president Donald M. Stewart.

The trustees approved the latest SAT changes, scheduled for the spring of 1994, after three years of study, including reviews by a panel of 15 educators headed by Derek Bok, president of Harvard University, and David Gardner, president of the University of California system. During its deliberations, the panel considered persistent accusations of racial and gender bias in the SAT.

Stewart, who is black, denied the revisions were being made in response to the charges of bias. The board has consistently attributed the lower average scores of women and minorities to differences in preparation.

"The SAT has been in almost continuous evolution. It has never been set in concrete," Stewart said at a news conference.

Bok said one goal of the panel was "to make the tests conform more closely to the actual skills used in the classroom in our colleges." He said the planned inclusion of math questions that require students to produce an answer, for instance, underscores the importance of problem-solving skills and "tends to discourage the more trivial kinds of coaching."

The revised SAT will include 10 to 15 math questions that will require students to produce answers, reducing the number of multiple-choice problems from 60 to 40 to 45. The College Board also will allow students to use calculators, a practice commonly permitted at many colleges.

In the verbal section, there will be more reading comprehension questions and the passages on which they are based will be longer. One set of questions will involve two longer passages that take different points of view on the same subject.

In addition, 25 questions on antonyms will be dropped.

Similar math and reading changes will be made in the Preliminary Scholastic Aptitude Test (PSAT), which is taken early in high school and used to award National Merit and National Achievement Scholarships. Some colleges also use lists of top scorers on the PSAT for recruiting.

Gregory Anrig, executive director of the Educational Testing Service in Princeton, N.J., which administers the SAT on behalf of the College Board, said the scoring system will remain the same. The maximum score is 800 on each section on verbal and math skills, for a total of 1600.

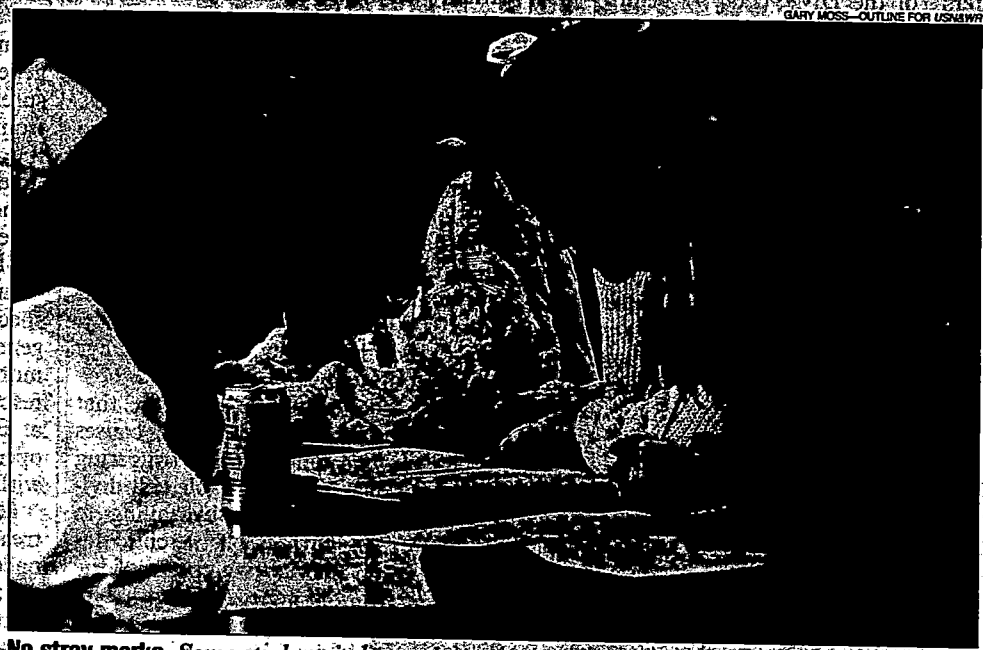
The revisions did not appear to placate critics of the SAT, who have said that the tests are biased and inaccurate predictors of college success.

The National Center on Fair & Open Testing, a group opposed to standardized testing, dismissed the revisions at a news conference immediately after the College Board's.

"FairTest concludes that the new SAT amounts to little more than rearranging the deck chairs on an educational Titanic," said Robert Schaeffer, the group's public education director. "None of these changes address the SAT's real flaws."

Putting a new SAT to the test

EDUCATION ■ Changes in the beleaguered multiple-choice exam may force students to think



GARY MOSS—OUTLINE FOR USN&WR

No stray marks. *Some students take costly prep courses to improve SAT scores*

The Scholastic Aptitude Test is an American institution. Every year, millions of anxiety-ridden college hopefuls set their alarms for a Saturday wake-up and troop into gymnasiums across the country, No. 2 pencils in hand, to see how they stack up academically.

Now, for the first time since its inception in the 1920s, the familiar multiple-choice format associated with this American rite of passage is headed for a radical revision. Reacting to mounting criticism of the test's effectiveness and fairness, the College Board, the nonprofit membership organization of 2,600 schools and colleges that sponsors the test, and the Educational Testing Service (ETS), which administers it, have after three years produced a blueprint for change. Arguably the most important proposed revision would require students to write an essay, which together with a multiple-choice section would add a third score, writing, to those for verbal and mathematical skills. The future SAT would also eliminate the test's multiple-choice format in up to 20 percent of its math questions, revamp several other types of questions and add a substantial measure of interpretation to the scores.

Longer, costlier. The revisions, which were field-tested on 60,000 students in 1,000 schools last spring and found to be technically doable, are expected to add up to 30 minutes to the 3-hour exam and increase its $14.50 price tag by perhaps 50 percent.

The team of nearly three dozen ETS and College Board researchers who are working on the organizations' joint revision effort is scheduled to present its recommendations formally to the College Board's board of trustees next fall. But their proposals have strong backing and look to be a *fait accompli.* Robert McCabe, chairman of the College Board, says that there are technical and logistical matters yet to be resolved—figuring out how to score millions of essays quickly, for instance—and that it will be next spring before the board has the results of a study of 15,000 college freshmen designed to ensure that the new SAT accurately predicts students' first-year college performance, which is the SAT's primary purpose. But McCabe, who is president of Miami-Dade Community College, says that the response to the proposed revisions has been "overwhelmingly" favorable among the board's many policymaking councils and committees, and he expects the new version of the SAT to be adopted next year. If it is, students may be grappling with the new test as early as the 1992-93 school year.

Although the ETS has made piecemeal changes over the years to make the test a better predictor of college performance, as well as fairer to women and minorities, the test's basic structure has remained largely unchanged since it was designed in 1925 (see box). As did earlier versions of the exam, the SAT measures general verbal and math reasoning skills using multiple-choice questions involving antonyms, analogies, sentence completions, reading comprehension and basic arithmetic, ge-

Beyond multiple choice

The two most dramatic revisions under way in the SAT are the addition of a 20-to-30-minute written essay and "open ended" math questions. Designed to measure students' grammar skills and their ability to argue a point of view cogently, the essays are expected to be scored by two trained graders.

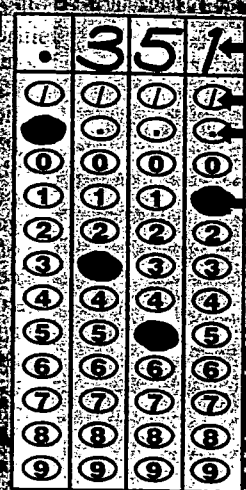
MATH

Answers should be written as far to the right as possible. No more than four columns are needed to answer these questions. All answers are positive.

Answers are either whole numbers, fractions or decimals. An answer such as 1/2 can be written as either .5 or 1/2.

Written as a decimal, what is the value of

$$\frac{1}{1{,}000} \times \frac{3}{10} \times \frac{5}{100} = ?$$



ESSAY

Assignment: To what extent do you agree or disagree with the familiar saying below? In formulating your response, consider how you might apply the saying to a field such as history, literature, art, music, architecture, science, psychology, medicine, education or current affairs.

"The more things change, the more they stay the same."

USN&WR—Basic data: Reprinted with permission of Educational Testing Service

ometry and algebra. The SAT was divided into math and verbal sections in 1929.

The SAT is currently at the peak of its influence—in terms of the numbers of students taking it—and at its most beleaguered. Driven by a demand for greater accountability in the nation's educational system, many standardized tests, including the SAT, are being used as both "carrots" and "sticks" by an increasing number of states attempting to prod the nation's schools into improved performance. Merit pay for teachers, financial-incentive programs for schools and new state-funded scholarship programs all are being tied to test scores. Last month, New Jersey became the latest state to issue annual "report cards" on its schools. The parents of every student in the state's 2,174 public schools received a publication showing the schools' performances using a range of criteria, including average SAT scores. The accountability movement has expanded the reach of the test beyond the college-bound and pushed the number of SAT takers to more than 2 million a year.

But individuals and organizations, ranging from Georgetown University's outspoken basketball coach John Thompson to mainstream educational organizations such as the Carnegie Foundation for the Advancement of Teaching, have hammered at the SAT in recent years for being biased against women and minorities, for offering colleges little predictive information not already available from school transcripts, for promoting high-school instruction that is little more than SAT prepping, for affording an unfair advantage to affluent students able to pay for expensive coaching, and for being an inappropriate measure of school performance. Earlier this year, a federal judge overturned a New York State scholarship program on the grounds that the program, by awarding scholarships strictly on the basis of SAT scores, discriminated against women.

Such criticisms have in recent years prompted several leading liberal-arts colleges, including Bowdoin, Colby, Middlebury and Union, to drop their requirement that applicants submit SAT scores. At Union College in Schenectady, N.Y., 25 percent of the applicants have chosen not to submit SAT scores since the test became optional in 1987, and although those students typically had SAT scores 150 points lower than those of students who submitted their scores, the school has found that the grades of the students in the two groups are virtually identical at the end of their freshman year.

The College Board has rejected many of the charges against the SAT, arguing that its test is not biased, that coaching has a minimal impact on scores (several years ago, it dropped its claim that prep courses have no influence on scores), and that the SAT supplies college admissions officers with a valuable supplement to students' grades and transcripts. But many of the pending changes in the test clearly seek to respond to recent criticisms. The new essay, for example, will render coaching less valuable, and together with the open-ended math questions it will begin to address the charge that the multiple-choice SAT downplays "higher order" skills such as problem solving and writing. The College Board says the more detailed interpretations of students' scores (it plans to publish descriptions of the skills reflected in each 100-point increment) will make the SAT more useful to colleges in academic counseling.

Revisions in the SAT follow more-modest shifts in the nation's second major college-admission test, the Iowa City-based ACT Assessment, taken annually by 1.3 million students, primarily in the Southeast, Midwest and Rocky Mountain states. The new ACT, with its increased emphasis on inferential abilities, was unveiled in October.

The new SAT surely will not assuage all of the test's critics, particularly those who believe it is flawed by gender and racial bias and those who maintain that a series of subject-based achievement tests is a needed signal to the nation's high schools to strengthen their academic instruction. But the new blueprint for the SAT does take a significant step in tying the single most influential test in the nation more closely to important skills such as writing and problem solving. ■

by Thomas Toch

FROM ELITISM TO EFFICIENCY

The SAT's dubious origins

The beginnings of the Scholastic Aptitude Test, which was first administered in 1926, were less than auspicious. The test was drafted under the sponsorship of the College Entrance Examination Board, an organization founded in 1900 by a group of elite Northeastern colleges and prep schools to promote a common high-school curriculum for college-bound students. To help establish admissions standards based on the new curriculum, the board in 1901 began sponsoring essay-style achievement examinations in Latin, history, physics and other classical subjects considered essential preparation for the rigors of college academics.

By the early 1920s, intelligence testing, a field pioneered in France at the turn of the century, was gathering momentum in the United States, and the board decided to commission [illegible] to be used in college [illegible] 1926, it named a committee [illegible] ton psychol- [illegible] Brigham, a fu- [illegible] ental-measure- [illegible] the exam- [illegible] structure of a [illegible]

COURTESY EDUCATIONAL TESTING SERVICE

Early bias. *Brigham*

multiple-choice test that he had helped administer to thousands of World War I recruits, created the SAT.

But the military tests that Brigham drew on were badly flawed as measures of mental ability. Culturally biased questions were commonplace. One example: "Crisco is a a) patent medicine b) disinfectant c) toothpaste d) food product." Furthermore, Brigham himself argued in a 1923 treatise known as *A Study of American Intelligence* that the results of the so-called Army Mental Tests were evidence that blacks and recent immigrants from Eastern and Southern Europe were intellectually inferior to "Nordic" races.

Nonetheless, the CEEB hired Brigham to design its entrance exam.

Since then, the board has worked to eliminate the cultural bias of Brigham's test. But as the number of colleges making use of the SAT grew and students with increasingly diverse academic backgrounds began taking the test, the board became wedded to the SAT's efficient multiple-choice structure. By the 1940s, it had completely phased out its essay examinations.

Newsweek EDUCATION 1/8/90

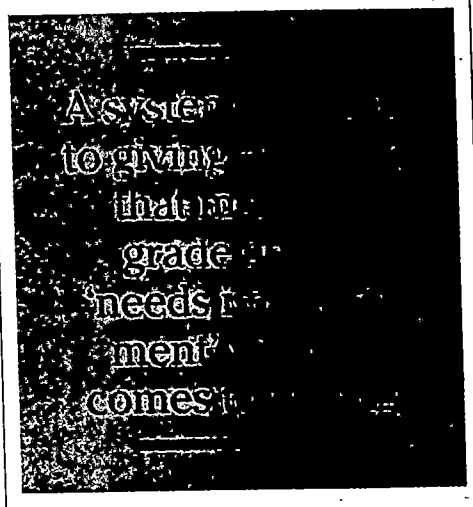
Not as Easy as A, B or C

We need to produce students who know how to think. And we need new tests to help us.

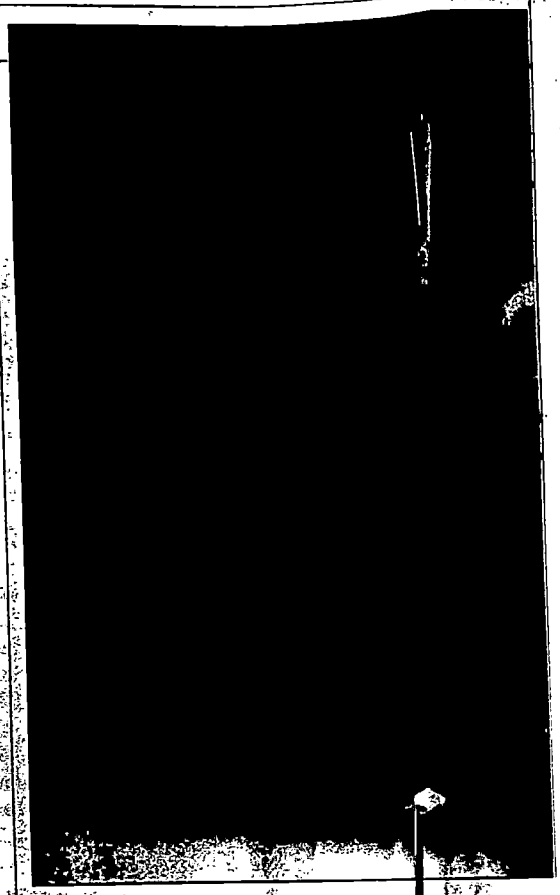
Since last September's national education summit in Charlottesville, Va., a committee of governors and White House staff members has been meeting in Washington to define the nation's educational goals. The panel hopes to flesh out its list this month, just in time for President Bush to include it in his State of the Union address to Congress. That's the easy part: *everyone* favors reducing the dropout rate and encouraging local creativity. But for once, *everyone* also recognizes that platitudes won't be adequate to the task. The hard part will come later when the committee is expected to propose a national yardstick that will enable Americans to know how their students and schools are faring. "The big question," says committee cochairman Carroll Campbell, the governor of South Carolina, "is how do you measure success—against what test?"

For educators, particularly those bent on reform, that is the question for the 1990s. It is, of course, no small irony that a system devoted to testing any child old enough to sit still now stands accused of gross failure of tests. Depending on the critic, the nation's vaunted standardized exams: (a) measure the wrong skills; (b) distort classroom instruction; (c) falsely reassure parents; (d) discriminate against the underprivileged. The push for better tests comes from several sources. Elected officials are demanding more from the education mandarins and need a way to hold them accountable. Parents, from Miami to Chicago, are being invited to share in the management of neighborhood schools; they, too, are unwilling to rely on the tyranny of anecdote or true/false quizzes. And employers say they no longer want people who have mastered just the basics—although some days they wish they had more of them—but they need people who can think. In short, the consumer movement has finally entered the schoolhouse. "Newspapers rank schools and districts by their test scores; real-estate agents use test scores to identify the 'best' schools as selling points for expensive housing; school superintendents can be fired for low scores, and teachers can receive merit pay for high scores," says Lorrie Shepard, an education professor at the University of Colorado.

Forty-two states give mandatory achievement tests. Some, like New York and California, develop their own tests. Others use one of four leading commercial brands. In addition, many local districts and even individual schools require standardized exams on their own. And the federal government's National Assessment of Educational Progress (NAEP) regularly tests a small random sample of fourth, eighth and 12th-grade students nationwide. A recent study by FairTest, a Boston-based advocacy group, found that U.S. public schools administered 105 million standardized tests

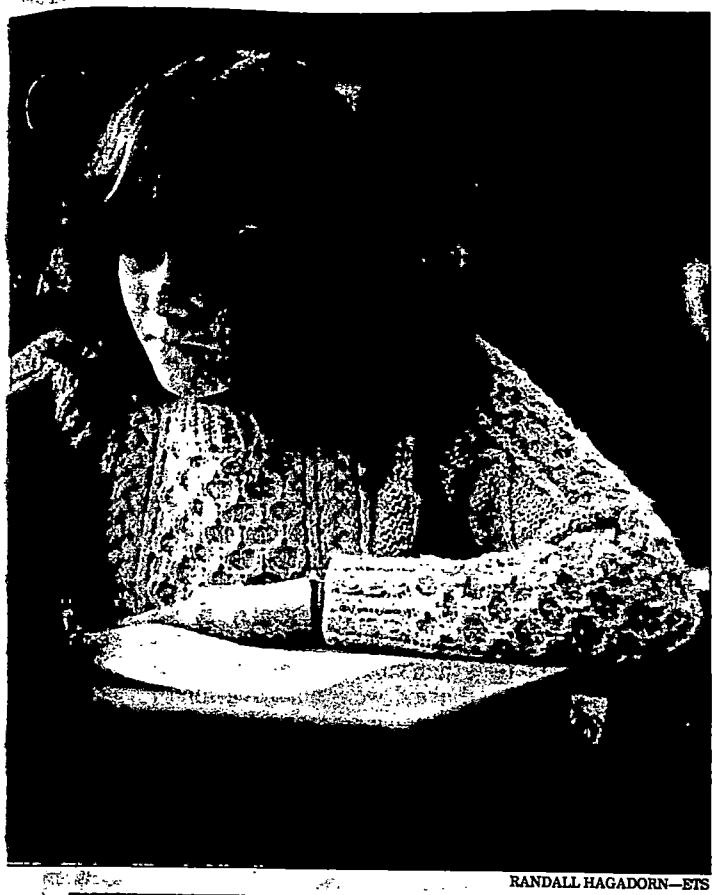


to 39.8 million students in the 1986-87 school year alone—an average of more than 2.5 standardized tests per student per year. But for all the many choices, says Ernest Boyer, president of The Carnegie Foundation for the Advancement of Teaching, "Most of our current efforts at assessment have been woefully inadequate, fragmented and even destructive."

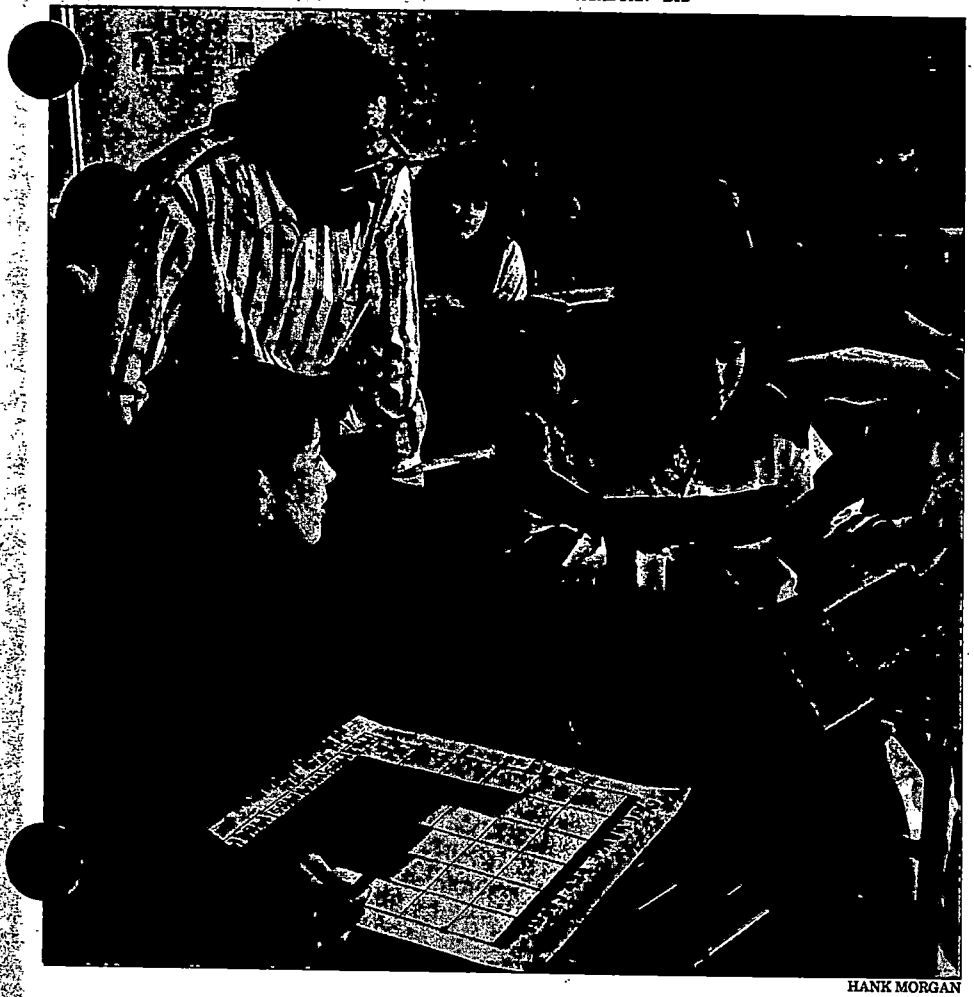


Consider the "Lake Wobegon" effect, named after Garrison Keillor's fictional town where "the women are strong, the men are good looking and all the children are above average." After years of treating troubled West Virginian adolescents whose problems invariably included poor academic performance, physician John Jacob Cannell wondered why the local schools claimed that his patients had high scores on their nationally normed standardized tests. Cannell requested test scores from all 50 states. He discovered that each one claimed to be "above the national average" or the statistical "norm." Cannell has filed a complaint with the Federal Trade Commission charging the four leading commercial-test publishers with deceptive trade practices.

What explains Lake Wobegon? Test publishers only update their norms when they create a new edition of a test, usually every seven years. In the meantime, students are compared to a national standard that is sometimes more than half a decade out of date. If achievement is improving nationally, the use of old norms will make a district appear to be doing better than would the use of current norms. The better scores may not be due to better learning: some savvy schools now give classes in testing skills. And some teachers and principals now engage in outright cheating. For example, last spring, a Greenville, S.C., high-school teacher discovered a student



RANDALL HAGADORN—ETS



HANK MORGAN

Bring two sharpened No. 2 pencils or bring your imagination, your analytical powers and your judgment: *Multiple-choice test (left), Harold Baker and his students in Connecticut (below)*

cheating on a test. Teacher Nancy Yeargin, considered by colleagues to be one of the best teachers in the school, admitted that she had distributed the questions and answers two days before a standardized exam to two low-ability geography classes. She was fired and prosecuted under a South Carolina law that makes breaching test security a crime. Yeargin avoided spending 90 days in jail by pleading guilty last September and paying a $500 fine. Clever administrators needn't go that far; instead some simply encourage slower pupils to be absent on the day of an exam.

A team of education professors from UCLA and the University of Colorado recently completed a more scientific version of Cannell's study that compared student test scores from various states. They found Cannell is essentially correct. But they don't have a simple solution. "The problem is that too much is being expected of these tests," says Robert Linn, a professor of education at the University of Colorado.

Even worse, says Linn, is that these tests skew the teaching process itself. Studies have found ample evidence that the anticipation of achievement tests narrows the curriculum and constrains both teachers' and students' creativity. A study by Linda Darling-Hammond, a professor of education at Teacher's College, showed that teachers stick to the exact content of the tests rather than underlying concepts. Their classrooms become parade grounds where students are endlessly drilled in multiple-choice questions that impart information without context. According to Shepard, that's shortsighted and counterproductive. Cognitive psychology teaches that children learn better by doing tasks, seeing for themselves how concepts are connected to one another. And those kids, she says, do better on the skills tests than the ones forced to drill their days away.

Held back: Disadvantaged students and minorities have the most to lose when the curriculum is driven by proficiency on achievement tests. Many score low on standardized tests because of a supposed cultural bias built into questions by the mostly white middle-class test publishers. Once children are labeled low achievers, says Monty Neill, FairTest associate director, "these students are held back or placed in special education or remedial programs or in some states denied graduation. These children are being denied a true education."

The growing dissatisfaction with most standardized tests has led to a search for alternatives. For large-scale assessment, some experts favor expanding the federally funded NAEP. Over its 20-year history, NAEP has earned an enviable reputation among educators. It's a test that combines multiple choice, essay and problem-solving questions. It's given on a random basis, to

only a few kids in any classroom; teachers, then, can't "teach the test." And its norms were developed so carefully that they're trusted. However, until recently federal law prohibited the use of NAEP scores to compare states or districts. Congress finally permitted an experimental state-by-state comparison of scores for the eighth-grade math test in 1990. So far 37 states have agreed to participate.

The NAEP board would like to expand the comparisons across the board but some educators fear that will inevitably ruin the test. "If NAEP scores become so important to educators and policymakers that classroom instruction is tailored to it, its value as an indicator of achievement will be threatened," says Daniel Koretz, an analyst at the Rand Corporation. NAEP board chairman Chester E. Finn thinks the nature of the test procedure will prevent that from happening. "We've got a very good instrument and we've got an enormous appetite for information on how much kids are learning," he says.

If the reformers have their way, the future will not be a multiple-choice test. "The U.S. is the only nation that relies so heavily on multiple-choice tests for large-scale assessments. Most countries we compete with in Europe and Asia that outachieve us use essays, oral exams and exhibits of students' work," says Darling-Hammond. Some individual states are experimenting with a progressive track called performance-based testing, which they hope will become the national model (following story). Even NAEP is now mostly multiple choice, and the board has recommended expanding the performance part of the test.

The current reform movement began with a zealous drive to return to basics. "We weren't asking how children learn best, we were asking how do we teach them so they test well," says Boyer. "Then we emphasized testing without asking the crucial question of what we were trying to measure." Test scores *have* improved but that turns out to be a rather empty victory. If the goal of education is to turn out people who can think, we need tests that will help us reach that goal. Without that aid, we're not flying blind but peering through a glass darkly.

CONNIE LESLIE *and* PAT WINGERT

LARRY DOWNING—NEWSWEEK

Goose happy: *Preparing for a writing exam in the second grade*

Much More Than Filling in the Blanks

When Connecticut teacher Harold Baker tests his Litchfield High School math students, he wants them to do a good deal more than choose among answers A, B, C or D. He wants them to think about a task related to daily decisions they must make in real life and come up with a step-by-step, well-reasoned solution. He might ask students to pick a stock. Using their knowledge of fractions, percents and graphs, students must chart the relationship between the dividend and the stock's price and calculate the price-earnings ratio. "You can't pass this kind of test without understanding math, without doing some thinking," says Baker.

Along with math and science teachers from six other states, Baker is trying to create a new model for standardized tests. Funded by the National Science Foundation, educators hope these "performance-based tests," as they are called, will not only cut down on rote memorization but also will change the way lessons are taught. Joan Boykoff Baron, the Connecticut state assessment coordinator, says that the more real-life tasks that are included on tests, the more time teachers and students spend in practicing and perfecting [illegible]

[illegible] changed in important ways. [illegible] and second graders are encouraged to write stories [illegible] their own experiences [illegible] spelling words as they [illegible] they learn the cor[illegible] that age, it's [illegible] important to write [illegible] than to be able [illegible]. In later grades, [illegible] has left its ghetto [illegible] now incorporated into [illegible] on writing skills. "We [illegible] writing more now," [illegible] Dorothy Nave, assist[illegible] school superintendent of [illegible] County, Md. And [illegible] says, it's taught stu[illegible] to value themselves, too. "Better writing in[illegible] their self-esteem."

[illegible] performance testing [illegible] in the offing. Connecticut [illegible] been experimenting with [illegible] of learning exam for [illegible] school students that will [illegible] their parents [illegible] complicated [illegible] project [illegible] The [illegible] will [illegible] creative, [illegible] high-school [illegible] graduates. If not, it's back to [illegible] multiple choice.

Connecticut's proposed [illegible] force students to think [illegible] abbreviated version of one tes[illegible] can you really tell which mar[illegible] money? Your assignment [illegible] to answer the problem. The pro[illegible]

1 Write a report that outlines [illegible] problem. What markets will you [illegible] How and why did you make you[illegible] records will you keep? How [illegible] Keep a log reporting the progr[illegible]

2 Form a research group wit[illegible] meet twice in class to compa[illegible] op a final, written research [illegible] comments and grading. [illegible]

3 Carry out the study, with each [illegible] a portion of the work. Hand in [illegible] The report should restate the prob[illegible] explain how the data was collected [illegible] include graphics that will illustrate your [illegible]

The NCAA Tries Again

What rules for colleges and their student athletes?

Early on the morning of Jan. 27, Ed O'Bannon, one of the nation's most recruited high-school basketball players, will face his biggest challenge. But it won't be on the gym floor. The 17-year-old senior from Lakewood, Calif., will step to the line and take the two-hour test that may well determine his academic and athletic destiny. Under a controversial rule passed by the NCAA last January, if he doesn't score at least 700 out of 1,600 on the Scholastic Aptitude Test (SAT)—as well as keep his grade-point average at 2.0 or higher—he'll be ineligible to play as a college freshman or get scholarship aid. For O'Bannon that's a foul most personal. "I don't think you should judge a person by what they get on a test," he says.

The new minimum standard, called Proposition 42, was adopted for ostensibly noble reasons: not to guarantee that only Albert (In Your Face) Einstein could play ball, but to make sure that student athletes are in fact both. That's a worthy goal in an era when athletic programs have become cash cows at institutions of higher learning. Critics, though, skewered Prop 42, saying it would discriminate against poor blacks who tend to perform less well on standardized tests; a few even saw it as an attempt to reduce the dominance of blacks in big-time college sports. Others feared that 42 would lead to even more cheating and falsification of records. Most dramatic, John Thompson, the influential basketball coach at Georgetown, boycotted games against Boston College and Providence College, leading the NCAA to promise reconsideration of the proposal. Next week in Dallas, the showdown begins.

At its 84th annual convention, the NCAA will decide whether to let Prop 42 kick in during the 1990-91 academic year, modify it or go back to a less strict regime known as Proposition 48. That rule, which was passed at the 1983 meeting and went into effect in 1986, required incoming freshmen to meet the same SAT (or similar exam) and GPA minimums as Prop 42 if they wanted to play. But it permits the students to receive scholarships if they meet only the grade or test standard. The new rule would eliminate "partial qualifiers": players who fail either prong would be ineligible for *any* institutional aid. The NCAA is working under deadline pressure; high-school football players sign their amateur letters of intent in February, basketball prospects two months later.

MITCHELL LAYTON—DUOMO

Under protest: *Coach Thompson*

The foes of Prop 42—led by the Big East and Southwest conferences—want to give Prop 48 more of a chance before it's left on the locker-room floor. The NCAA has commissioned a study of 48's impact but the results won't be in for two more years. "They're jumping the gun here," says Rudy Washington, executive director of the Black Coaches Association, which last month wrote to all NCAA Division I athletic directors advocating recision of Prop 42. And the NCAA's executive director Dick Schultz would prefer to delay or amend 42. He says the NCAA is working with testing services to achieve "better usage" of the scores. Perhaps the flat cutoff could become "a floating score"; say, 650 at a school that has lower academic requirements than other institutions. "I don't know that that would fly with the membership," he says, in classic understatement.

Dueling propositions won't be the only matter on next week's NCAA agenda. Representatives of the 804 member schools will vote on shortening the basketball season, cutting spring football practice in half and banning contact on the field during that time. There will also be debate over a proposal to require schools to release graduation rates by race, sex and sports. The last item appears to be a response to a bill introduced in Congress by Sen. Bill Bradley, a former All-American basketball player at Princeton, that would make the disclosure of rates a condition of receiving federal financial assistance. Of most significance, the NCAA will also discuss a resolution to eliminate freshman eligibility altogether, a move endorsed by Georgetown's Thompson and many basketball coaches. "There's so much pressure in Division I-A football and Division I basketball that freshmen just need the time to make all the social, educational and athletic adjustments," says Bob Frederick, athletic director at the University of Kansas, which is cosponsoring the ineligibility resolution.

Renegade ideas: If the resolution is approved, a commission will report by 1992. Because the NCAA moves glacially, a few renegades have offered more drastic ideas. Last spring University of Iowa president Hunter Rawlings said he would impose freshman ineligibility even if the NCAA didn't act. That earned him a resignation threat from the football coach along with a complaint by the governor. Now, Rawlings says he thinks unilateral action won't be necessary because of the "growing movement" toward reform. And at the University of North Carolina at Chapel Hill, a faculty committee last month suggested dropping all competitive sports. The group is realistic: "Recommendations to abolish Congress or rescind the Louisiana Purchase would be less controversial," the professors wrote in an 18-page report to be voted on by colleagues this month. If the Tar Heels finish behind Duke in basketball again this year, perhaps it won't be so unthinkable.

Whatever the NCAA does at its convention is unlikely to resolve the debate over athlete eligibility and academic standards. And it's almost certain to be embarrassed again. If the schools fold on Prop 42 they'll be branded insincere wimps. And if they proceed, they'll have to face John Thompson. Georgetown plays Boston College the week after the convention and John Thompson is not a fellow to back down.

DAVID A. KAPLAN *and* KAREN SPRINGEN

How to Solve Our
TEACHER SHORTAGE

THINK OF our public-education system as a yellow school bus carrying our children from the present into the future. The mechanics who keep the bus well tuned and in safe running order are our teachers. We all know that public schools are in a precarious state, so let's imagine that the bright yellow bus that is public education is crossing a mile-high trestle leading from the golden days of the 1950s and early 1960s, when the schools in our country were admired around the world, to the year 2000.

Our kids had better hold on to their seats, because unless we do something drastic and do it now, we are going to run out of qualified teachers very soon, and without their work, that yellow bus with our kids on it is going to sputter and stall and come to a dead halt. Because of rising school populations and the high percentage of the nation's current 2.5 to 3 million public-school teachers who are nearing retirement, the United States will need to hire between 1.5 and 2 million new teachers by 1997.

The United States will need to hire 2 million new teachers by 1997. Where are they going to come from?

But where are these teachers going to come from? Only 8 percent of students currently in college plan to become teachers. To avoid the upcoming shortage, we need 23 percent to make that choice.

There is a silver—or maybe silver-plated—lining to this dark portent. Because we need to hire 250,000 teachers a year for the next eight years, we have a unique opportunity to transform the teaching profession *if* we act now. Arthur Wise, director of the Rand Corporation's Center for the Study of the Teaching Profession, is one of the many experts who believe the decisions we make during the next few years are crucial to the future of American public schools.

"How the education curriculum is designed, implemented and evaluated will determine whether schools have as teachers talented, responsible professionals or low-level, closely managed bureaucrats. The problem is circular," Wise points out. "If teaching is regarded as a serious job, then it will attract talented people. If it is regarded as a low-level enterprise that calls for administrators controlling nearly everything a teacher does, then schools will be staffed by the bottom of the college-educated barrel."

To understand why our schools and the teaching profession are so badly off, and to learn how you, as a parent, can influence educational reform, read on.

What Went Wrong

THIRTY YEARS ago, when many of today's parents were in grammar school, *teacher* was a title of respect. But it was a slippery

BY ERIC GOODMAN

kind of second-class respect. Teaching was a woman's profession—not just a fall-back for women waiting to marry, but also the highest-status calling to which most women could reasonably aspire. American public schools were first-rate during the 1950s and early 1960s because they were built on the backs of extremely bright, underpaid women and minorities. In the late 1960s, when other professions opened up to them, these people stopped entering the classroom. During the 1970s, when there was a surplus of teachers, and the first half of the 1980s, when Americans learned to judge people by how much they earned, teachers lost much of even the second-class respect they once had. The loss was reflected in attitudes toward teachers as well as in salaries.

The world has changed, and our schools haven't kept up. Because politicians are running scared on the subject of public education and want a good sound bite for the 11 o'clock news, they talk about the long-ago Golden Days of American education and the current need to raise test scores and teach basics again.

This political rhetoric is especially shortsighted regarding today's inner-city schools, where the role of the teacher goes far beyond simply teaching reading and writing to filling the gaps in family life. Joan Depew, who has taught in Los Angeles for 17 years, asks, "How can you teach a kid math when she comes in with welts all over her body?" John Gatto, the principal of P.S. 115 in Queens, New York, adds, "We need more guidance counselors, smaller classes—especially in the lower grades—and longer school days. I'd like to hold the schools open at night so that I could work with parents to help them understand their roles in their children's education.

"But implementing programs all boils down to money."

The Bureaucratic Money Guzzler

IN A RECENT study of the percentage of gross national product (GNP) that industrialized nations spend on education in kindergarten through 12th grade, the United States ranked 12th out of 14. Moreover, we have tried to patch our schools by creating what Robert Hochstein of The Carnegie Foundation

What we do now to fix our schools will determine if today's kids will ever want to teach.

for the Advancement of Teaching calls teacher-proof education, in which decisions about curriculum, teaching methods and even how many minutes a day to spend on each subject were made at district and state levels. Because of this, the portion of our education budgets spent on teacher salaries dropped from 55 percent in 1959 to 40.4 percent in 1989. Where did the money go? To a mushrooming bureaucracy of midlevel administrators looking over teachers' shoulders to make sure they teach.

Linda Darling-Hammond, a professor of education at Columbia University, explains the dilemma: "Because we haven't invested enough money and time in recruiting, educating and hiring teachers, we don't trust them to make good decisions about their work."

One solution: Convince students, who believe they can do anything, that they want to be teachers.

In other industries, if a company can't attract qualified applicants for a starting salary of, say, $25,000, the company raises that salary to $30,000 or whatever the market dictates. But in the public schools, especially in hard-to-fill subjects like math, science and foreign languages, if school-district administrators can't find qualified applicants, they offer the same salary but lower the requirements and circumvent state law by issuing emergency teaching credentials.

Darling-Hammond adds, "Every time we greet teacher shortages by filling openings with 'warm bodies,' we create a greater rationalization for building structures for monitoring what teachers do."

But it doesn't have to be this way. Other industrialized countries spend over half their education budgets on teacher salaries. In Japan, beginning salaries for teachers are pegged to salaries for new engineers. In the United States, even after hiking teacher salaries at twice the inflation rate since 1985, we still pay beginning teachers 30 to 50 percent less than beginning engineers.

No wonder there is an overabundance of aspiring teachers in Japan while we are facing a severe shortage.

Teachers' salaries have increased significantly since 1985. But Terry Hartle, education staff director for the U.S. Senate Education and Labor Committee, points out that teachers who are satisfied with recent salary increases were already committed to the profession. He adds, "The most important thing is who goes into teaching and who

Back-to-School Resolutions for Parents

The best way to ensure a successful educational experience for your child—and be prepared to act effectively if any problems arise—is to form a collaborative relationship with the school at the start of the academic year. The National Committee for Citizens in Education (NCCE), a Maryland-based advocacy group, recommends the following actions:

- **Set up appointments to meet your child's teacher and principal. Ask them to call you if your child has any problems—or if you can assist with school activities. Be realistic and specific about what volunteer help you can provide.**
- **Join a parents' group, PTA or PTO in your child's school. If none exists, investigate starting your own to help other parents become more involved. Call the NCCE Help Line at 800-NETWORK for advice about organizing an effective group.**
- **Make an appointment to visit your child's classroom. This will give you a better idea of the curriculum and daily schedule.**
- **Examine your child's school records at least once a year to review new documents and look for inaccuracies. You can request that any negative comments be removed; records should contain only data such as test scores and grades.**
- **Be well prepared for parent–teacher conferences with topics and questions you would like to cover. You have as much right to set the agenda of the meeting as the teacher does.**

—Christina Ferrari

stays. So we need to make teaching a real profession and pay teachers accordingly."

Last year Senator Claiborne Pell, Democrat from Rhode Island, and Senator Edward Kennedy, Democrat from Massachusetts, introduced a bill likely to become law this year. It aims at upgrading the teaching profession and includes proposals to fund the college educations of top students who agree to become teachers.

Around the country there are bright spots, including eight innovative school districts designated as learning laboratories by the National Education Association (NEA). In Mendon, Michigan, a new schedule is being devised for the 1990–91 school year for the middle schools that would guarantee teachers joint planning time and provide every student a daily 20-minute small-group counseling session with a teacher, staff member or administrator. And teachers, support staff, school officials and school-board members in rural Chichasha, Oklahoma, have embarked on a plan called site-based decision making.

Teachers Shifting Into Power

OTHER INNOVATIVE school systems are trying out site-based decision making (sometimes called participatory management), which shifts power from administrators at the district or state level to teachers at individual schools. It lets teachers decide what they're going to teach and, in conjunction with parents and administrators, also allows them to consult on hiring, firing and budgetary decisions.

To understand why this decentralization of power may be the key to transforming our schools, think about a teacher's daily regimen. There are no expense-account lunches, none of the little perks other professionals take for granted. There are few meetings with colleagues to discuss shared problems, not even problems they might be having with the same student. If there is time set aside for a faculty meeting, it's often to apprise teachers of some new bureaucratic procedure. And lunch? Marking papers or

What You Can Do to Change the System

You can make an immediate difference in your child's school experience by getting involved as a classroom volunteer, home tutor, school-board member or leader of a parents' group. Then you will be better able to identify problems and work to improve the system.

The first step is to get together with other parents. "A group of parents is always more effective than one unhappy parent," says Nancy Berla of the National Committee for Citizens in Education. Then identify the problem. Ask such questions as, Does the problem concern one teacher? A school or statewide policy? Is there legislation about it?

If the problem concerns one teacher, talk to the teacher first. Here's how:

- **Emphasize what can be done rather than who is to blame. "Say that you're concerned about specific issues, and make constructive suggestions," says Berla. "Treat the teacher as a member of a team working on your child's education."**
- **Check on your child's progress every few weeks instead of waiting for the report card.**
- **Keep your interaction with the teacher on a professional level. "Try to get the whole picture first, rather than simply accepting the child's perspective," Berla says.**

If you're dissatisfied with the results of your efforts or see that you and the teacher will need more help in resolving the problem, the next step is to meet with the principal. You'll be best prepared if you:

- **Visit the classroom first to observe the teacher and make notes about your concerns.**
- **Get other parents' specific complaints.**
- **If it's a policy issue, such as grouping students by ability, find out what the school's policies are; the teacher may be only following the rules.**
- **Clearly identify and articulate your goals: more supervision of the children during class time, for example. Know which points are negotiable. Vague goals are hard to meet and monitor.**
- **Try to be realistic about the results. "Parents often expect the principal to sympathize immediately," says Berla. "But the principal is also responsible for protecting the school's employees and policies."**
- **Ask the principal to say specifically what she will do to resolve the issue—set up a joint meeting of the teacher, principal and parents, or raise the issue at a school-board meeting.**
- **Press for a timetable.**

"If by this time you're still not satisfied or think it's necessary to change a school policy, then you should go directly to the superintendent or school board," says Berla. "Ideally, the board is making policy that the superintendent is responsible for carrying out." —C. F.

supervising student cafeterias.

Merrell Frankel, who has taught social studies and history in Los Angeles for 13 years, says, "I'm involved in ordering textbooks, and during every order, an administrator says to me, 'Are you sure you want this?' even though a group of teachers has already decided that we do. You talk about *demeaning*." That approach adds insult to penury.

During last year's bitter teacher strike in Los Angeles, teachers carried picket signs expressing the frustration of teachers across the nation: "We Are Not Tall Children!" At the contract-ratification meeting following the strike, the loudest cheers from the teachers were reserved not for salary increases but for important concessions on site-based decision making.

Calling attention to our best teachers—in nationwide recognition projects—will inspire others and attract our best students to the profession.

In Louisville, Kentucky, 24 schools started on a participatory-management program in the fall of 1988. The program has been so popular with teachers, who feel they have some control for the first time in their professional lives, that each year the number of schools participating doubles.

Rebecca West has taught middle school in Louisville for 17 years. Under site-based management, she and five colleagues developed a multiage no-fail program in which the same six teachers work with the same 150 students for their three-year stay in middle school. Kids aren't failed if they don't complete assignments; they simply can't go on to what's next. As part of the program, the district provides funds to hold the schools open at the end of the year. The first June, out of 150 students, only 26 had a missed assignment, and those 26 were so motivated that on the first day of summer vacation all showed up. Thirteen of them finished on the first day.

West says, "This is what can happen when teachers make the decisions about how children learn. Our feeling of achievement is very rewarding. We've created a new program and succeeded."

Site-based management is also valuable because it allows for and encourages the symbiotic relationship between teachers and students. In the end, it's the most involved and inspired teachers whom students remember. Stephany Hoover, who has taught second grade for nine years in Louisville, says, "We're so excited about teaching that the kids come to the classroom excited about learning. I can't tell you how many times I've heard from parents, 'My child is in tears because he's sick and I insisted he stay home.' "

The success of site-based management in Louisville demonstrates that there are solutions for the problems bedeviling our schools. The question is whether we will have the courage and financial resolve to implement them.

Follow That Mentor

ONE OF THE most intractable problems in the teaching profession has been that to earn more, to face new challenges or to take on greater responsibility, the best teachers have often left teaching to become administrators. Mentor teacher programs, one of the most successful innovations of the 1980s, address this conundrum. Frankel says, "Administrators don't understand why I won't leave the classroom and move into administration. From their perspective, if I had any intelligence or ambition, I would have left a long time ago.

"I stay because there isn't a morning that I get up and don't want to teach."

In the past five years, one-third of the nation's schools have introduced mentor programs, a reform that 86 percent of all teachers favor. Mentors help oversee and train new teachers; they earn up to 20 percent more than colleagues with the same background and experience. A teacher's selection as a mentor provides public recognition of her expertise, a professional validation. Experts such as Arthur Wise and Bob Hochstein believe mentor programs should be expanded nationwide.

In Rochester, New York, mentors can earn up to $67,000 a year. At the elementary level, two mentor teachers share a single class, one teaching mornings, one afternoons, with each mentor released for half the day to work with first-year teachers. This is intended to give them the time to train and nurture new teachers.

At the other extreme of commitment to the mentor program, in Los Angeles (where Frankel has been a mentor since the program began a decade ago) mentor teachers earn only an extra $4,000 a year, which is only the difference between the highest-paid teacher and the lowest-paid administrator.

The Key to Intellectual Ignition

COLLEGE AND university professors are expected and encouraged to stay current in their fields; public-school teachers are not. Over time, teachers often feel cut off from the subject matter that initially excited them. *continued on page 157*

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The Yale–New Haven Teachers Institute, in New Haven, Connecticut, considered the best continuing-education program for teachers in the country, runs seminars (headed by distinguished Yale faculty) for groups of ten to 12 teachers from a variety of disciplines. During the seminar, teachers create a new curriculum they take back to their classrooms.

Kelley O'Rourke, who coordinates the middle-school arts program in New Haven, is an enthusiastic alumna of the institute. While taking a history-as-literature seminar, she wrote a course curriculum using contemporary detective fiction to introduce students to Shakespeare and to teach *Macbeth* to eighth graders.

"I felt so good about writing and teaching the curriculum that I applied for a New Haven Initiative for Excellence grant, which reimbursed me for the materials I had bought with my own money to teach the unit. Winning that gave me the courage to apply for Connecticut's Celebration of Excellence grant, which recognizes outstanding teachers and special classroom projects. I also won that. The recognition was wonderful."

Recognition is an enormous motivator. So is being treated like a professional. One key aspect of the Teachers Institute's 20-session seminar: Teachers are *paid* $1,000 to attend. Paid for their time.

In 1987 the school district in Rochester, New York, negotiated with the teachers' union to develop a radically new contract, which drew heavily on recommendations made by The Carnegie Foundation for the Advancement of Teaching. Tom Gillett, a Rochester teacher for 21 years, was the union's chief negotiator and now serves as vice-chairperson for Rochester's Careers in Teaching Joint Governing Panel.

"Part of the district mission is to move toward a very different type of teacher evaluation linked to student performance. Under the old system, most tenured teachers were rated superior or above average, even if 70 percent of their students were failing their courses. With teachers now willing to be held accountable for students' performance, the old excuse, 'I'm teaching well; they're not learning,' is no longer acceptable."

Willingness to accept this new accountability is a result of increased autonomy. Some teachers still complain that they haven't gotten enough power, and there is enormous resistance within the system—both from administrators who feel threatened and from teachers who were comfortable with the status quo. But school-based planning committees consisting of parents, teachers and administrators have changed the way the schools operate and are fostering a new relationship between the teachers' union and the school district.

According to Gillett, two other Rochester innovations point the way toward the future of public schools. "On each school-based planning committee, we've assured parents they have power equal to teachers and administrators."

The other area in which Gillett believes Rochester is leading the way is home-based guidance in middle schools. Under this program 15 to 20 students are assigned a teacher or staff member who is responsible for coordinating communication among a student's home, school and subject teachers. The hope is that small problems can be headed off before they become large ones. This holistic approach to education is designed to strengthen the relationships between parents, teachers and students during the difficult middle-school years. Some Rochester teachers have complained that, in addition to being teachers, they're acting as guidance counselors, and that although they're paid more, they're not paid enough to take on a whole new job. But Gillett believes home-based guidance is helping to move Rochester's education system toward a consumer-oriented enterprise.

Tuning Up the Standards

"THERE IS a belief that the undergraduate education major has outlived its usefulness," writes Arthur Wise of the Rand Corporation in a recent article in the professional journal *Educational Leadership*. Evidence of that belief has cropped up in Texas and Virginia, where, in order to be certified by the state board of education, teachers are required to have a subject major. Another trend is to require a master's degree in education for permanent state certification. (This is currently the law in at least five states: New York, Massachusetts, California, Oregon and Washington.)

Under Wise's proposal for teacher training, after a fifth year of pedagogical studies, aspiring teachers would complete an intern year much like a medical internship, during which they would teach at different grade levels under the tutelage of a mentor teacher. According to Wise,

Why You Should Get Involved

In a survey of 50 research studies around the country, NCCE found that parent involvement leads directly to higher grades and test scores, better long-term academic achievement, more positive attitudes and behavior, and more successful education programs.

Perhaps most important, the NCCE research shows that parent participation in the school system works best when the involvement is well planned, comprehensive, and long lasting.

"It's crucial that parents take a long-term view of their child's education," says Ann Lynch, president of the national Parent Teacher Association (PTA). "We don't plan our own careers or finances one year at a time.

"Concerned parents need to understand the entire structure of the school district— funding, teacher selection, textbook selection, curriculum—and be involved every step of the way, so they can help make policy changes that will affect the future." —C. F.

this six-year sequence of teacher preparation would produce thoroughly prepared teachers. Moreover, the prospect of having a profession that would command both respect and a good salary would attract high-caliber candidates.

Getting a Jump Start From Businesses

ENLIGHTENED BUSINESSES have already made the crucial connection between an education system in chaos and the resulting dearth of present and future high-quality employees. Consequently they've started funding programs that provide grants and public recognition for creative teachers. Impact II, funded initially by the Exxon Education Foundation, awards grants and creates teacher networks. Another program, Thanks to Teachers, which began in January 1990 as a joint project of Apple Computer, the National Foundation for the Improvement of Education, the National Alliance of Business, and Group W Television, rewards excellence in teaching with public recognition and free computers. The hope of these and similar projects is that by calling attention to our best, we will inspire other teachers and convince our best students to join their ranks.

In another approach, Teach for America, created by recent Princeton graduate Wendy Kopp, 23, recruits talented grads from colleges around the country to staff the nation's first teacher corps. Last spring recruiters put more than 2,500 applicants through a tough selection process, ultimately hiring 515. Kopp conceived of the program as a way to help solve the teacher shortage and improve the profession's image. "If teaching had an aura of selectivity and status, then the best students would want to choose it as a career," she says.

After an eight-week summer training program, the teachers are heading to schools in Los Angeles, New York, New Orleans, Baton Rouge, and rural areas in North Carolina and Georgia, where they will be supported by a mentor teacher and Teach for America staffers. They are required to teach for a minimum of two consecutive academic years and will receive the regular salaries for first- and

second-year teachers; because they haven't fulfilled standard teacher-certification requirements, they will teach only in positions for which there are no qualified, certified applicants. In return they are permitted to defer their federal student-loan repayments.

What's Down the Road

PROBLEMS IN our public schools and the teaching profession weren't created in a day, a year or even five years; they're not going to go away rapidly, either. Some experts predict that to completely turn around our public schools will take 12 years.

Anyone who has a school-age child doesn't want to hear about 12 years. Neither do politicians and school superintendents. After only three years, according to Tom Gillett of Rochester, "there is impatience in our district about a lack of demonstrable results. Real change takes time."

And it will take money. Some of it could come from eliminating the layers of bureaucracy and paperwork we've accumulated because we haven't invested enough in teachers to be able to trust them. Part of it will have to come from enlightened businesses, from the government and from our own pockets. We need to convince college students, who believe they can do anything they want, that they want to be teachers. And we need to lend them financial support.

The time for change is now. We must decide that public education and quality teaching are truly national priorities. We must recognize that teaching well is enormously difficult, that it requires patience, wisdom, knowledge and skill. And having recognized that, we must respect and pay our teachers accordingly, or we will regret our lack of vision and national stupidity for generations to come.

If that sounds dramatic, consider this. In America, because we lack qualified mathematics teachers, only 3 percent of high school students take calculus. In Japan and Germany, 15 to 20 percent do. Which country do you think will compete better in the technology-driven 21st century? More important, which country is doing better by its children? ■

The bad old rules:

1. No smiling . . . until Christmas

EDUCATION

The Failure of Teacher Ed

The indictment: 'The wrong people are studying the wrong things in the wrong places'

Boston University president John Silber was so appalled at the low quality of students at BU's School of Education that in 1982 he cut by half the incoming freshman class. "There is no way one can begin with a talent pool that is below average and end up with a cadre of teachers capable of upgrading our public schools. It's just not possible," says Silber. Consider: of the students who score in the bottom 20 percent on standardized college entrance exams, 40 percent become education majors. Or, as a recent Carnegie Corporation report concluded, "the problem with teacher education is that the wrong people are studying the wrong things in the wrong places."

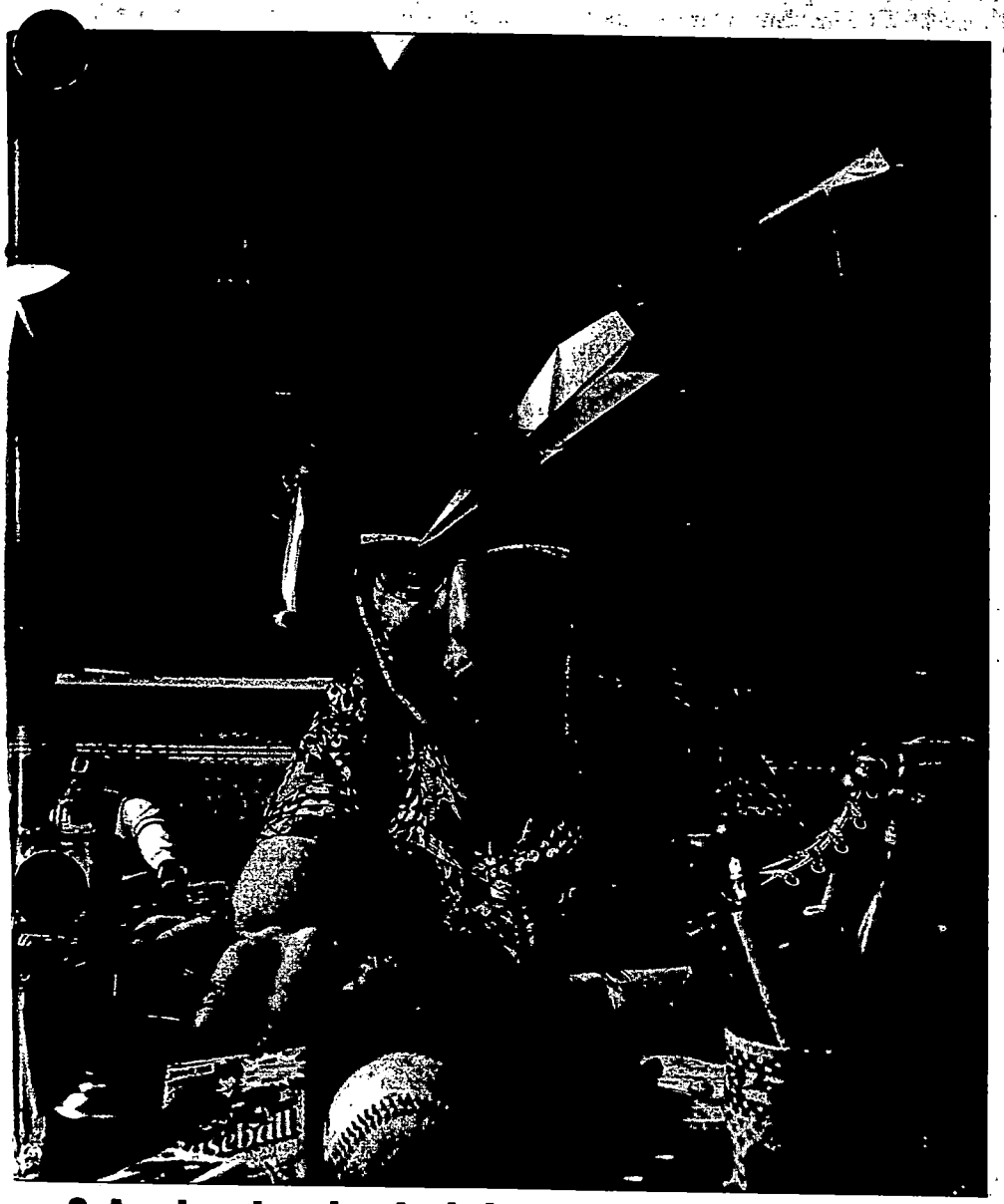
Once again the process of training teachers has been judged too important to be left to educators. State legislators are making sweeping changes: in Texas, a new law forbids prospective teachers from taking more than 18 education credits; most other states are making it easier for college graduates to get licensed without taking a single education course. The National Council for Accreditation of Teacher Education (NCATE) has recently tightened its standards. As a result, 26 percent of the nation's 1,300 education schools could lose their standing if they don't improve their programs. There are more drastic remedies in the offing. The Holmes Group, a consortium of education deans from nearly 100 major research universities such as Harvard and Michigan State, advocates eliminating the undergraduate education major altogether. And then there's BU's Silber: "The best thing that could happen to most schools of education would be closing them." So far Silber, who is on leave to run for governor of Massachusetts, hasn't set an example by closing the education school at his own university.

There are several counts in the indictment against schools of education. First is the disturbing fact that education students still don't take enough liberal arts courses—which education professors call "content" courses—to learn the math, science and social studies they will one day teach. Instead, argues the Carnegie Corporation report, they study too much pedagogy in banal classes on teaching methods. "A lot of education courses are just ill conceived and poorly taught," says Linda Darling-Hammond, a professor of education at Columbia University's prestigious Teachers College. "There are tales about courses like 'creating an environment for teaching,' which consist of how to construct bulletin boards. It's real trivial stuff." Critics charge that such "Mickey Mouse courses" still abound: inane instruction on class-control techniques like when and when no to smile in front of students, or how to teac without turning your back on the class.

Second, in addition to getting many o the worst students, education schools als receive the least amount of funding fron their universities. That means bigger class es for students, heavier workloads for fac ulty and little time for research or specia projects. "The direct costs of instructio per year for educating a prospective teach er are half the costs of educating the ty ical college student," the Carnegie repo found. Third, students spend too muc time listening to highly theoretical le tures by professors cloistered in their un versity ivory towers and not enough time i primary and secondary schools where the can learn to put the theory to practical us "Unlike medical-school professors wh teach in clinical settings, professors of ed cation are removed from practice," sa Kevin Ryan, a professor of education a Boston University. "We're like aging at letes, commenting on a game that w haven't played in a long time."

Alternative route: State legislators haven been shy about imposing their own sol tions. All but a few states now require gra uating education majors to pass at least or standardized competency test before the can get their teaching certification. A 33 states now allow college graduates start teaching without having to take a education courses. These so-called altern

PHOTOGRAPHS BY MARTY UMANS; STYLING, BEVERLY ANN MOO



2. A noisy class is a bad class

3. Never turn your back

tive-route programs have become a staple of every reformer's agenda. But C. Emily Feistritzer, head of the National Center for Education Information in Washington, recently conducted a state-by-state analysis and found that only three states (Connecticut, New Jersey and Texas) have actually designed an alternative program that provides training and certification to people interested in teaching in all fields and at all grade levels.

"What's happening is that a lot of states are just dusting off their old emergency certification and giving it a new name," says Feistritzer. Instead of offering any training, many states simply certify non-education-school graduates as teachers on the basis of their college transcripts and résumés. Other legislatures allow the colleges in their states to design alternatives to their traditional requirements, which often means more of the same ineffective courses under a new program name.

New Jersey's experience proves that well-plotted alternative routes work. Applicants with college degrees are permitted to work for one year as provisional teachers. Before they can apply for permanent certification, provisional teachers must attend 200 hours of formal instruction at a district- or state-operated training center. They also get extensive on-the-job supervision and evaluation by a professional support team organized by the school district. Since the program began in 1984, more than 5,000 people have applied and 1,506 applicants have been hired as provisional teachers.

Developmental stages: Education theorists complain that many legislative reforms throw the baby out with the bath water. "About 25 percent of our country's kids drop out of school and another 25 percent graduate without basic skills mostly because teachers don't understand how children learn and therefore are not addressing their needs," says Darling-Hammond. The better reform, then, would require prospective teachers—in or out of education schools—to learn about the developmental stages children pass through and how best to tailor their lessons to reach them.

While many changes are being forced upon the education schools, some are voluntarily mending their ways. One innovation calls for drafting liberal arts professors and public-school teachers to teach methods classes. Last semester, for instance, seniors at Vassar College could take "science in the elementary classroom" from biology professor Robert B. Suter and Mary Ann Bahnsen, a former elementary-school teacher. As part of the course, the students had to prepare and give science lessons to second and third graders attending a natural-history program at Vassar's 500-acre farm.

For a lesson on growth and change, Vassar senior Sandra Wilks first presented a slide show on the different stages of the life cycle of spiders. Afterward Wilks took the children outside to a giant spider web made of string. The kids pretended to be a spider feeling and then entrapping its prey, a mosquito, as it vibrated the string. What makes this kind of team-instructed course on how to teach science so unusual is that the emphasis is not on memorizing scientific terms or buzzwords from educational psychology textbooks, but on thinking, reasoning and problem solving.

If the Holmes Group—named after a former Harvard education dean—has its way, students like Wilks will have to wait until

graduate school to acquire a degree in education. In the consortium's view, prospective teachers should earn a degree in liberal arts and then take most of their education courses in a fifth year. This proposal has touched off a contentious debate. "Holding a person in school longer just to give them more content is not the answer to our teacher-education problems," says Portia Shields, a professor of education at Howard University. "The expense of a fifth year would further discourage minorities from going into teaching. And we already have too few minority teachers."

Some states, like California, already follow the Holmes master's degree model. Other schools, like the University of Connecticut, are crafting compromises. "We do need a fifth year because there are additional things we want to teach, but we feel that education in pedagogy has to happen at the same time as the liberal arts," says Charles Case, dean of the School of Education at UConn. This year, prospective teachers will begin taking some education courses in their junior year, but they must complete a fifth year of classes in order to receive an education degree.

The Holmes Group also wants to greatly expand the ancient practice of student teaching. Instead of dispersing student teachers to schools throughout the city, the Holmes Group wants universities to concentrate on a few key primary and secondary schools and turn them into "professional development centers." The education schools won't take over the local schools—they'll work as partners. For instance, when UConn education professor Gil Dyrli arrived in suburban Tolland, Conn., his first task was negotiating a five-year contract between his university and the principals and district superintendent. Instead of lecturing three times a week at UConn, Dyrli now spends most of his time in Tolland, doing everything from supervising student teachers to coordinating weekly UConn seminars that are open to high school teachers, too.

Oddly, the current movement to reform public schools hasn't emphasized teacher education; not one of the president's six national education goals mentions teachers. But surely, says Ernest Boyer, president of the Carnegie Foundation for the Advancement of Teaching, "teacher training and the recruitment and retention of outstanding teachers should be at the top of the list." Change must begin with the nation's next crop of teachers, says Holmes Group president Judith Lanier, dean of Michigan State's School of Education. And if the states and the deans keep up the pressure, change will be possible. It's hard to imagine the 1,300 education campuses becoming hotbeds of reform, but it's either that or the mediocrity we can no longer afford.

CONNIE LESLIE *with* SHAWN LEWIS *in Detroit*

Biology, Chemistry, Physics and Tears

When his students are jumping out of their seats with enthusiasm, Marc Winiecki looks like the tobacco patch's version of Jaime Escalante, the inspiring teacher in "Stand and Deliver." But at night, back in the small room he rents from an elderly woman, sometimes he cries. He teaches biology, chemistry and physics, and he's overwhelmed. Of the 215 students at Jamesville High School in Martin County, N.C., 120 are enrolled in his courses. And some days it seems like they're all lined up outside his door with questions. "Marc is an answer to our prayers," says principal Bob Jones.

Winiecki is part of the first wave of volunteers from Teach For America. Modeled loosely on the Peace Corps, the program is designed to entice smart, idealistic college graduates to work as public-school teachers.

After an eight-week training course in Los Angeles, the first class of 500 has started teaching in disadvantaged school districts. Eleven have dropped out, but Winiecki, a Colby College graduate, and art teacher Laura Kays, a Smith College graduate, stay the course in Martin County.

WARREN UZZLE

Educational missionaries: *Winiecki livens up a science class*

On opening day, the only advice that his fellow teachers gave Winiecki was not to smile until Christmas, so the students would know who was boss. He laughed. "If I'm going to go down, it's going to be smiling," he says. On a hot September morning, his biology classroom is set up like TV's "Family Feud." The class is divided into two teams. "A trait that gives an organism an advantage is called?" asks Winiecki. Stephen, a slight, bespectacled boy, shoots up his hand. His opponent, Barry, a stocky 10th grader with a flattop, is stumped. "Adaptation!" screams Stephen, who saunters back to his chair slapping the raised hands of his teammates. "We're stompin' ya'll now!" yells a boy on Stephen's team.

Behind the stomping, there seems to be learning. "Mr. Winiecki explains more and shows examples," says chemistry student Connie Whitley, who's repeating the course after failing last year by one point. "Our last teacher just wrote notes on the board. If we asked questions, she would embarrass us." The teachers at Kays's and Winiecki's schools are more grateful to the upstarts than threatened by them. "Young teachers have creative ideas and aren't burned out," says Brenda Davis, whose students take an art class with Kays.

Cabbage leaves: Kays, a shy, bohemian art and anthropology major, works in Bear Grass High School. Anticipating the resistance her self-conscious students would have to studying art for the first time, Kays brought a drawing of the human brain to her first day of class. She explained the difference between the right and the left lobes—the left being art's enemy, the controller of reason. As her students attempt to draw the insides of a cabbage, Kays asks them to "get lost in the line of the cabbage. Catch every detail, every change in the relief." It's an arresting notion for the class, except for the four boys more determined to turn the cabbage leaves into small missiles. You're left-brain victims, she tells them. The class looks up. There, amid the teased and permed students, stands Kays, without makeup or guile. "She's different," says Lashaun Stokes. Then it's back to the cabbages.

CLARA BINGHAM *in Martin County*

JAMES D. WILSON—NEWSWEEK

High-school and college students instruct at Summerbridge in San Francisco: *Older kids get into teaching, younger kids get into learning*

EDUCATION

The New Teacher Corps

Alternative training programs stir a revolution in the classroom

The more than 500 young men and women who filed into a University of Southern California auditorium last month were not there to collect their diplomas. In fact, most of them had graduated from college weeks before. This time, as they made their way through the 112-degree heat, they had something grander in mind. "Above and beyond everything," said Dan Brooks, a 21-year-old graduate of St. Olaf College in Minnesota, "I want to teach. Put me wherever. I'll teach whatever."

Brooks and his peers are the green recruits in a revolutionary educational movement. Now in its first year, Teach For America has set out to take top college grads who did not major in education and train them to be teachers. By the time participants leave the eight-week training institute at USC they will have a range of new skills: from how to make algebra entertaining to how to communicate with kids from different ethnic backgrounds. By most measures, this is a radical plan, considering that teachers traditionally take semester after semester of education courses and state exams before they get certification.

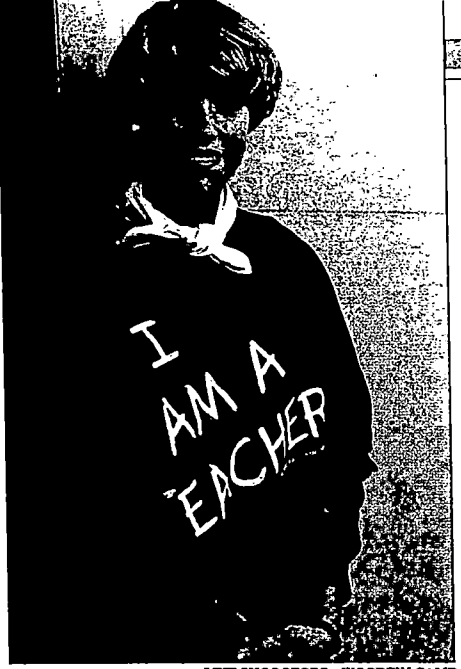
Just a few years ago a program that attempted to put the best and the brightest directly into classrooms would have encountered an unsympathetic bureaucracy—not to mention hostility from teachers who had taken the traditional route. But today, even the most entrenched educators have begun to admit they're losing the war of the classroom. And they realize that they can't depend solely on conventional sources for reinforcements—not with the quality and quantity of teachers on the wane, particularly in rural and inner-city districts. "We simply do not have enough people coming into teaching of the caliber we need," says Albert Shanker, president of the American Federation of Teachers. Moreover, the number of minorities entering the field does not keep pace with the number of minority students. In 1987, 20 percent of school-age children were people of color, compared to 10 percent of teachers. By the year 2000, education experts predict that nonwhites will make up 5 percent of teachers, but more than 30 percent of students.

Teach For America (TFA) is one of about 40 programs nationwide designed to pump fresh blood into teaching. Some programs are merely stopgaps put in place by districts short on science or math teachers. But others are more mainstream: about 35 states have established alternative routes that place teachers-to-be in the classroom while they continue to take classes and tests for certification. A third category, like TFA and the Peace Corps's teaching fellowships, run independent of state control, are perhaps the most creative.

Appropriately, TFA began as a school project. Princeton student Wendy Kopp (class of '89) turned her senior thesis into a blueprint for revitalizing the teaching profession. Unlike many state programs that

draft teachers from other professions, her plan called for drafting energetic idealists fresh out of college. Kopp speculated that if the prestige and competitiveness of teaching were just as great as, say, lawyering, then more bright students might choose a career in the classroom. "We want to make teaching the thing to do on college campuses," Kopp says. After graduation she set out to create the organization by courting educators, private foundations and corporations for support. (TFA is funded completely by corporate donations and foundation grants.) This year 506 recruits were chosen from more than 2,500 applicants. They begin their two-year stints this fall in districts with serious teacher shortages—and without having to take the classes or exams that lead to certification.

Difficult assignment: For all its gumption, TFA could still learn a lot from the Peace Corps. In 1984, the Peace Corps began tapping returnees from its international program to help at home. So far the group has enrolled 60 "fellows" in Columbia University's Teachers College. Participants teach in New York schools by day and take graduate education courses at night. Current fellow Deborah Baker, 28, taught in a remote Guatemalan village for two years. She didn't realize how good she had it until she got her stateside assignment: New York City's Lincoln Junior High. "Even though I can come home and take a shower every night, it's harder because this is my country and I thought that people were better taken care of," she says. This fall the program will expand, sending participants to California, Florida and Georgia. Eventually it will include 20 universities and 4,000 student teachers.



LEIF SKOOGFORS—WOODFIN CAMP

An innovator: *Teach For America's Kopp*

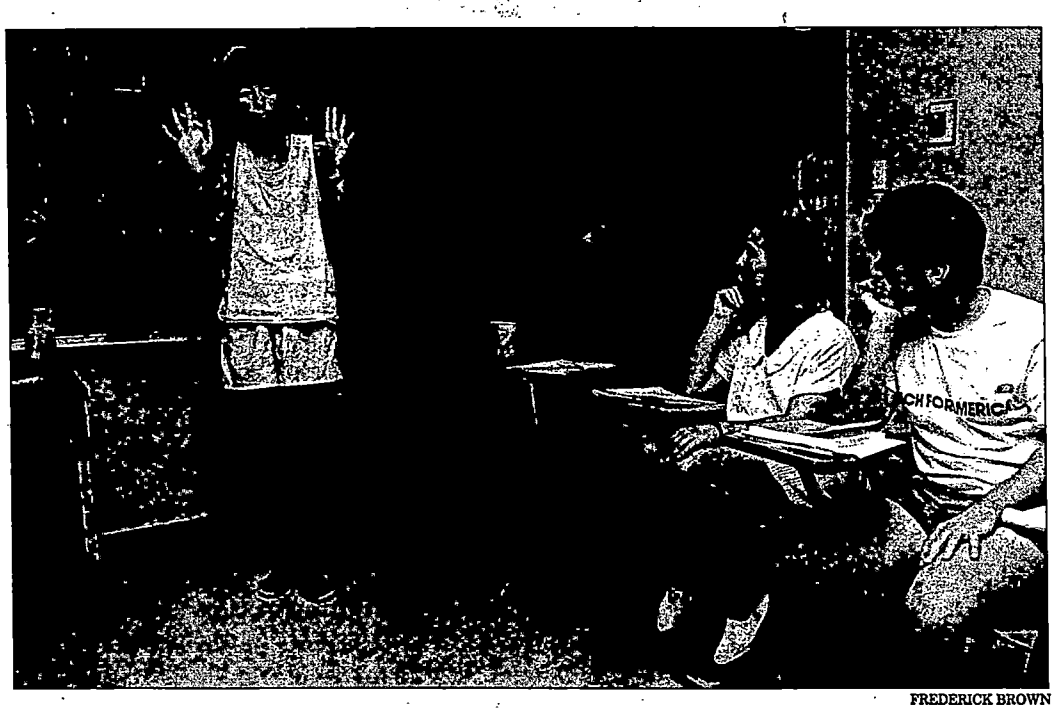
Of the state-run alternative programs, New Jersey's six-year-old plan is the oldest, and the most emulated. New Jersey's schools recruit on college campuses and through newspaper ads. Only a week after Robin Herskowitz answered an ad in her local paper she was teaching drama in a New Jersey school. Herskowitz, 35, didn't have an education degree, but she had worked in the theater for years. "Because I'm from a professional background, I think I demand more of the kids," she says. And more important, "I've found a thing I truly love doing." After completing basic requirements, including a bachelor's degree and a passing grade on the National Teacher's Exam, New Jersey recruits teach while completing 200 hours of coursework in one year. They also receive lots of supervision and critiques from experienced teachers. By 1989, 29 percent of the state's new teachers had come via the alternative route.

Smaller programs attack the lack of minority educators on a more local level. At San Francisco University High School's Summerbridge Program, 45 high-school and college students teach middle-school students every summer. The program is designed to get the younger kids into learning and the older kids into teaching. Codirector Thomas Malarkey says 50 percent of Summerbridge instructors, who handle every aspect of teaching from curriculum development to parent-teacher conferences, are people of color. Similarly, the summer teacher-recruitment program at Phillips Academy (Andover, Mass.) brings a small group of minority college students together to encourage them to go into teaching at the secondary or college level.

Scab programs: As with so many new ideas, the alternative teacher concept has its share of critics. Skeptics say the programs do not give participants enough training or supervision. "We would never say because there's a shortage of doctors or engineers, 'Take a bright person, give them a few weeks of preparation and let them build bridges or perform surgery'," says John Palmer, dean of the school of education at the University of Wisconsin. Some teachers' unions are equally outspoken, even calling the alternative routes scab programs. "I am not interested in people who go into teaching for three or four years until they grow up and see what they want to do in life," says Keith Geiger, president of the National Education Association, the nation's largest teacher's union.

For now, support for the alternative programs far outweighs the dissent. The proof is in the numbers, advocates say. In New Jersey, for example, alternative-route teachers have higher certification-test scores than those who followed the traditional path. In Texas, minority teachers represent nearly 50 percent of those certified in some districts, thanks to alternative routes. And while these programs are not likely to ever replace existing methods of training, their effect is as contagious as it is uplifting. The enthusiasm they generate may be the best medicine for our ailing schools.

MARCUS MABRY *with* JEANNE GORDON *in Los Angeles,* LYDIA DENWORTH *in New York,* CLARA BINGHAM *in Washington and bureau reports*



FREDERICK BROWN

Crash course in classroom survival: *TFA corps members learn how to pique students' interest*

Drafting the best and brightest

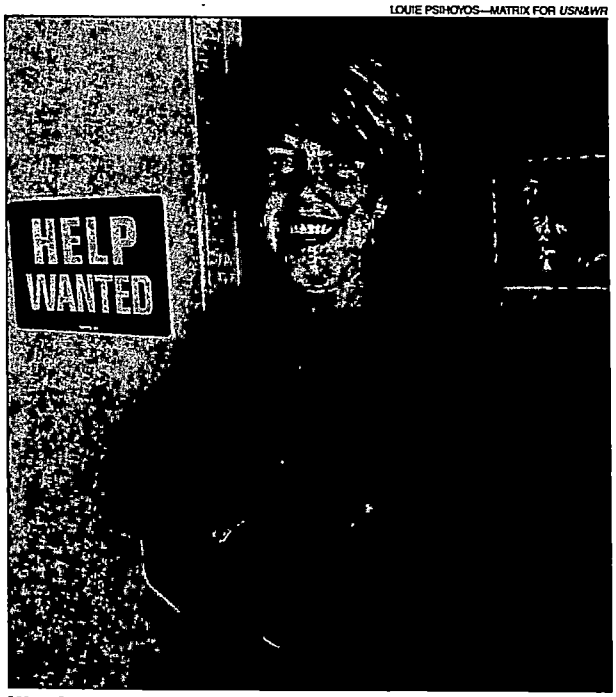
EDUCATION ■ An elite new teacher corps reveals public spirit on campus

Well-tailored recruiters representing investment banks and professional schools are commonplace on the nation's elite college campuses. Students recruiting their classmates to teach in the nation's beleaguered public schools are not.

Yet that is what has been happening at 100 leading colleges and universities since early December under an ambitious new project called Teach for America. Astonishingly, this country's best and brightest, who traditionally have shunned teaching as a low-pay, low-status occupation, are responding. Indeed, within a week of slipping an informational flier under the doors of 1,500 university dorm rooms last month, Teach for America's Yale representative received 170 phone inquiries, reflecting a level of interest in teaching unimaginable on top campuses a decade ago.

Teach for America's founder is a 1989 Princeton graduate named Wendy Kopp. At a national conference of students in 1988, Kopp heard undergraduates with distinguished academic records express enthusiasm for teaching. That inspired her notion of a "teacher corps" that would allow graduates headed for other careers to sidestep state licensing laws that typically require teachers to earn education degrees. The 22-year-old public-policy major drew up a blueprint for the organization in her senior thesis last spring and established Teach for America after graduation.

LOUIE PSIHOYOS—MATRIX FOR *USN&WR*



Wendy Kopp. *Tapping into resurgent campus idealism*

Coming shortfall. Kopp's initiative is nothing if not timely. A severe shortage of talented teachers is threatening to undercut current attempts to improve the performance of the public schools. Reformers continue to bemoan the low caliber of many education-school graduates. And between now and 1997, rising enrollments combined with a wave of teacher retirements are expected to produce a need for 1.5 million new teachers—many more than the education schools are turning out.

Such statistics have sparked an intense interest in liberal-arts majors as a new source of teaching talent. About 20 states have created "alternative certification" routes into the nation's classrooms for would-be teachers lacking education degrees. The Bush administration has asked Congress to allocate $25 million for grants supporting the state programs. So far, such programs have attracted mainly scientists, lawyers and other professionals who want to make midcareer shifts into teaching. Teach for America is aiming to recruit seniors straight off the campuses of the nation's most prestigious colleges and universities.

Teach for America has a predecessor in the federal Teacher Corps, established in 1965 as part of President Lyndon Johnson's War on Poverty, which followed a similar strategy in its early years, placing about 1,000 recruits annually in disadvantaged rural and urban communities. But Kopp uses as her model the Peace Corps, an independent agency with a high profile and an aura of selectivity and public spirit. "Part of the reason people apply to the Peace Corps is because they know it's selective," observes Kopp. "In order to attract people with the most career opportunities, we have to compete with graduate schools, investment banking and management consulting, which offer prestige and a high profile."

Teach for America's target schools range from the Ivy League to leading liberal-arts colleges and top public universities. The organization has made a priority of recruiting minority teachers and is recruiting at leading black institutions. Kopp and the organization's recruiters attribute the initial surge of enthusiasm on campus to student awareness of the crisis in education, as well as to a resurgence of public spirit among students generally. "Students are talking about teaching, science majors, premeds, the budding political types, the works—the enthusiasm is very broad," says the Yale rep, senior Jonathan Snyder. A 1989 survey of Columbia and Barnard seniors seems to substantiate that observation. Of the respondents, 60 percent expressed a willingness to teach in public schools for periods of two or three years.

High-risk thinking. Kopp's progress since submitting her thesis nine months ago has been extraordinary. She has raised nearly $500,000 from foundations and major corporations such as Mobil, Merck, Xerox and Union Carbide, and won many converts to her cause in the process. "It's the kind of radical high-risk, high-reward thinking that's needed to begin to turn around the crisis in public education," says Robin Hogen, vice president of the Merck Company Foundation, who calls Kopp "disarmingly effective" at opening doors in high places. Merck has donated $100,000 to Teach for America.

Working out of donated Manhattan office space with a staff of six recent college graduates, Kopp has recruited an advisory board that includes nationally prominent educators and several corporate titans. An equally distinguished panel is developing a summer training institute that all Teach for America recruits will attend prior to entering the classroom.

Negotiations to place Teach for America recruits are nearly complete with several urban school systems, including Los Angeles and Chicago, and with rural school systems in North Carolina and Mississippi. Later in the month, Kopp and her staff will travel to the campuses to select applicants who, in addition to undergoing traditional interviews, will be required to perform a 15-minute "teaching demonstration." Kopp is anticipating 7,500 applicants. Teach for America's first 500 recruits are scheduled to be named in April and to be in classrooms by September. ■

by Thomas Toch

THE BETTMANN ARCHIVE

Crawling before walking? *Experts disagree about whether basic skills must be taught before writing and thinking*

Giving kids a leg up

Educators are debating how best to help deprived kids succeed in school

When Lyndon Johnson signed the Elementary and Secondary Education Act of 1965, a landmark law establishing the first major federal role in public education, he did so with the declaration that no child should be relegated to failure in school "by the accident of birth." The law's cornerstone was a program to help disadvantaged students overcome the handicaps of poverty and succeed in the classroom. Earlier this month, Congress and the U.S. Department of Education celebrated the silver anniversary of "Chapter 1" with two days of ceremonies and congratulatory hearings.

But the promise in Johnson's 1965 declaration resounds with irony today. The proportion of disadvantaged children in the nation's schools is rising, and black and Hispanic students, who are disproportionately poor, are expected to make up 40 percent of public-school enrollment by the year 2000, up from 25 percent in 1985. According to a report released earlier this year by the federally funded National Assessment of Educational Progress, the average black and Hispanic 12th graders read at roughly the same level as the average eighth-grade white student, and the average 12th-grade black student writes only slightly better than the average fourth-grade white student.

Equally distressing, the question of how best to help poor children catch up in the classroom has no clearer answer than it did 25 years ago when LBJ's program was launched. Despite an appropriation that this year reached $5.3 billion, or 22 percent of the federal education budget, Chapter 1 has raised achievement only marginally. If the program's performance were displayed on a heart monitor, says Mary Jean LeTendre, head of Chapter 1, "We'd either pull the plug or get out the clappers."

JOANNA B. PINNEO—*USN&WR*

Corridor tutoring. *Segregation from the classroom*

Chapter 1 was built on the seemingly logical assumption that disadvantaged students must master basic skills—arithmetic, grammar, vocabulary—before tackling reading, writing and problem-solving. Because the program was compensatory in nature, it was believed that the pace of instruction needed to be slowed dramatically to be effective. Thus, for 25 years Chapter 1 students have typically received 35 to 40 minutes a day of reinforcement in low-level skills, typically doing exercises in workbooks or, increasingly, on computers. The process

s been reinforced by the widespread use of standardized tests that measure basic skills, like punctuation, in isolation.

But increasingly, critics charge that endless drilling in mechanistic basic skills is a flawed strategy. The approach deprives students of the opportunity to hone reasoning skills that are also critically important to good writing and other types of academic achievement, they argue, and fails to tap students' natural curiosity about the world around them. In many Chapter 1 classrooms, they report, students are required to do endless fill-in-the-blank-type exercises when, in fact, even as kindergartners many are able to write simple sentences. "They are asked to crawl and crawl and crawl. No wonder, when they are finally asked to walk, they can't do it," says Henry Levin, a Stanford University education professor who heads a network of schools in several states trying to push disadvantaged students beyond basic skills.

Poetry and science. Levin and other experts maintain that disadvantaged students should be exposed to more realistic language through stories, poems and songs; that they should be encouraged to write even before they are able to read, and that they should be given simple projects in science and other subjects that spark their enthusiasm as well as their analytical skills. Perhaps most critical, they say, educators must have higher expectations for disadvantaged students.

In Norma Peterson's first-grade class at Daniel Webster Elementary School in San Francisco, compensatory education looks much different from the drilling and testing typical of Chapter 1. Students gather in a semicircle on the floor and take turns constructing sentences that include as many words as possible from a vocabulary list drawn from "The Little Red Hen," which Peterson recently read to them. Later, they turn to writing simple sentences in an illustrated "book" they are writing about a red hen. Grammar instruction is incorporated into the writing session.

Daniel Webster is part of Levin's Accelerated School Project, which is now in its fourth year. Though its students are among the most impoverished in San Francisco, the school last year posted the greatest gain in language achievement among the city's 69 elementary schools. Charles County, Md., and other school systems are introducing a related classroom innovation known as "whole language instruction," which is also designed to push disadvantaged students beyond basic skills.

In reshaping the classroom, Levin's project takes aim at another pillar of the Chapter 1 program: The practice of pulling students out of their regular classrooms for remedial instruction. Many educators applaud the personal attention that Chapter 1 students get, arguing that it is akin to small-group tutoring. But students frequently miss out on important in-class teaching while in Chapter 1 sessions, in many instances making it tougher rather than easier for them to keep up. Indeed, LeTendre says that the prevalence of "pull-outs" results in students' receiving on average only 10 to 15 minutes more instruction a day than they would get without Chapter 1.

Ironically, the tendency of Chapter 1 programs to remove kids from the regular classroom results in large measure from congressional demands that funds be spent on the neediest students; segregating Chapter 1 students simply made it easier for school administrators to show visiting federal auditors they were in compliance. In general, Congress's good intentions turned Chapter 1 into a rigid bureaucracy preoccupied with regulations rather than results, says LeTendre. Today there are nearly 54,000 schools serving 4.9 million Chapter 1 students, and many of them have an aide assigned to do nothing but handle Chapter 1 paper work.

Some aim too low. Amendments to Chapter 1 passed two years ago have sought to address the criticism that removing kids from the classroom stigmatizes them; the law grants schools greater flexibility in spending resources, including permitting those with large numbers of disadvantaged students to fund schoolwide projects of their own. The legislation also required school systems to set performance standards for Chapter 1 schools, though LeTendre says that in many instances the standards have been set too low, requiring only that students not fall further behind their classmates.

What's more, educators increasingly question whether addressing only the academic difficulties of disadvantaged students, as Chapter 1 attempts to do, is sufficient for such students to be successful in their school careers. "Students are coming to school with many emotional needs that must be met," says Principal Frank Beltrán of Robert F. Kennedy Elementary School in Los Angeles. "They are full of anger and frustration. Educators have to deal with these problems if we want to enable children to take advantage of the regular school program."

The reason is clear: What it means to be poor and socially disadvantaged has changed dramatically over the past quarter century. The ravages of drugs and violence and the disintegration of family have led Yale child psychiatrist James Comer to argue that schools must draw mental-health specialists, counselors and especially parents into the schooling process far more fully if they are to successfully educate disadvantaged students. Using a model he developed in two New Haven schools, Comer is working with over a hundred schools nationwide to address students' psychological needs by establishing mental-health teams, building bridges to parents and introducing a "social skills" curriculum.

As the challenge to educating the burgeoning disadvantaged population in the nation's schools becomes more complex, so too must the solutions. Chapter 1 increasingly appears to be a billion-dollar Band-Aid. ■

BY THOMAS TOCH WITH NANCY LINNON

CHICK HARRITY—USN&WR

Alternative strategy. *High expectation and lively classrooms*

Bigots in the Ivory Tower

An alarming rise in hatred roils U.S. campuses

By NANCY GIBBS

Whoever haunted Sabrina Collins' room in Longstreet Hall had a knack for terror. The black Emory University freshman came home one evening last month to find her teddy bear slashed, her clothes soaked with bleach and NIGGER HANG written in lipstick on the wall. When death threats began arriving in the mail, college officials supplied extra locks and an alarm system. This month, as she got ready to move out, she lifted the rug to find DIE NIGGER DIE written in nail polish on the floor. Sabrina collapsed and was hospitalized for "emotional traumatization."

This naked display of racism is only one example of a general "breakdown in civility" on U.S. campuses. Such is the theme of a report that will be issued this week by the Carnegie Foundation for the Advancement of Teaching, which surveyed American colleges for a year before compiling *Campus Life: In Search of Community*. Though the report's language is muted and scholarly, its message is loud and clear: the "idyllic vision" of college life "often masks disturbing realities," including racism, sexism, homophobia and anti-Semitism.

Fractured civility, in fact, seems a tepid description of campus behavior that sometimes borders on the barbarous. This past fall, frat members at the University of Mississippi scrawled KKK and WE HATE NIGGERS on the naked bodies of two white pledges and dumped them on the campus of Rust College, a mostly black school nearby. At Bryn Mawr, freshman Christine Rivera found an anonymous note slipped under her door. "Hey Spic," it said, "if you and your kind can't handle the work here, don't blame it on the racial thing . . . why don't you just get out. We'd all be a lot happier." Members of the Hillel Foundation at the University of Kansas found a letter taped to the door. "Jew-Boy get out," it said. "I'm going to burn your Torah."

In the heat of such boiling hatreds, it is hard to sustain any notion of the university as a protected enclave devoted to opening minds and nurturing tolerance. Instead, many campuses seem to distill the free-floating bigotries of American society into a lethal brew. Since 1986, according to the Baltimore-based National Institute Against Prejudice and Violence, more than 250 colleges and universities, including top schools such as Brown, Smith and Stanford, have reported racist incidents ranging from swastikas painted on the walls to violent attacks and death threats.

Virtually every minority group finds itself under fire. For blacks, the trigger is often affirmative action: whatever their backgrounds or abilities, black students may find themselves viewed as beneficiaries of lowered standards. Last fall the University of Virginia accepted more than half the blacks who applied but only one-third of the whites, even though the blacks' average Scholastic Aptitude Test scores were 194 points below the whites'. At a time of rising competition, and with no sense of the past injustice that affirmative action seeks to redress, white students use such statistics as battering rams. "Affirmative action is organized governmental racism against white people," charges Temple University student Michael Spletzer, co-founder of the White Student Union. "Individual merit should be the only criterion."

Asian students are attacked for the opposite reason—for "curve busting" on grade scales and raising the level of competition for jobs in such fields as math, sci-

STEVE LISS

UNIVERSITY OF MASSACHUSETTS After a history of racial troubles, students held a candlelight vigil last fall to commemorate Civility Week

BOB CHILD—AP

YALE Gay-rights supporters protest homophobia on campus

ence and engineering. "I hear Asian jokes a lot," says a junior at the University of Illinois. "You're going to get out of the university and make $80,000, so people can make fun of you while you're here." In the case of gays and lesbians, fear of AIDS has brought homophobia out of the closet: of 1,411 reports of "gay bashing" on college campuses in 1988, 227 were classified as AIDS related. At Penn State, for example, a group calling itself the Committee for an AIDS-Free America tacked up posters with skulls and crossbones around campus and the message: HOMICIDE HAS A DEFINITE PLACE AT PENN STATE.

Jews too have found that in a climate that seems to tolerate intolerance, incidents of harassment are on the rise. A Trinity University fraternity in San Antonio was placed on probation after requiring a Jewish pledge to dress in a Nazi uniform and parade through the campus cafeteria. Jewish women are derided as "Jewish-American princesses." At Cornell and elsewhere, students wear T shirts reading SLAP-A-JAP! and BACK OFF BITCH, I'M A JAP-BUSTER! "Anti-Semitism masked as sexism is more socially acceptable," says Rabbi Laura Geller, director of the Hillel Jewish Center at the University of Southern California, "because, unfortunately, sexism is still an accepted form of bigotry."

It is not only fellow undergraduates who harass and intimidate. Many students charge universities with "institutional racism" for failing to recruit more minority faculty members, broaden the curriculum and show more sensitivity on race issues. At Trinity College last May, a campus guard entered the university's computer room. Of the 40 students in the room, just one was black. For no apparent reason, the guard singled out the black student and asked for his ID card. "For blacks, it's an alien environment," says Eric Dixon, a broadcasting student at the University of Texas. "The school incubates segregation. It can't control students, but it can change attitudes. It isn't fulfilling that aspect."

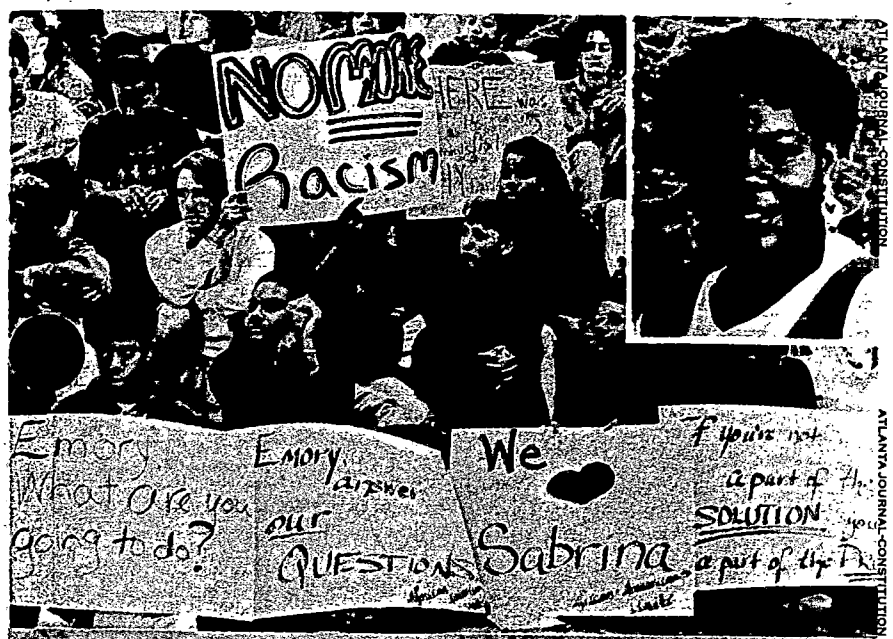
The need for a change of attitudes arises from some experiences common to the current generation, the first to come of age after the civil rights battles of the '60s and '70s. Most parents of today's undergraduates remember Freedom Summer and the Selma march, but somehow they have failed to impart the lessons to their children. When confronted with the name of Malcolm X, the Black Muslim leader, for example, one white student at the University of Massachusetts at Amherst innocently asked her professor, "Who is this Malcolm the Tenth?" Says Daniel Levitas, executive director of the Atlanta-based Center for Democratic Renewal: "We have today a whole young society that has not been called to conscience."

Many students have had no firsthand experience with different cultures until they arrive on campus and walk squarely into the middle of a grand social experiment. In the past two decades, college after college opened its doors at last to women, minorities, the poor, the disabled. Not only are most campuses far more diverse than they were 20 years ago, they are also vastly more heterogeneous than most high schools or neighborhoods. Under such hermetic conditions, the chemistry has proved volatile and relations explosive.

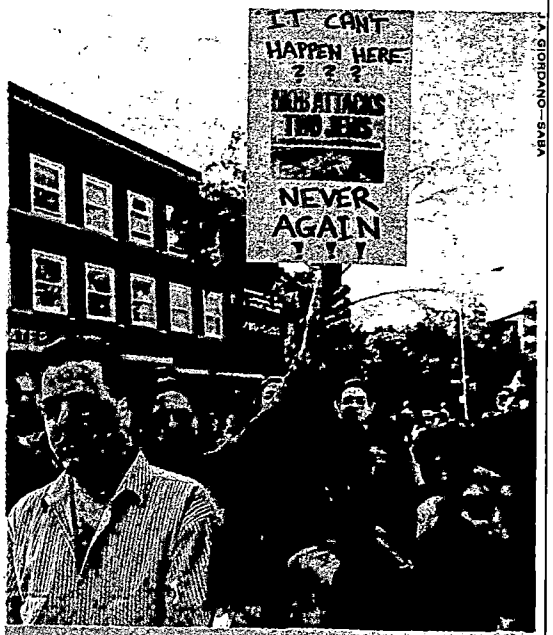
The impact of constant racial friction on student life is profound. Nonwhite students suffer tremendous pressure to outperform their classmates just to beat the stereotype. Some drop out rather than battle on; others move to schools they consider more supportive. Those who decide to remain often segregate themselves at single-race cafeteria tables or cultural centers, fueling complaints of cliquishness and militancy. "I can't believe they would accuse us of being reverse racists," says Brown undergraduate Martina Johnson. "For 45 minutes out of the day I want to be comfortable. I want to not need to have my guard up."

University officials, and many students as well, are fighting to reverse the trend by cracking down on bigots and joining in consciousness-raising efforts. Many freshmen-orientation programs now include seminars and workshops on race relations, ethnic diversity and homophobia. This school year Columbia University organized a mandatory "multicultural sensitivity-training" session for 1,800 new students. "These things may seem kind of Mickey Mouse," says William Damon, chairman of the education department at Brown. "But I'm in favor even of symbolic gestures because it does communicate to young people what the priorities are."

Elsewhere there have been some unlikely victories for old-fashioned activism. Few could have imagined that Toni Luckett, a lesbian and an Afro-American studies major with spiked hair and a flair for quoting Malcolm X, could build a minority coalition and get elected student-body president at the University of Texas. Long a stronghold of white frat men, the university had no experience with firebrands. Luckett is changing all that. Preaching confrontation, Luckett has staged rallies that have put the university on notice that recent racial incidents cannot go unpunished. "The issues have been burning for years," she says. "We'll take to the streets, do whatever it takes, any means it takes." For her efforts, she has found



EMORY UNIVERSITY The hate campaign against freshman Sabrina Collins, inset, prompted undergrads to hold a silent demonstration



BROOKLYN COLLEGE A rally against fraternity members who beat a Jewish student

threats in the mail and MANDELA-LUCKETT, RIP scrawled on the walls.

The best place to battle willful ignorance and bigotry, of course, is in the classroom. Teaching that strengthens reason over reflex, curiosity over insularity may help improve students' behavior outside the classroom as well. Though the changes are often controversial, many colleges have revised their curricula to include courses in non-Western cultures and values. Fewer and fewer of the history and literature surveys focus exclusively on the West European heritage. "The curriculum has been radically realigned," says Carnegie Foundation president Ernest Boyer. "Minorities have insisted on it, women have insisted on it, and frankly it's made universities dramatically better places."

But some other antidotes, however well intentioned, may prove more toxic than the racial poisons they are meant to cure. Nowhere is the First Amendment more imperiled than on college campuses. In the past two years nearly a dozen schools have cobbled together policies outlawing insulting and demeaning speech. At the University of Connecticut students may be expelled if they use "derogatory references" or "fighting words" to harass anyone face to face. Yet if such bans succeed in suppressing obnoxious impulses, they merely drive them underground—along with many ideas that deserve to be aired, if only to kindle a more heated debate.

UNIVERSITY OF WISCONSIN The Eau Claire campus newspaper ran a racist cartoon

Faculty members vehemently denounce what they call the Thought Police for muzzling the free exchange of ideas, however provocative or unfashionable. Many professors charge that the bans invite misinterpretation and self-censorship. Last May, for example, a Brown art professor canceled a screening of *The Birth of a Nation,* the D.W. Griffith classic about the Ku Klux Klan, because the local chapter of the N.A.A.C.P. opposed it.

The Carnegie Report and others like it are searching hard for ways to rebuild the sense of community that should characterize the campus—and society at large. The report prescribes a "Campus Compact" that universities must adopt if they are to restore peace to the ivory tower. The compact embraces principles of justice, openness and discipline that are meant to form the foundation of a "community of learning." But no seminar or speech or required reading will change overnight the attitudes embedded in a culture that children absorb while growing up. Nor will they easily break the cycle of hate. "If you can't have a university that lives together with some degree of civility and integrity amidst the diversity," asks Boyer, "how can we expect our cities and towns to do the same?" —*Reported by Naushad S. Mehta and Susan Tifft/New York and Richard Woodbury/Austin*

Voting with His Feet

In a protest that was as alarming as it was original, Harvard Law School professor Derrick Bell last week declared not a sit-in but a walkout: he announced that he would take a leave of absence at the end of this academic year and would return to work only when Harvard added a tenured "woman of color" to the law faculty. "I cannot continue to urge students to take risks for what they believe," he said, "if I do not practice my own precepts." Added Bell, whose salary is about $100,000 a year: "I will view removing myself from the payroll as a sacrificial financial fast." His action won praise from colleagues all over the country, though no one else chose to follow suit.

The immediate cause of Bell's decision was Harvard's refusal to consider tenure for visiting professor Regina Austin, a black woman on the law faculty at the University of Pennsylvania. In rejecting Austin's candidacy, Harvard cited a three-year-old rule prohibiting tenure offers to visiting professors. But that technicality did not blunt Bell's anger at the school's hiring policies, which he once characterized as an attempt to recruit people "who look black and think white." Bell, who is black, now concedes that the description was "a bit unfair." But he still sees a "gap between the school's saying 'We're trying as hard as we can for diversity' and the hiring record." That record fully supports Bell's complaint: despite the administration's attempts to increase minority representation, the law-school staff of 60 tenured faculty boasts only three blacks (all men) and five women.

A faculty for surprise

The key obstacle in many disciplines, according to various studies, is not simply racial or gender discrimination but also a scarcity of qualified candidates. Of 3,553 doctorates offered in the humanities in 1988, for example, 2,791 went to whites, and only 110 to blacks, 138 to Hispanics, and 197 to Asians. Last year the Washington-based National Research Council reported that of 13,158 Ph.D.s awarded in the sciences, only 275 went to blacks. Although black university enrollment has increased slightly in the past year, chances for substantial improvement are hardly promising.

The paucity of talent, meanwhile, has led to an unseemly bounty hunt, with big-budget schools scrambling to offer huge salaries and perks for highly qualified minority candidates. The State University of New York recently lured black African-studies expert Ali Mazrui from the University of Michigan with a seductive phone call from Governor Mario Cuomo and a salary of $105,000.

Bell has been inundated with offers from other schools since his announcement but has no plans to move. With all its shortcomings, he says, "Harvard is actually ahead of many other places." ■

Return to the Blackboard Jungle

A TIME *correspondent describes the troubles of his alma mater*

By RICARDO CHAVIRA

In its 94-year history, Los Angeles' San Fernando High School has turned out enough distinguished graduates to fill a classroom. They include Heisman Trophy winner Charles White, former National League Rookie of the Year Gary Matthews, University of Louisville basketball coach Denny Crum and rock-'n'-roll legend Ritchie Valens. San Fernando also produced Xavier Velázquez, an honor student and school vice president who was one of a group of students who met with President George Bush last year to discuss education. But Velázquez, a senior who hopes to attend M.I.T. in the fall, is one of the fortunate few: roughly half of those who began tenth grade with him have dropped out, lured by the drugs and gangs that infest the surrounding neighborhoods.

GARY MOSS

At troubled San Fernando High: paying the high price of neglect

San Fernando, my alma mater, is fairly typical of the sprawling L.A. Unified School District, the nation's second largest. And typically, it is in deep trouble. Despite vigorous efforts by a strongly committed core of teachers and administrators, the school's vital indicators are startlingly bleak. The yearly 20% dropout rate is more than double the California average, and a quarter of the student body is absent on any given day. In reading and math, San Fernando seniors rank in the bottom 5% statewide.

When I graduated in 1968, dope and gangs were already invading our campus, which is tucked into the far northeastern corner of the San Fernando Valley. Black and Latino students were in ferment over civil rights, and there were ugly clashes with white students and teachers. Black pupils rioted for several days to protest the murder of Martin Luther King Jr. Only a full-scale police occupation of the campus restored order. Today nine security guards, two of whom carry pistols, keep violent confrontations and drug use on the premises to a minimum.

The racial balance has changed dramatically. During my time, Latinos represented about 40% of the school population and 15% district-wide. Now Hispanics, many of them newly arrived and poor, account for 92% of San Fernando's student body; in the district they form 59% of the total, up from just a fifth in 1978. Of the school's 3,000 pupils, nearly half are enrolled in bilingual or English-as-a-second-language classes. "This is very much a port-of-entry school," says Bilingual-ESL Program coordinator Pat Reynosa. That means, says Reynosa, that in addition to having limited or nonexistent English, many of the students must cope with the pressures of grinding poverty (a median family income of $17,000; 18% on welfare) and the anomie common to refugees. And since Hispanics are America's fastest-growing ethnic group, San Fernando's problems will be increasingly echoed throughout U.S. public education.

"We are an island in this community. We can't keep problems from coming in."

"I've never had so many kids with so many needs," says school nurse Susan Mitchell. In a typical week she and other officials assigned to the school's crisis-intervention team may counsel students who abuse drugs and alcohol (or whose parents do so), aid rape victims, deal with youths contemplating suicide or Central American refugees suffering war-related stress. Student pregnancy is so common that there is a minicampus for expectant mothers and a nursery for students' children. "If these kids came from nurturing families, we could all go home," says Mitchell. "But these are families who have to work in sweatshops twelve hours a day. The children have nowhere else to turn." In contrast to two decades ago, today San Fernando's teachers and administrators are addressing home and community problems that affect students. "I had a student who wasn't getting her work done," recalls Bud Schindler, who runs a campus counseling program and teaches English composition. "Well, it turned out she had seen a person shot dead in front of her home. She had to see a psychologist before she could focus on her classwork." Says principal Bart Kricorian: "We are an island in this community. We can't keep problems from coming in."

MOSS

A nursery for students' babies

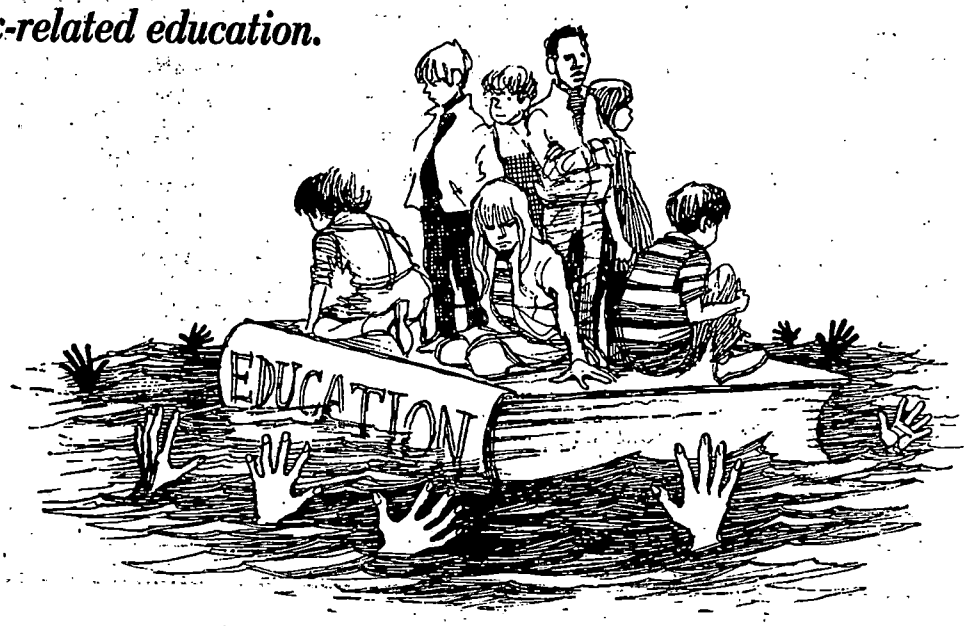
Critics of the mess blame everyone: parents for not stressing the importance of education and responsible behavior, teachers for succumbing to burnout, the system for failing to adapt to the changing needs of L.A.'s inner-city schools. All are valid observations. Yet even if those challenges did not exist, San Fernando and L.A.'s other troubled schools would be facing a daunting financial crisis. The school district this year must trim an estimated $200 million from a $4 billion budget, and some 3,000 jobs will be eliminated. Assistant school superintendent Amelia McKenna calculates that even without the cuts, the system is short 1,500 critically needed bilingual teachers. Thirty years ago, California was nearly unsurpassed in its expenditure per student; today it ranks 40th nationwide. "We are the richest country on earth, but look how little we are doing for these students," says community activist Lupe Ramirez.

L.A. school-board member Leticia Quezada, a Carnation executive, says that unless government invests sufficiently in the rehabilitation of schools like San Fernando, the U.S. will continue to slip as an economic power. "We have success stories, but overall there's a sink-or-swim attitude, and increasing numbers of kids are sinking," she says. "Are we willing to pay the price for not investing in education?" ■

Lynn Martin

Teaching Tomorrow's Skills

We need both basic and work-related education.



BY ELEANOR MILL

Robert J. Samuelson ["Gibberish on Job Skills," op-ed, July 11] has entered a debate on an issue critical to the future of the American economy. Should our students have an education experience that is relevant to the world of work. Samuelson thinks not. I believe they should. Samuelson also says that "the best way to motivate students is to impose academic standards with teeth." I couldn't agree more.

The commission that produced the report that Mr. Samuelson criticized drew its recommendations from talking to employers about what skills entry workers need and from talking to students about why too many of them become turned off by the learning experience.

Beyond listening to employers and to students, the value of work-relevant education is driven by two basic assumptions: First, the workplace has changed and will continue to do so, and second, employers' hiring patterns have changed. We must enable the American work force—today's students and those already at work—to acquire the skills necessary to hold good jobs and to cope with a dynamic workplace.

Earlier this month I received the first report of my Secretary's Commission on Achieving Necessary Skills (SCANS). This report describes what skills are needed by all workers for a successful career in the "modern" economy. It states that everyone needs *competencies* and a *foundation* of basic and higher order thinking skills and personal qualities that foster discipline and self-confidence if students are to succeed in the 21st century. The report is a first in a several step process to produce the accountability measures that Samuelson believes are key to improved educational results.

The SCANS report calls for *all* students to acquire five competencies—the ability to: (1) allocate time, money and other resources (for example, to prepare schedules and budgets); (2) understand and use technology; (3) evaluate, process and use information, including the use of computers; (4) work with others as a teacher, negotiator, and team player; and (5) understand, monitor, improve and design social, organizational, and technological systems. The point of these work-based competencies is to enhance the capability of work force entrants and to motivate students to learn better the educational basics Samuelson correctly insists are so important.

Samuelson seems to agree with us about the foundation, but he disagrees with how those skills should be provided. We believe that schools—and workplaces—must provide structured opportunities for their acquisition. Some of our chief global competitors agree. A recent European Community report recommends that students acquire many of the SCANS skills *through basic education.*

Some critics believe that if schools would only return to the good old days of high standards and the 3Rs, the nation could effectively deal with international competition and new technology. We agree with the need for high standards and the 3Rs. Indeed, we estimate that fewer than half of all 21 to 25 year olds are adequately prepared in reading, writing and mathematics. But today's world requires even more. We agree with Samuelson that the value of a high school diploma must be restored. Diplomas must reflect the demands of a changing workplace for broader skills beyond the 3Rs.

The commission includes representatives from industries that would be out of business if their product lines were unchanged from that of 40 years ago: IBM making card punch machines instead of personal computers, Motorola making car radios but not cellular phones, GE making refrigerators but not jet engines, MCI not even in the business of phone services. Why should schools and their curricula remain unchanged during this revolution in every other aspect of our lives?

The educators and the business and labor representatives think it is important for workers to understand the bigger "system" in which they are operating and the actions needed to improve it. Take Motorola for example. It is one of the few American companies to win an increased market share in the Japanese pager, cellular phone and semiconductor markets and a Malcolm Baldridge Award for excellent quality. Motorola uses the five competencies to drive its Six Sigma Quality Program and is committed to not more than three parts per million defects in products or service to its customers.

When I visited union apprenticeship programs, the value of contextual learning was driven home when many young people told me that they finally understood why learning basics such as math was important. They said, "It's needed for the job."

Equally important, school districts have incorporated some elements of the SCANS approach into their teaching methods—with real success. Dayton, Ohio, to take one example discussed in a Post editorial [July 14], has "placed new emphasis on critical thinking, problem solving and hands-on activity for students. It's a procedure that forces teachers away from a strict reliance on texts and into demonstrations that require student participation." The result: "Students in five out of six of the elementary grades—and in eight out of 11 grades overall—showed more than one year's worth of improvement from 1990 to 1991."

These skills are not narrow and apply to all kinds of jobs in every field. They are not easy to acquire and acquiring them is to call all students to a higher standard. Samuelson asks if the commissioners believe this "nonsense." Well, the letter I signed to parents, employers and educators suggested that readers of the report "not take our word for it" about the competencies. We—the commissioners and I—asked them to test the conclusions in their own communities and offered to help them do it. Samuelson's suggestion is that, instead, you not read the report and hope for a return to the good old days of the 19th century school. I think not.

Taking Exception

The writer is secretary of labor.

Seizing control of school disasters

EDUCATION ■ California is the latest to take over a system in ruins

Deregulation has become a mantra of the school-reform movement, the notion being that cumbersome state and federal regulations are preventing local officials from coming up with creative solutions to local problems.

Yet when California Governor George Deukmejian earlier this month signed a law granting the state broad powers in running Oakland's foundering school system, it marked the third instance in this still young school year that local education officials have been stripped of their authority. Similar moves in New Jersey and Massachusetts, and the passing of laws in several other states to permit such intervention, suggest the problems many localities have in meeting the complex task of administering public education.

Graft and chaos. The political popularity of deregulation was attested to at the education summit in Charlottesville, Va., last month, where President Bush and governors of all political stripes committed themselves vocally to the idea of greater local flexibility in achieving excellence. But in spite of the high-level rhetoric, the recent school-system takeovers suggest that the challenges facing local schools are daunting. The 53,000-student Oakland district, the state's fifth largest, has teetered on the financial brink for months and has been the target of a broad corruption investigation. Already, eight past and present employes have been charged with embezzlement and theft. The system's academic programs are a shambles: Oakland's twelfth-graders scored in the bottom 5 percent on statewide reading and math tests last year. Pointedly, over 50,000 Oakland residents signed petitions urging passage of the takeover bill.

The law is tough, requiring the Oakland school board to draft and implement a "recovery plan" to straighten out finances, streamline its management practices and improve its educational programs. The plan must be approved by California's superintendent of public instruction, Bill Honig. Also, the law directs Honig to name a "trustee" to monitor the school system's progress toward recovery, and he may grant the trustee veto power over any and all of the Oakland board's actions if it fails to implement the recovery scheme.

MICHAEL MACOR—OAKLAND TRIBUNE

Elementary woes. *Lacrecia Brandon signals one school problem*

Takeovers are drastic moves, but they appear to be warranted by the utter failures of the local systems involved. Last month, New Jersey's board of education unanimously authorized a takeover of the 28,000-student Jersey City public schools, the state's second-largest school system, citing "deep and chronic problems" that include widespread political patronage, nepotism and cronyism; corrupt management, and academic failure. The board disbanded the city's school board and relieved its superintendent and five other top administrators of their duties. Under the takeover, authorized by a 1988 law pushed through the Legislature by Governor Thomas Kean, the state will run the city's schools for at least five years.

Other states are taking different approaches in dealing with local disaster areas. The 3,500-student Chelsea, Mass., school system opened under the management of Boston University this fall, the first time ever that a public school authority has been placed in private hands. Massachusetts Governor Michael Dukakis signed legislation last June granting the university control of Chelsea's schools for 10 years, after the school board in the impoverished blue-collar town of 25,000 sought BU's help in countering a shrinking tax base, crumbling buildings and a 52-percent dropout rate.

Legal leverage. New Jersey's is one of eight sweeping "academic bankruptcy" laws enacted by states this decade that permit the takeover of any school system failing its students; perhaps a dozen other states have similar statutes on the drawing boards. Proponents of takeover laws argue that the possibility of being put out of business by the state will motivate local educators sufficiently that, in the end, states will actually be able to ease their regulatory hold. Perhaps. But Kati Haycock of the Children's Defense Fund notes that, because state performance standards are typically minimal, only school systems with the most egregious records run the risk of takeover. Indeed, New Jersey was the first state to use its takeover power. Further, takeover laws apply to entire school systems and thus present no threat to miserable schools in middling districts.

As the dismal experiences of Oakland, Jersey City and Chelsea suggest, turning public education around surely will be much more than a matter of permitting local school systems to chart their own course. ■

by Thomas Toch

THE ROCHESTER EXPERIMENT

FOURTH IN A SERIES

The hard lessons of school reform

This week, a Carnegie Corporation report, "Turning Points: Preparing American Youth for the 21st Century," calls for the creation of "small communities of learning," connecting schools with their communities and empowering teachers to make more decisions. For two years, Rochester, N.Y., has been trying to do that and more in an ambitious effort to fix its public schools.

The meeting at the exclusive Genesee Valley Club featured all the key players in Rochester's education-reform effort: School district and teachers'-union officials, academics, civic and business leaders. They came at the invitation of a new generation of entrepreneurs who are eager to make education the centerpiece of the city's economic future. During dinner and for several hours afterward, ambitious, sometimes grandiose proposals were discussed. But of the many voices heard, it was Eastman Kodak President Kay Whitmore's sobering remarks that may be remembered the longest. "Be prepared to work very hard and for a long time," he told the younger men. "The more time I spend on it, the more complicated it gets."

Whitmore's blunt assessment of a few weeks ago sums up the status of Rochester's experiment, which *U.S. News* first examined two years ago. The Valley Club summit is proof that the momentum is still building. The core leadership that launched the experiment has been expanded. National education experts have been brought in to assist. While the reforms have not yet translated into dramatic improvements in the performance of the district's 32,000 students, three fourths of whom are poor, and either black or Hispanic, there has been progress. Decisions are being made at the school level, teachers are involved with their students, new teachers are being mentored by veteran colleagues and some innovative programs have begun.

There is also more evidence that this city of 236,000 people is emerging as a national model for urban-education reform. President Bush visited Rochester last month and witnessed the schools' growing link with the business community. Recent teacher contracts in Boston, Los Angeles and Cincinnati drew on Rochester's experience. And the Carnegie report's emphasis on middle schools reflects a major change already under way in Rochester. The district has replaced junior high schools with middle schools as a way to target the special needs of students in grades 6 to 8.

At the end of the experiment's second year, it is clear that the relationships between the key players have been crucial to keeping Rochester on track. It is also clear that each of those players has learned lessons that are emblematic of the pervasive frustration and enormous promise that are the bookends of Rochester's effort to better educate its children.

Leadership. The two people whose common vision remains at the center of the experiment are Peter McWalters, the superintendent of schools, and Adam Urbanski, the leader of the 2,400-member teachers' union. The two were teachers in Rochester during the 1970s, and it was their long hours of discussions in 1987 that led to a landmark contract that September, making Rochester's teachers among the highest paid in the nation in exchange for greater accountability and commitment to the students.

Since then, McWalters and Urbanski have survived stormy budget and personnel battles and charges that they spend too much time traveling around the country talking about Rochester's plan. They each have more incentive to stay for the long haul; McWalters signed a new four-year contract last September, and last month Urbanski was easily elected to

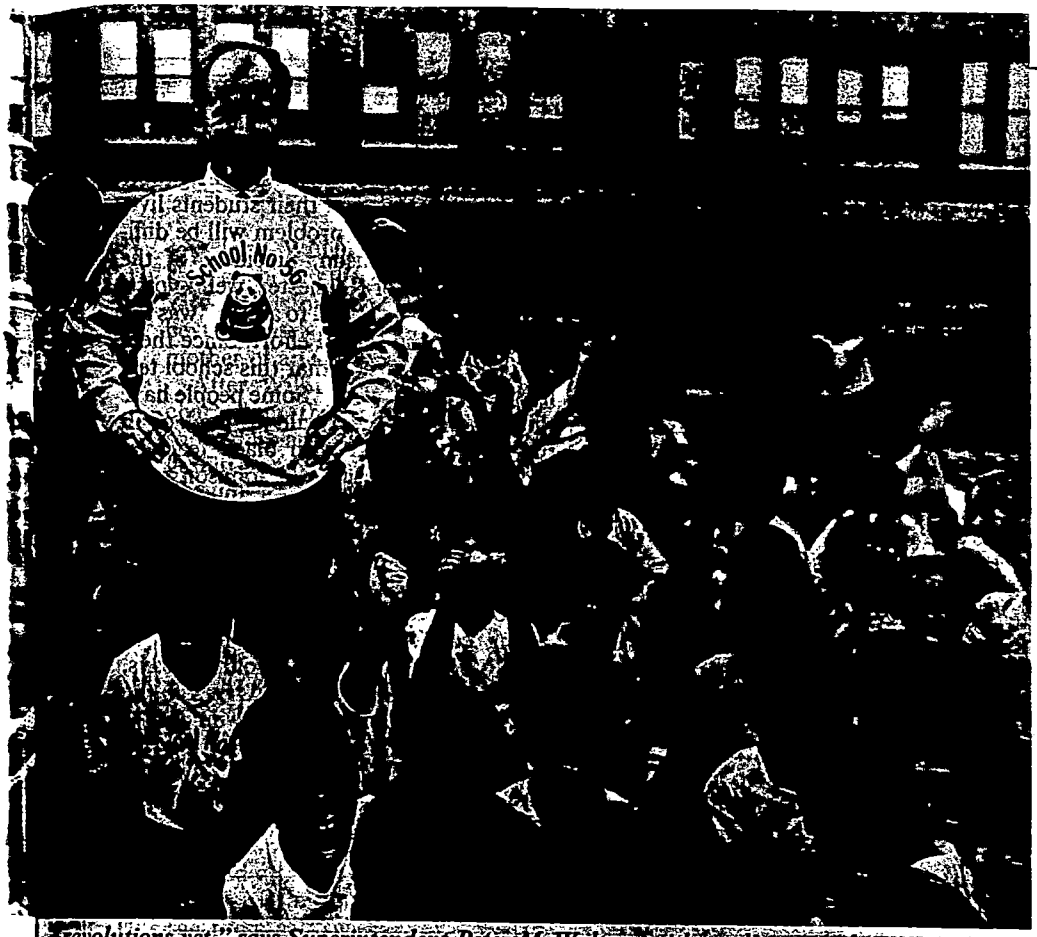
PHOTOS BY LINDA L. GREIGHTON FOR USN&WR

A long, uncertain journey. *"We have no huge School 56. "But with little steps, we're reaching*

Rochester's two-year report card

School-based management	B
Teacher-student relationship	C
Business-community involvement	C+
Linking schools with area colleges	C
New instructional programs	C
Cutting the bureaucracy	C
Overall grade	C

Comments: These grades are based on interviews with the principal figures in the school-reform effort and *USN&WR* observations. Since they are composites, elements in each category may be higher or lower.



revolutions yet," says Superintendent Peter McWalters, with reading-award winners at more and more of these kids. Just seeing them with books gives us reason for hope."

Radical surgery. *"Some people say we have to fix our system before we can make changes," says union President Urbanski, with a group of teachers. "That's sloppy logic. We have to make big changes in order to make our system better."*

his fifth two-year term as president of the Rochester Teachers Association. Their agreement on key issues has been so extensive that each is regularly criticized by his constituents for being co-opted by the other. But there are no signs that the partnership is waning. "It has long since ceased being a matter of choice," says Urbanski. "It's a matter of necessity."

He and McWalters are learning, however, that making their schools safe for democracy is not easy. Planning teams, including administrators, teachers and parents, are in place in all of the city's 50 schools. Principals are starting to share authority, sometimes reluctantly, on issues ranging from the lunch menu to faculty vacancies. Still, many teachers do not feel empowered, and they worry about being unfairly blamed if student performance does not improve.

For McWalters, the most troublesome development is that too many teams are lapsing into debating day-to-day matters while losing sight of the larger issues. "Starting with hallway security is all right," McWalters says. "But we can't have people talking about everything but instruction." Ironically, when curriculum is being discussed, there is concern that the teams will be reluctant to approve innovative ideas that upset the status quo.

Kodak's big picture. From the beginning, the Rochester experiment has depended on engaging the business community. That has made the relationship that McWalters has developed with Kodak's Whitmore crucial. Kodak, with 47,000 employes in Rochester, is the area's dominant economic force and the company most adversely affected by an unskilled work force. Early on, Whitmore got heavily involved in the school issue. Kodak has loaned executives to the district, and it is the driving force behind the Rochester Brainpower Program, a business-schools partnership that includes an ad campaign and career counselors working in the schools.

The key to the chemistry between McWalters and Whitmore is that egos and finger pointing have mostly been put aside. Their time together "at the table" has led to a strong sense of personal respect and mutual trust. "In the past, when I saw a superintendent at a dinner, we would chat mostly about the weather or sports," Whitmore says. "Peter and I talk about education." For McWalters, it is as though he has an alter ego in the city's most important institution. "Kay is at the fifth and sixth layer of detail, while some people are still at the point where they think that this idea of helping black kids is kind of cute."

Whitmore's biggest concern is that Rochester's nonacademic track, part of New York State's two-track education system and home to a majority of the city's students, is "a system geared to just moving people along." There is general agreement in Rochester that learning is minimal in that track and standards of achievement almost nonexistent. "You can go through it for 12 years and easily come out functionally illiterate," Whitmore says. Over all, Rochester's dropout rate still exceeds 25 percent.

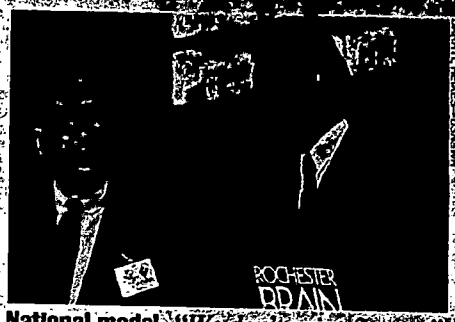
Fixing such a system costs money, but it also requires ideas. Marc Tucker, president of the National Center on Education and the Economy, a nonprofit think tank that moved to Rochester last August, has stepped into that breach. The center's principal mandate is to draw on the nation's best educational minds to aid Rochester, then apply the lessons elsewhere.

Tucker's team has made some important contributions. For example, with the help of a $200,000 grant from the Rockefeller Brothers Fund, the center conducted an intensive three-day training session last February for elementary and secondary-school-based planning teams. David Rockefeller, Jr., is a member of the cen-

ter's board, as is pollster Louis Harris. The center, with Harris's help, is beginning an eight-month community survey to determine what skills Rochester's graduates will need for future jobs.

Tucker's dilemma has been to get close to each of the major players but remain sufficiently independent to retain their collective trust. Most important, he had to refute the charge that the center is a group of know-it-alls hoping to hitch themselves to Rochester's educational bandwagon. Locating the center downtown, a few blocks from school headquarters, and not on the Genesee River campus of the University of Rochester, helped to blunt that suggestion. "If we are going to be of help, we have to roll up our sleeves just like everyone else," Tucker says. But he adds, more from frustration than surprise, "With all the activity, all the late nights, we may have touched the lives of perhaps 3 percent of the people involved."

Reaching the community, particularly the parents of students, is a fundamental objective of the reform effort. But that is proving to be difficult, partly because



National model. *"We don't point fingers," says Kodak's Whitmore with Bush. "There's plenty of blame to go around."*

both sides have fallen back on stereotypes and inaction.

Inevitably, race is a factor. In contrast to the student population, Rochester's teaching force is 75 percent white, and most teachers live in the suburbs. Many black parents, for example, are still not convinced that white teachers are committed to their children's education. That view is given some credence by the reluctance of many teachers to make home visits, a critical part of the district's home-base guidance program, in which teachers become mentors to individual students. Teachers argue that they are being asked to become social workers, and some are afraid to visit the neighborhoods where many of their students live.

Overcoming this problem will be difficult, as Bill Johnson, president of the Urban League of Rochester, well knows. The league's 1985 "call to action" was the catalyst for the school effort. Since then, Johnson has learned that this school test has few easy answers. "Some people have this notion that if we could just replace all the white teachers with black teachers we'd have commitment," Johnson says. "That's not the way it works."

Adam Urbanski is fond of saying that time, not money, is the most precious ingredient in Rochester's experiment. He and others contend that significant and lasting changes will require five to 10 years of effort. But as Bill Johnson says, "That means most of the kids now in the system will not be helped very much." If that is true, it is the harshest lesson of Rochester's experience so far. ■

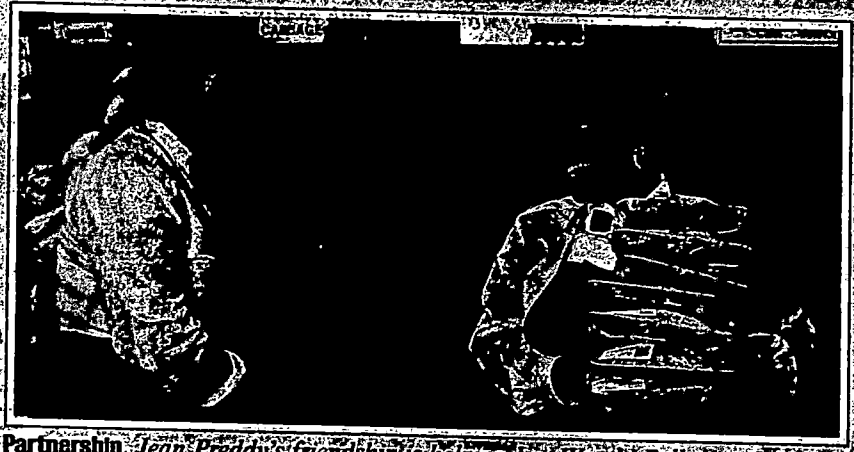
by Jerry Buckley

WORK-STUDY PROGRAM

A local business invests in the kids

For LouWanda Bell, like so many poor kids in Rochester, birthday No. 16 was sure to be a turning point. That's when dropping out of school becomes legal in New York, and LouWanda was tempted. School was hard and college unaffordable. Then, she heard a radio report about a new program sponsored by Wegmans, the area's largest supermarket chain. The offer was attractive: Wegmans would provide tutoring and a part-time job to a small group of inner-city students. If they stayed in school, Wegmans would pay $5,000 a year toward each student's college tuition.

Selection process. LouWanda, looking forward to her senior year at John Marshall High School, is now one of 38 students in Wegmans' Work-Scholarship Connection. For Wegmans, which has 13,000 employes in the area, the program was a way to help the schools and develop a new pool of employes. The company hopes to expand its program to 100 students. But with 10,000 kids in high school, Rochester needs to develop many more such incentives. That may prove difficult because unlike a supermarket chain, many other companies do not have jobs for which teenagers are qualified.



Partnership. *Jean Preddy's friendship is helping LouWanda Bell to make it.*

The amount Wegmans eventually spends on tuition—the first graduates are a year away—will be small compared with the investment it makes in selecting the students and keeping them in the program. Wegmans works with teachers and principals to choose 14- and 15-year-olds considered middle-of-the-road, meaning they have some academic or discipline problems but show potential. The application process is more stringent than it was at first, when students failed to transfer good work performance in their part-time jobs to their studies. Now, each student accepted must complete a 10-week training program that includes a course on study skills. Then, students are assigned academic mentors, usually college students from Wegmans' regular scholarship program, who monitor their academic progress and provide their parents with a weekly report.

Mentors at the Wegmans stores are equally important. Jean Preddy, a 56-year-old mother with three grown children, has become like a second mother to LouWanda, whose mother died seven years ago. "These kids need to know that people care about them," says Jean. LouWanda is grateful. "I'm not sure I'd still be in school without this program," she says. Now she is planning to be the first member of her family to go to college. ■

Lessons from the trenches

EDUCATION ■ Theodore Sizer has a grand vision of salvaging our ailing schools. But his pioneering efforts at reform show why they are still a mess

The rhetoric is familiar, and so are the results. Seven years after a blue-ribbon commission warned, "If an unfriendly foreign power had attempted to impose on America the mediocre educational performance that exists today, we might well have viewed it as an act of war," America's public schools remain mired in mediocrity. Last month, in what has become a depressing quadrennial exercise, a government-sponsored National Assessment of Educational Progress report indicated that most 17-year-olds cannot read well enough to understand a newspaper editorial. And although they won't admit it, parents, educators and corporations are privately wondering to themselves: Are America's schools a lost cause?

KEVIN HORAN FOR *USN&WR*

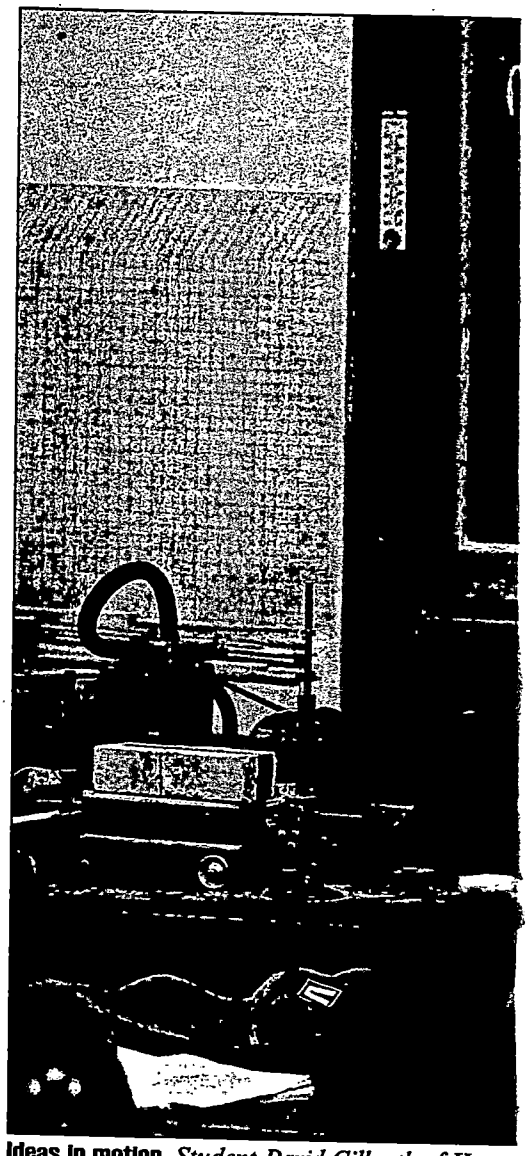
Mind on reform. *Sizer*

No one is better qualified to answer that question than Theodore Sizer. The respected, 57-year-old former Harvard education dean and current Brown University professor has been laboring in the educational trenches the past six years, logging thousands of air miles traveling among the Coalition of Essential Schools, a network of 52 reform-minded schools that he organized in 1984.

Drawing on 1960s progressivism to achieve today's goal of rigorous academic standards, Sizer urges radical reforms, such as the abolition of the traditional eight-period day and a "less is more" teaching philosophy that has students studying a few topics in depth rather than racing pell-mell through textbooks.

To Sizer, the nation's secondary schools have become vast, impersonal "shopping malls" that present intellectually docile students with a smorgasbord of courses but fail to teach them the basic academic subjects solidly. Despite his professorial demeanor and a career that includes a decade as headmaster of Massachusetts's prestigious Andover academy, Sizer is a populist. He believes all students, not just the college-bound, can thrive on rigorous academic courses, not merely electives like shop and typing.

Under the right circumstances, Sizer's bold prescription can work. In the few schools where his ideas have taken root, dropout rates are down, attendance and test scores are up, more students are going to college, and there is a genuine enthusiasm for teaching and learning. Indeed, the coalition's flagship, Central Park East Secondary School in East Harlem, has emerged as one of the nation's most heralded public schools since its founding in 1985 (see page 54).



Ideas in motion. *Student David Gilbreth of Hope*

Sizer's ideas now resonate from the White House to state capitals. Last month, Citicorp, the financial giant, gave Sizer $3 million, and a multimillion-dollar anonymous grant is forthcoming. He

THE KEYS TO SCHOOL REFORM

At the heart of Theodore Sizer's reform effort are nine principles reflecting a populist mix of 1960s student-centered learning and an emphasis on rigorous performance standards.

1 Academic focus

The paramount purpose of public schools should be to teach students "to learn to use their minds well." Schools should not be "comprehensive" at the expense of intellectual rigor.

2 Less is more

Teachers should teach fewer topics more deeply and not be slaves to a syllabus or textbooks. "Mastery"—not "coverage"—should be the schools' watchword.

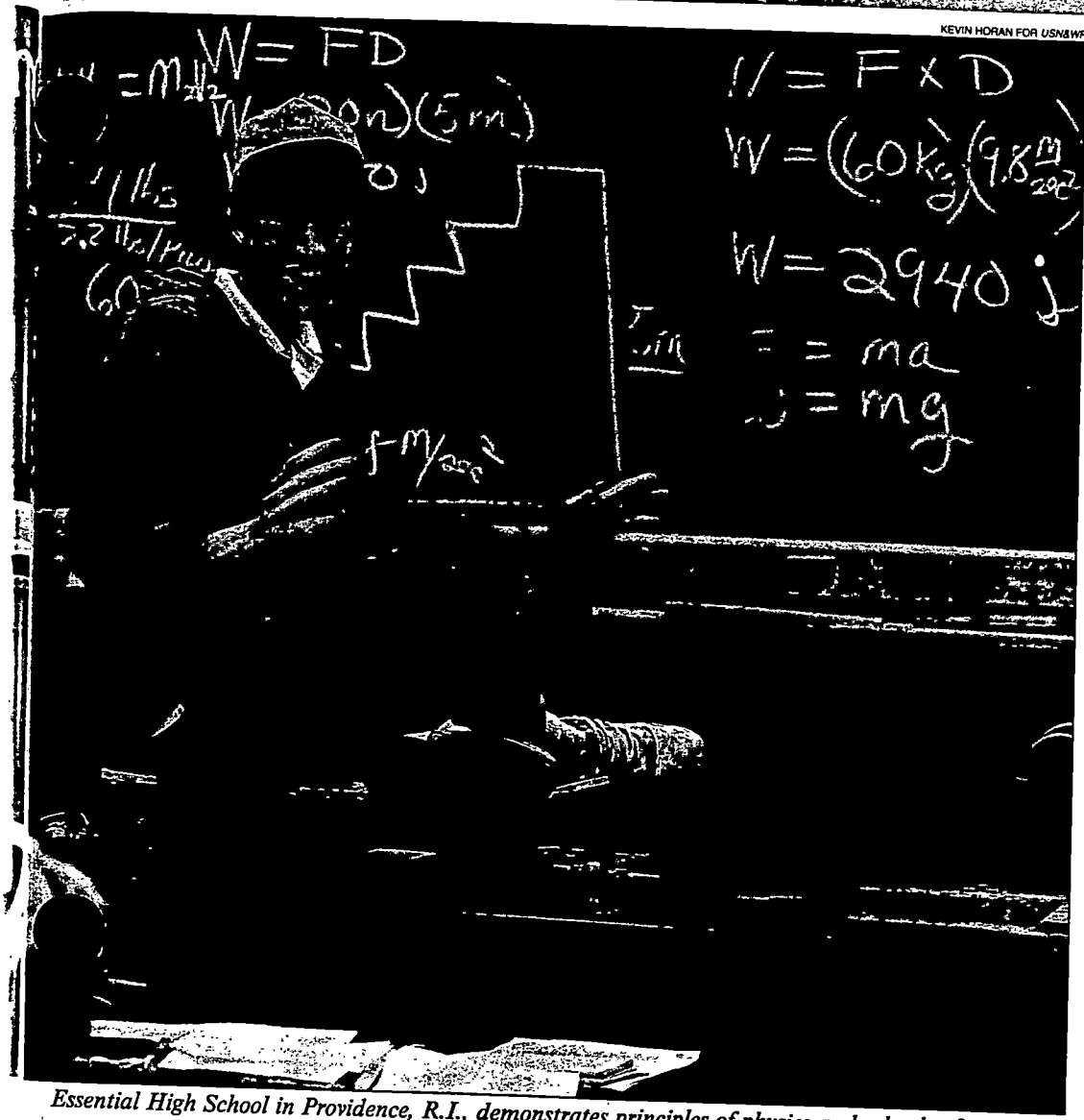
3 Universal goals

Academics should be a priority for *all* students. No student should graduate with a purely vocational education. "An intellectual education is every citizen's right and need."

4 Personalizing

To reduce anonymity, teachers should teach no more than 80 students each semester. Power over schedules, teaching materials and curriculum should rest with the teachers and principals.

KEVIN HORAN FOR *USN&WR*



Essential High School in Providence, R.I., demonstrates principles of physics and school reform

seemingly has all the ingredients for success: A credible recipe for reform, lots of money and a number of schools committed to making improvements.

But Sizer's laboratories of reform are struggling, as he readily admits. A host of obstacles have hindered the reform effort, many of them having to do with human nature: Fears, jealousies, entrenched habits. A close look at Sizer's experience—his frustrations and his successes—shows the difficulty of translating principles into practice in the trenches.

The enemy within. Teachers, the very people who should be advocating reform, have posed one of the biggest obstacles. Far from embracing new ideas, teachers often feel threatened by them. Improvement still means change, and change—both real and imagined—challenges teachers' routines, values and, sometimes, their livelihoods.

Even in schools where the faculties have volunteered to join Sizer's coalition, teachers have resisted his emphasis on academics at the expense of an array of electives, fearing it will mean scuttling many of the courses that they believe "comprehensive" high schools should offer. At Brighton High School, near Rochester, N.Y., teachers recently voted to leave the coalition, in part because they feared losing their jobs. That concern had been stirred years earlier by the dismissal of a home-economics teacher, and the teachers of courses like physical education and business skills saw Sizer the academic as a threat as well.

This kind of faculty opposition to curriculum pruning has made it impossible to free up enough time during the school day for smaller, longer and more in-depth classes, a move that Sizer and other reformers insist is essential to turning education around. The conventional 45-minute class period, Sizer believes, does not permit the kind of extended discussion required for students to get below the surface of a topic and seriously exercise their minds. In the Houston suburb of The Woodlands, for instance, faculty fears about schedule changes, echoed by the surrounding community, scuttled coalition membership. At McCullough High School in 1985, Principal Joe Westmoreland had expressed interest in joining the coalition, and Sizer flew south to address the local Rotary Club, in the hope of winning community support for his program. But the staff and the community feared that coalition membership would

5 Student as worker

Teachers should model themselves after athletic coaches, advising and encouraging students rather than lecturing at them; students should b[illegible]orkers" who [illegible] their own e[illegible]ion.

6 Demonstrating competence

Students should be passed only after showing mastery of subjects. Multiple-choice exams should be replaced by essays and projects that answer "essential questions" about course content.

7 Attitude

Schools should foster decency, trust and high expectations. Parents should be "essential collaborators" in promoting these values.

8 Staff

Teachers and administrators in schools should share teaching, administrative and counseling duties. Teachers should be generalists, willing to teach more than one subject.

9 Budget

Better schools need not be expensive. The cost of running high-quality schools should be roughly equivalent to that of traditional schools.

sink extracurricular activities that, in Texas, are often taught as "classes" during the regular school day. Football is a special concern in the town, where attendance at the local AstroTurf-clad stadium often tops 10,000. Given the restructured school day recommended by Sizer, team members would have found it difficult to meet for drills. After a deluge of angry phone calls, coalition membership was scrapped before even coming to the school board for a vote.

Cynical veterans. Frequently, the most vehement opposition to change comes from veteran teachers who have had to endure one pedagogical gimmick after another. At Hope High School, near Sizer's Providence, R.I., headquarters, Sizer was up against the deep-seated cynicism of teachers who had endured racial violence, 12 principals in 13 years and deep staff cuts. Since teachers are "riffed" by seniority, only the school's most senior teachers survived the layoffs, and many of them mistrusted the Ivy League reformer. Only after a year of heated negotiation did Hope's suspicious faculty permit the creation of a Sizeresque "school within a school"—a program with only five teachers and 100 students, about one tenth of the student body. Since then, tension between coalition teachers and the school's "regular" faculty has been tremendous; to many regular teachers, Hope Essential High School is "Hope Superfluous." The backbiting underscores how teachers who "put their necks out are viewed as troublemakers; they are ostracized," says Sizer. Indeed, despite its high test scores, the Hope Essential school remains a limited program, confined to one floor of the Depression-era building.

KEVIN HORAN FOR *USN&WR*

Ironically, Sizer has encountered as much teacher resistance in affluent suburban schools as he has in beleaguered inner-city schools, though the reasons are different. At Brighton, for instance—"a BMW and Benetton kind of place" by one student's description—teachers argued that change was not needed since high percentages of their graduates were already going on to college. Sizer was unsuccessful in shaking

SARAH LEEN—MATRIX FOR *USN&WR*

Study in contrasts. *McMullough High School in The Woodlands, Tex., rejected Sizer's reform principles early on, in part out of fears that elective courses like typing, above, would be abolished. Head teacher Wendy Aronoff, left, of Hope Essential High School in Providence, R.I., has scrapped the lectern to coach her student-centered discussions of literature*

their complacency with his contention that even many college-bound students are intellectually docile.

No school, Sizer has learned, can be improved without a principal who is reform minded and able to lobby artfully for change. That was not the case at Brighton, where many teachers feel the coalition was thrust on them by Principal Tom Jones. As one faculty member warns, "When you impose stuff on us, we'll rebel." Such bitterness helped kill Brighton's limited attempt at reform, leaving the school with little more than a few reformed classrooms and a lone Coalition of Essential Schools coffee mug on Principal Jones's desk.

Even when teachers eagerly embrace reform, those who can easily break out of old classroom habits are a rare exception. In history teacher Bob Henschen's class at Westbury High School in Houston, students carry on a spirited debate about the turn-of-the-century labor movement. Some argue the employers' point of view, others take the workers' side. Henschen moves around the room Donahue-style, asking questions of both groups that leave them momentarily stumped. Then he retreats to the back row and lets the debaters take over, injecting only to push them deeper into the subject. "I want to know why, why you think that. Why?"

A freewheeling classroom style is not for everyone, however, and some find it downright threatening. It means relinquishing a degree of classroom authority, putting up with more chaos and noise and maybe not reaching the end of the syllabus by June. Perhaps most disconcerting, it means a greater chance of questions arising that might expose gaps in a teacher's knowledge. In addition, many teachers find it difficult to allow students just the right measure of freedom without losing control. Unlike Bob Henschen's classroom, in another Westbury High class recently, an advanced group of students could be found working dutifully at an in-class assignment on poetry. But other students were wandering the room, talking about sports and compact discs. One strutted around, "accidentally" slamming into his peers while the teacher struggled to maintain discipline.

Asking a different question. The essays, projects and other "exhibitions" that Sizer urges as alternatives to traditional multiple-choice tests are especially tough on teachers, because it's trickier and more time-consuming to create assignments that take students below the surface of a subject. As Hope High School history teacher James Charleson puts it: "Under the old system, the question would be 'Who was the King of France in 800?' Today, it is 'How is Charle-

Learning by two. *Biology collaboration at East Harlem's Central Park East.*

The way things are supposed to work

It's ironic that Sizer's reforms have been most successful not at some wealthy suburban school but at Central Park East Secondary School in East Harlem. With 75 percent of its sophomores' reading scores above the New York City average, the 400-pupil junior-senior high school has been widely praised since opening in 1985.

The school works because it uses Sizer's principles. At CPE, traditional subjects are scrapped in favor of 2-hour courses called "humanities" and "math/science." And unlike traditional classes, which each September set out to cover a sprawling syllabus, these Sizer-style courses cover discrete, year-long themes like "justice."

Dave Feldman's ninth-and-10th-grade math/science class follows Sizer's dictum of student-as-worker. As students do their physics problems, not individually but helping each other in small groups, Feldman only occasionally takes to the blackboard. Most of the time, the kids do the work as Feldman hustles around his classroom both answering questions and asking them, the personification of Sizer's idea of teacher-as-coach.

While CPE administers city and state-sponsored multiple-choice tests, the school's own tests are Sizer-inspired "exhibitions." Last fall, CPE's ninth-and-10th-grade math/science classes were required to answer an "essential" question: "How do we move?" Students had to use the math and physics that they learned to design an amusement-park ride, which they then had to explain in calculations, diagrams and an essay on Newton's laws.

This kind of academic overhaul helps CPE students learn, but it also helps teachers teach. By following Sizer's scheduling, CPE gives teams of teachers large blocks of time every week to plan classes—an opportunity that the frenetic pace of typical high schools rarely allows. As a result, teachers at CPE control what's taught and how. But that power doesn't threaten administrators, because at CPE they all teach.

CPE also works hard at building ties between students and faculty. "You can talk freely to teachers here, and they listen," says ninth grader Damian Stanley. CPE's curriculum makes it one of the few coalition schools to meet Sizer's demands for a low student-teacher ratio. Of equal importance, teachers stay with the same group of students for two years at a time. Everyone at CPE is addressed by first name. To her students, CPE Principal Meier is "Debbie."

Yet, despite CPE's successes, Meier is locked in a struggle with New York State education authorities that has put the school's future at risk. Meier is battling new curriculum regulations that would force CPE to abandon its interdisciplinary classes and innovative exhibitions. If the regs stick, says Meier, she'll shut the school's doors.

magne important to your life?" It's thus not surprising that a 1988 evaluation of the coalition commissioned by Sizer found only "scattered" evidence of successful exhibitions.

For their part, students have grown comfortable with the roles they've been asked to play in traditional classes—listening silently at their desks to lectures and rehashing what they've taken in. As a result, the coalition's credo of student-as-worker has been a hard pill to swallow. "It's more work, more responsibility," says Alexis Alix, a senior at Hope Essential High School. More than two dozen students transferred out of Hope Essential into less demanding schools in 1988-89.

Unexpected costs. Because breaking old classroom habits has proved so difficult, a tremendous amount of time and money must be spent retraining teachers to achieve the radical reforms that Sizer advocates. As Principal Deborah Meier of Central Park East puts it, "It's not simply a matter of changing teachers' attitudes. We've got to change their behavior as well." The coalition's most successful schools have spent large amounts of grant money—in the case of Hope Essential High School, nearly $200,000—on sabbaticals, travel, summer study and other initiatives that have helped teachers master Sizer's demanding methods. While Sizer spends the bulk of his $1 million-plus annual budget training teachers in coalition schools, it's still not nearly enough, he believes.

Beyond the school doors, crazy-quilt regulations, wary unions and a host of other political barriers compound problems for reformers. The best coalition principals fight a guerrilla war against bureaucrats. Central Park East's Meier, for example, managed to bolster her staff by hiring Edmond Canova, a top-notch physicist and popular—but then-uncredentialed—teacher, through an ad the school ran in the newspaper. But she was able to do so only through the good graces of the United Federation of Teachers, New York City's powerful teachers' union. To UFT President Sandra Feldman, Central Park East's hiring of teachers outside of formal channels is "very radical" and tolerable only because the city is not, for the moment, in the throes of layoffs.

Reformers also run afoul of a raft of state regulations, including many introduced in recent years by reform-minded policymakers. Texas's teacher-evaluation system, in which state-trained regulators actually sit in on classes and rate the teachers, sounds like a sensible idea, but educators in coalition schools say that, in practice, the system stifles creativity. Being judged by measures such as "organizes material and students" and "manages student behavior" dis-

courages teachers from having the kind of raucous discussions that make a Sizer classroom great. Instead it rewards a very traditional lecture, argues McCullough's Westmoreland.

Sizer's Compromise. Once disdainful of politicians and their rhetoric, Sizer has come to recognize the value of creating a public agenda for school reform. He recently struck a bargain with governors in six states: He'll launch as many as 10 coalition schools in each state if they agree to put up funding and pledge to waive burdensome regulations and run other types of political interference. It's too early to gauge the value of such political bargaining, but he believes it's probably the only way his grass-roots, school-reform effort is going to survive.

Despite all the walls Sizer has hit, and despite the less-than-satisfying accomplishments of his reform coalition over all, there is clear evidence that his ideas do get results. In addition to Central Park East's successes, 90 percent of Hope Essential High School's class of 1989, its first graduating class, went on to higher education; only 6 percent of the seniors in Hope's traditional high school—an academically comparable group at its start—graduated. In Baltimore, Walbrook Essential School's dropout rate is under 2 percent, compared with 23 percent for Walbrook High School as a whole. Most instructively, at Thayer High School in Winchester, N.H., where the entire student body is in the coalition program, Principal Dennis Littky has boosted the college-going rate from 10 percent to 55 percent.

Beyond the numbers, there has been a transformation in the souls of many Sizer schools. At Fairdale High in Kentucky, social-studies teacher Jim Streible, a 30-year veteran, says that Sizer "has raised him from the dead." At Thayer, once known as a rough and intimidating school, Littky now reports "this is not an angry place." And on a chilly October night, as students easily tease him about the forthcoming student-faculty basketball game, it is easy to appreciate his claim.

Yet Sizer's reform effort stands on a thousand fault lines. In New York, a regulatory change threatens to scuttle Central Park East's innovative curriculum. A new, disagreeable principal at Texas's Westbury High would be all it would take to suffocate Bob Henschen's dynamic classes.

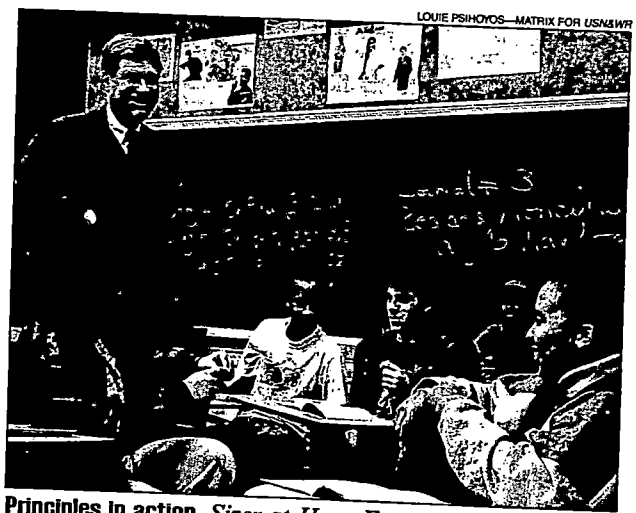
For those who preach "bottom up" reform, like the systems being tried in Miami and Chicago, where councils of teachers, principals and parents have been granted control over schools, the Sizer experiment should serve as a cautionary tale. Freeing schools by proclamation from bureaucratic shackles will not miraculously turn them around. Schools will, as Meier says, "do exactly what they've always done"—fail their students. It has taken enormous dedication and supervision to make Sizer schools work where they do.

Those who contend that reform can be imposed on schools, either through state laws or hostile takeovers, also have much to glean from Sizer's frustrations. His experiences at Brighton and McCullough show that a resistant faculty can throw a wrench into the most well-meaning reform effort. What's needed, as Sizer has learned, is some combination of freedom at the local level and the kind of steady coaching provided by Sizer and his staff.

Both conservatives and liberals can learn from Sizer. Coalition principals like Meier have made their schools great not with the traditional bromide of more authority but by making schools more intimate. Sizer also has shown that there's nothing cruel or elitist about demanding the best from disadvantaged students.

The teachers and administrators, students and parents who have taken Sizer into their midst now know full well that school reform is not some simple policy prescription. A Texas school must reconcile its love of sports and its belief in academics, a Rhode Island teacher her settled routines and her commitment to real learning. No one gets off easy. ■

by Thomas Toch and Matthew Cooper



LOUIE PSIHOYOS—MATRIX FOR *USN&WR*

Principles in action. *Sizer at Hope Essential High School*

America's 200-year-old conundrum

Almost since its inception, the United States has been embroiled in debate over the proper role of schools and the best methods of achieving quality education. The good results of one reform effort have almost inevitably led to a period of discontent, as national priorities shifted. Today's crusade to improve public education is but the latest chapter.

The first battle—to establish universal public education—was waged in the mid-1800s by Massachusetts's Horace Mann. As a result of this campaign, a patchwork of local schools was replaced by statewide educational systems throughout the country.

Creating a core. Following the emergence of a national system of free public high schools in the late 1800s, a group led by Harvard President Charles Eliot urged the establishment of a heavily academic core curriculum. This approach prevailed for two decades; only the best students were affected, however, since less than 10 percent of the nation's children finished high school in 1900. Child-labor laws and an influx of immigrants soon expanded the number and range of students entering public schools. This new pool of students gave rise to a movement called "progressivism," led by John Dewey, who argued that curricula needed to reflect the increasing diversity of student bodies. As a result, courses in woodworking, homemaking and other "utilitarian" subjects were introduced.

Progressivism remained a dominant force into the 1950s, when the launch of Sputnik jolted educators into re-emphasizing academics, especially math and sciences. These priorities gave way in the early 1960s to the civil-rights movement, which dramatically increased the educational opportunities of the non-English-speaking, the handicapped, women and blacks. In the 1990s, the focus is once again on rigorous academic standards, this time for *all* students, largely in the name of international economic competitiveness.

EDUCATION

Though socialism still rules the curriculum, students are encouraged to think for themselves. But did anyone tell the teachers?

RESTRUCTURING THE 3 R'S

BY NANCY TRAVER MOSCOW

Galina Boyko, principal of School No. 32 in Moscow, was teaching Russian literature to a class of 13-year-olds when a boy shot his hand into the air and asked about man's need for religion. Boyko, a 32-year veteran of the classroom, was understandably startled: religion has long been taboo in Soviet schools. But instead of avoiding the issue, she led her students through a 30-minute debate on the universal search for faith. "Before school reform, parents would have come to me, frightened that religion had even come up," Boyko said. "Now no one is surprised."

In School No. 79 across town, Principal Semyon Boguslovsky sat at a table with a handful of teenagers, each dressed in the blue blazer that most Soviet students wear. When Boguslovsky said free discussion in the classroom was possible on every subject, Volodya, 16, quickly spoke up. His face red with anger, Volodya said, "There is much talk, but nothing has really changed. We are already tired of talking." Instead of silencing his young charge, Boguslovsky said nothing, but his features took on a boys-will-be-boys look of resignation.

A few years ago, Boyko would not have handled the topic of religion with such confidence, nor would Volodya have had the last word. Now fresh breezes of tolerance are wafting through many Soviet schools, from first to tenth grade. Always considered a potent means of molding character, schools have been transformed into little laboratories of restructuring. Under Gorbachev, they are to change citizens from sheep into self-starters. Said Boguslovsky: "Soviet society requires not just a person who carries out orders but someone who thinks for himself. Our children are not mannequins, and our school is not a fortress."

To help children cope with the demands of a changing society, many teachers are encouraging a spirit of inquiry. Some ninth- and tenth-graders are choosing their own elective courses. Rote learning, long the mainstay of education for the 42 million students in the nation's 130,000 schools, is beginning to yield to free debate. Like America's system of local school boards, councils made up of trade-union and party members, parents and students have been created to give people more control over their children's classrooms. Boring textbooks that only timidly touched upon the terrors of Stalin have been withdrawn. Until new textbooks become available, articles from newspapers, enlivened by the candor of *glasnost*, serve as the main basis for history lessons. Once banned 20th century classics, such as Andrei Platonov's *Juvenile Sea*, have found their way into classrooms..

Despite these shifts, change is taking place within a narrow framework. Children must still be taught socialist values; how educators will reconcile that with the promotion of a freer learning environment remains to be seen. Some Soviets do not anticipate major problems. Said Boguslovsky: "I'm a Communist Party member, but I speak openly. To me, the two things are not mutually exclusive. I can be a Communist and also speak the truth."

Skeptics are not so confident. They say schools cannot lead the way to reform, they can only reflect society, not shape it. Some of the harshest criticism comes from *Uchitelskaya Gazeta*, a pro-reform teachers' newspaper that regularly berates the State Committee for Public Education and the Academy of Pedagogical Sciences. Those two mammoth bureaucracies oversee the nation's school system and train its 4 million teachers. Reformers believe that both block educators eager to try more innovative methods.

Some parents blame the teachers. For years, teachers have been one of the most conservative elements of Soviet society, barking orders like drill sergeants and demanding ready obedience. In many schools, parents are called in for collective meetings, where they hear their children denounced before other adults. Any mother or father who tries to defend his child does so at the risk of seeing him later punished by his teacher. Boyko agreed that many teachers are not prepared for reform. "They don't have the strength to change, or they think the old ways are just fine," she said.

Gennadi Yagodin, appointed last year as chairman of the State Committee for Public Education, has been blunt about the failings of teachers. Many cannot be replaced or re-educated, he says; the system is simply stuck with them. Money is another problem. Yagodin has promised to double the budget for new school construction and teaching materials. But the biggest need, he feels, is for free thinking. Says Yagodin: "The school badly wants more democracy." In the end, only a generation of new teachers, trained in the era of *glasnost*, may be able to carry out the sweeping school reform so crucial to changing Soviet society. ■

School No. 79: changing students from sheep into self-starters

School No. 32: even religion is no longer a taboo topic

Education

Bracing for Perestroika

New York's new chancellor vows to restructure a troubled system

It may be the toughest job in U.S. public education. But Joseph Fernandez, who takes over this week as chancellor of New York City schools, is itching for the challenge. Since he was tapped for the post last September, the onetime math teacher has commuted six times from Miami, where he served for two years as Dade County school superintendent. His mission: to confer with civic and union leaders, politicians, teachers, parents, the press and anyone else with a stake in the nation's largest (940,000 students), and perhaps most troubled, public school system. Says Fernandez: "I had to convince the city that I am serious about restructuring."

Few now doubt that Fernandez, 54, is serious. Born in East Harlem of Puerto Rican parents, the former high school dropout and University of Miami graduate comes to New York with firsthand knowledge of the city's racial and ethnic divisions. In Miami, he is credited with having transformed public instruction, a feat he hopes to duplicate in his new post. "We're losing the Gorbachev of American education," laments Andy Gollan, a spokesman for the Dade County school board. The question is whether the New York system, with its 27.3% dropout rate and entrenched tradition of cronyism, is ready for educational *perestroika.*

At the top of Fernandez's agenda is the abolition of the Board of Examiners, a city agency that duplicates many of the licensing procedures already required by the state. He also plans to push for a law banning the city's practice of allowing a principal to serve as the head of his school for as long as he wishes, a kind of lifetime tenure that Fernandez claims can shield poor performers. "I have a low threshold for tolerating incompetence," he says.

LISA QUINONES—BLACK STAR

Fernandez: itching for a challenge

"One thing I will never have is an ulcer."

New York's decentralized network of school boards is also certain to come under scrutiny. When Fernandez's predecessor, Richard Green, died last May, a third of the 32 district boards were under investigation for charges ranging from selling jobs to drug dealing. Fernandez wants more authority over these bodies, including the power to audit their books.

The centerpiece of the new chancellor's plan is "school-based management," an approach he introduced in Dade County. With this strategy, in use in 130 of Miami's 260 schools, much of the power has passed from elected officials to individual schools. Although student test scores have not improved and morale at some Miami schools has actually dipped, Fernandez remains committed to installing a similar program in New York.

Fernandez's detractors complain that he has an authoritarian manner and is too chummy with the local teachers union. He has already alienated city bureaucrats by appointing a deputy chancellor critical of the school system and by announcing plans to eliminate some 200 jobs at the board of education's central headquarters. Meanwhile, eyebrows have been raised over his hefty compensation package, which includes a $195,000 salary, free housing and $214,000 in supplemental pension pay. But Fernandez seems impervious to criticism."One thing I will never have is an ulcer," he shrugs. "I get angry and move on."

—By Susan Tifft.

Reported by James Carney/Miami and Janice C. Simpson/New York

Milestones

MARRIED. Oscar de la Renta, 57, couturier renowned for dramatic jewel-encrusted evening gowns; and **Annette Reed,** 50, philanthropist; both for the second time; in La Romana, the Dominican Republic.

SETTLED. By **Tom Bradley,** 72, mayor of Los Angeles; a lawsuit filed by the city attorney charging Bradley with violating state law by failing to report $160,000 of personal assets on annual disclosure forms; in Los Angeles. Judge Robert Weil ordered the mayor to pay $20,000 from his own pocket to settle the suit (the usual practice is to use campaign funds). Bradley remains the subject of a federal grand jury investigation of alleged violations of insider-trading laws.

RECOVERING. Rose Mofford, 67, beehive-coiffed Democratic Governor of Arizona; from surgery to remove her gallbladder; in Phoenix. Mofford, who succeeded Governor Evan Mecham after he was impeached and convicted in 1988, is expected to run for a full term this year, but has been under fire recently for commuting the sentences of two convicted murderers (the convictions were later voided by the state attorney general).

DIED. Ernest N. Dutch Morial, 60, first black mayor of New Orleans, from 1978 to 1986; of a heart attack after an attack of asthma brought on by 10° weather; in New Orleans. A civil rights lawyer who won suits to end segregation in the Crescent City's schools, taxis and airport, Morial in 1967 became the first black in Louisiana's House of Representatives since Reconstruction and later served on the state appeals court.

DIED. Billy Martin, 61, scrappy bantam who helped lead the New York Yankees to four World Series championships in the 1950s as a hot-hitting and fielding second baseman and in 1977 as a tactically shrewd manager; of injuries suffered when his pickup truck, driven by a friend who was charged with drunken driving, skidded off an icy road; in Johnson City, N.Y. Notorious for his barroom brawls, Martin was fired as Yankee helmsman four times by team owner George Steinbrenner, and was forced to resign once after remarking about slugger Reggie Jackson and Steinbrenner, "One's a born liar, and the other's convicted"—a reference to the boss's guilty plea for illegal contributions to Richard Nixon's 1972 campaign.

DIED. Thomas Blasingame, 91, believed to be the oldest working cowboy in Texas; in Goodnight, Texas. A bowlegged cowpoke, he started his career in 1916 at the JA Cattle Co. ranch for $30 a month and worked under the searing sun for the next seven decades. Blasingame was found lying on his back near a creek, his hands folded on his chest, his horse nearby—the way he said in a newspaper interview last summer he wanted to die.

Get Me a Ladder at The Library

Books are still king, but now there is so much more

When Chicago's new public library is completed in 1991, it will include a telecommunications hookup with all 86 branches, as well as a satellite downlink to draw programming from worldwide networks. Atlanta's public-library system operates its own channel on cable television, broadcasting literacy classes and interviews with authors. In Colorado more than 14,000 commuters a year find rides through a computerized information system run by the Pikes Peak Library District. And in Oregon the Salem Public Library lends audiovisual equipment and even personal computers. Welcome to the library of today.

Although books are still the chief business of libraries, these once quiet redoubts have vastly broadened their scope, branching out to serve their modern users' extended needs. One result is that despite tight municipal budgets and cutbacks in state and federal aid, American public libraries are experiencing a spirited renaissance. From 1988 to 1989, 111 new library buildings went up around the country, the greatest number in one year since 1979. Many of these were underwritten by new bond issues, voter-initiated taxes and private donations. Borrowers and browsers are streaming into the nation's 15,215 public libraries. In 1987, 57% of the American public used such facilities, up from 51% in 1978.

The revival knows no geographical boundaries. In 1985 Atlantans voted for a $38 million bond referendum that expanded the central library, constructed twelve new branches, started six modular libraries in public housing projects and bought $9 million in books. Washington State voters have gone to the polls at least nine times in the past five years to support bond issues aimed at renovating or building libraries. The budget for the New York Public Library soared from $60 million in 1981 to $127 million in 1989, thanks largely to government funds and the generosity of private donors. Even in oil-dependent Tulsa, citizens have voluntarily hiked property taxes to improve their libraries.

Perhaps the most impressive example is Detroit, a city ravaged by crime, poverty, a declining population and an eroding tax base. Practically the last thing local citizens might be expected to fight for is books, but they did just that when a money squeeze threatened to shut down twelve of the city's 25 branches in 1984. Detroit voters bailed out the libraries by approving a $1 million property tax by an impressive margin. In 1988 they renewed the levy. "People think their library will always be there," says Paul Scupholm, head of Detroit's independent Friends of the Library fund-raising group. "But when faced with its closing, they dig into their pockets."

Another reason for the energetic revival of libraries is that as city budgets have shrunk, library administrators and staffers have become more aggressive advocates. Once satisfied to stamp books and shush noisy patrons, librarians now write grant proposals, chat up community leaders and campaign for bond issues. Image is important. In 1988 the Public Library Association named its first ever marketing director in an effort to improve "customer" relations. "We're mobilizing our constituency," explains P.L.A. president Sarah Long. "We're targeting areas for special services."

As a result of this get-smart approach, public libraries no longer content themselves with walk-in trade off the street. Today they combine the hustle of a small business and the concern of a community center with facilities tailored to the tastes and needs of their users. Video rentals attract film buffs. Data bases, software and fax machines bring in budding entrepreneurs. Language and literacy classes entice the swelling number of urban immigrants. While parents browse, youngsters are entertained by puppet shows and storytellers. "Name any need and the library can help you," says Brenda Johnson, assistant director for Washington's public-library services.

Technology has made possible these

WEINER—GAMMA LIAISON

Atlanta underground: peripatetic readers browse in a subway library

DAVID FALCONER

MICHAEL L. ABRAMSON

Sharing a musical moment in Salem, Ore.; in Chicago, checking out a household necessity

A broader scope has paid off in the form of voter-initiated taxes and private gifts.

multiple roles, vastly expanding what libraries can offer and eliminating many economic disparities. Through the magic of computers, a branch located in the poorest section of town can provide the same information available in branches in affluent neighborhoods. A library in Philadelphia can retrieve data housed in far-off Los Angeles. "We're beginning to define the library beyond a physical place," says Michael Eisenberg, associate professor of information studies at Syracuse University. "When you think of it that way, where does the library end?" It doesn't.

In keeping with the new emphasis on marketing, libraries are increasingly providing services to businesses. The Louisville public library, for example, has its own patent collection. A dozen facilities around the country advise small firms on how to win federal contracts. Last July the Los Angeles Public Library introduced FYI, a fee-based research and document-delivery service that gives businesses access to 1,500 on-line data bases and a national library network. Once the desired information is located, researchers fax or hand-deliver it right to a client's desk.

The library's community-service role is also being redefined. For latchkey kids, the Seattle Public Library runs an after-school program complete with tutors who help with homework. San Francisco, with its multilingual population, offers a computerized card catalog in Chinese, Japanese, Spanish and Vietnamese. Some libraries provide boxes of discount coupons for grocery shoppers and one-day passes to museums; a branch in Chicago even lends ladders and household tools.

Along with new functions have come new problems. In many cities, brawls, drug deals and illicit sex in the rest rooms are not uncommon. In Washington's Mount Pleasant library last spring, a woman was found in a drug-induced stupor with a needle hanging out of her arm. The city's Martin Luther King facility trains cameras on its bathroom areas to discourage child molesters. The homeless, who nap at study tables and bathe in library rest rooms, are a growing constituency. To make space for regular users, the Tulsa public library in 1985 helped set up a day shelter, complete with showers and phone service.

Some critics complain that these new roles, while worthy, have taken libraries too far from their traditional mission of providing information. "If you love everything, you love nothing," grumbles Brown University president Vartan Gregorian, former head of the New York Public Library. Perhaps. But voters across the country are making it clear that modern, multifunctional libraries are something they are more than willing to support—and pay for. —**By Susan Tifft.**

Reported by Deborah E. Brown/Los Angeles and Sheila Gribben/Chicago

Everybody's Wild About Harry

The age's "new" Sinatra hits his snazzy stride

BY ELIZABETH L. BLAND

Females from 15 to 50 have been lining up outside stage doors across the country, waiting for glimpses of this 22-year-old crooner, and with good reason: coming from his sensuous mouth, *It Had to Be You* never sounded so fresh. He plays a mean piano too, and has been known to break into a soft-shoe, sit in for his drummer or do a send-up of Liza Minnelli. In short, Harry Connick Jr. is a showman, right down to his snakeskin shoes.

HANS NELEMAN

The young crooner plays a mean piano too

"Even now, when I see one, I have to play."

With a big band behind him and several thousand enthusiastic fans in front, Connick and his piano have taken center stage. On tour since November with his top-selling sound track from the summer hit *When Harry* (no relation) *Met Sally . . .*, he has extended his run through February to satisfy the crowds. And his retro good looks and easy charm have also helped land him his first film role, as a tail gunner in David Puttnam's World War II movie *Memphis Belle,* due by Labor Day.

But Connick is more than a flavor-of-the-month matinee idol. He is a musician of serious intent. His first major-label album, a self-titled jazz collection that included a superb rendition of the classic *On Green Dolphin Street,* was followed by a second, *20* (Connick's age at the time), that introduced his Sinatra-style vocals ("I am not a jazz singer. I call it swing"). The chart-topping *When Harry Met Sally . . .* will be followed this spring by two new recordings, one with vocals and a big band and another with a jazz trio, "for my soul. I need to play some piano."

It was the piano, after all, that got him going. Young Harry was flirting with the keys by age three and at five was good enough to play *The Star-Spangled Banner* at his father's inauguration as New Orleans district attorney. (His late mother was a judge.) His parents, who put themselves through law school by running a record store, loved to take their two children to the French Quarter on weekends to listen to the Dixieland and bebop bands on Bourbon Street. Local musicians, many of whom had dealings with the D.A., were glad to have Harry Jr. onstage. Having an audience was intoxicating, Connick says. "Even now, if I see a piano, I have to play. I don't care where it is. I guess it's from getting that attention every weekend."

Big Easy musicians, with their color-blind generosity and love of music, made excellent teachers. The renowned rhythm-and-blues pianist James Booker used to come round to the Connick home to teach young Harry. "Booker was a genius," says Connick. "The piano has been around for hundreds of years, and he figured out a new way to play it. I have more respect for him than for anyone I have ever known." Booker taught another lesson: Connick attributes his clean living, in part, to Booker's early death from drug and alcohol abuse when Connick was 13.

Pianist Ellis Marsalis, patriarch of the jazz clan, was another respected teacher, but it was his son Wynton who ultimately had more influence. Six years older than Connick, Wynton had made a national splash with his horn while Harry was still in high school. "I wanted to be Wynton. I wanted to be in his band. I dressed like him. I talked like him."

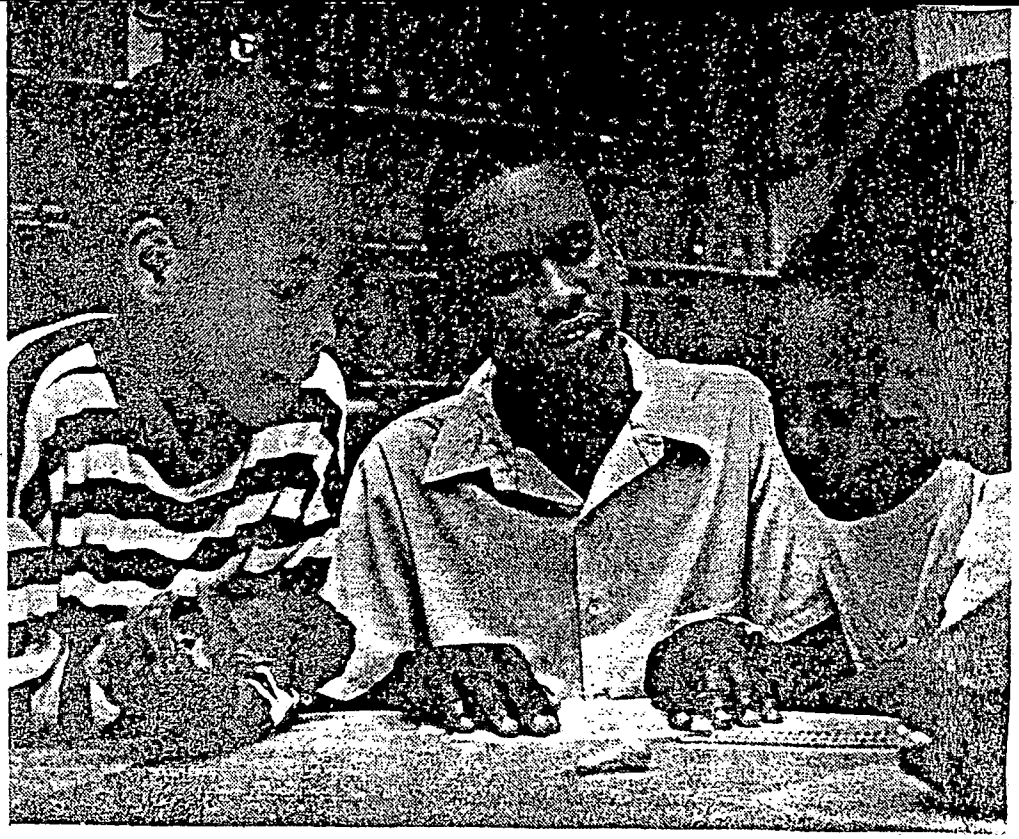
These days, though, Connick finds the studious Marsalis approach no longer suits, and he strictly follows his own path. Looking back to Louis Armstrong and Duke Ellington, he notes that those jazz greats had a proud history of performing. "Tell me they weren't entertainers, man. They would go out there and give the people a good time." To that end, Connick's latest role model is Frank Sinatra. Not only does Connick aspire to additional—though occasional—film roles, as well as to continue singing swing and playing the piano, but he may, like it or not, be on his way to becoming something of a sensation. So for now, Harry, it has to be you. ■

Blind Tutor Uses Humor to Teach

Spelling Improves In English—and Braille

WASHINGTON POST 7/12/90

By Daniel H. Pink
Washington Post Staff Writer



BY MARGARET THOMAS—THE WASHINGTON POST

Ronald Wells shows Braille to Patricia Westbrook, from left, Nate Harris and Valencia Brinkley.

At John Tyler Elementary School on Capitol Hill, spelling tutor Ronald Wells is known as a taskmaster.

"When you get to Ronald's table, you know you're going to get it," said Denise Dantley, his supervisor. "Ronald won't let you go until you get all the words right."

Despite his hard-driving manner, 16-year-old Wells has combined good humor and concern for learning to earn the affection of nearly all his young charges.

Most of them barely remember he is blind.

"I thought it would take awhile for them to adjust to me," said Wells, who has been [illegible] since birth, "but they adjusted pretty [illegible]. Now they're sort of like my younger brothers and sisters."

Each day during the school year, Wells traveled by bus to Tyler after he completed his classes at Eliot Junior High near Robert F. Kennedy Stadium, from which he graduated last month. For three hours each day, he drilled students—ranging from third to sixth grade—to prepare them for spelling and math tests. He was one of 240 District tutors in the STARS (Student Tutorial and Recreational Support) program, a Department of Recreation program designed to assist at-risk schoolchildren.

"I always had an interest in children. I tutored my cousin when he needed help, and I always felt that I could go from there," said Wells. His mother, Juanita Wells, a teacher's assistant, got him interested in the STARS program.

Every Thursday, teachers at Tyler, where Wells attended second through sixth grade, would read him the list of words for the following week's spelling lessons. Over the weekend, he would take the words and "Braille them up," he said, referring to the [illegible]tem developed in the 19th century that [illegible]s the blind to read. Using a special device, he would record the spelling lists by converting the words into a series of raised dots and points on a piece of paper.

At after-school sessions the next week, students from each grade level would approach Wells's table in the cafeteria, where in rapid-fire fashion he would quiz them on "superintendent," "kilometer," "refrigerator" and so on. The students would either spell the words aloud or write them in Braille, which Wells also taught them.

The tutoring had an impact. Darnell Darlington, for instance, went from a D to a B in spelling under Wells's tutelage. Darnell's mother, Jean Darlington, credited Wells for igniting her son's interest in school.

"The way he was talking to the kids, I didn't believe he was blind," she said.

The secret to Wells's success, parents and students agree, is his sense of humor and concern for students.

"Ronald makes it fun for you to learn because he kids with you," said 11-year-old Valencia Brinkley, who will be a sixth-grader at Tyler. "He makes you feel good. He keeps you laughing while you learn." This year she received an A in spelling.

"Learning shouldn't be a lot of hard work all the time," said Wells, "so I would make up a lot of crazy sentences for the kids."

Another asset of Wells is that he "gives himself to students, and they pick up on that," said his mother. She said she always stressed the importance of responsibility to her oldest son.

"If I left home, Ronald was in charge. It didn't matter that he couldn't see." Her two other sons, Willie and Randy—now 12 and 10—had to do what Ronald told them.

Supervisor Dantley said that Wells may convince others that disabled students can be good teachers. "Ronald doesn't want to be patted, he wants to be treated fair. Because he has been through so much himself, he understands the importance of education."

Wells's popularity extends beyond the elementary school where he works. This spring other District students elected him vice president of the Upper House of the citywide Student Council after a campaign speech that emphasized "togetherness" and "not looking at things as handicaps." Last month, Concerned Black Men, a civic group, presented him an award for achievement in education and community service.

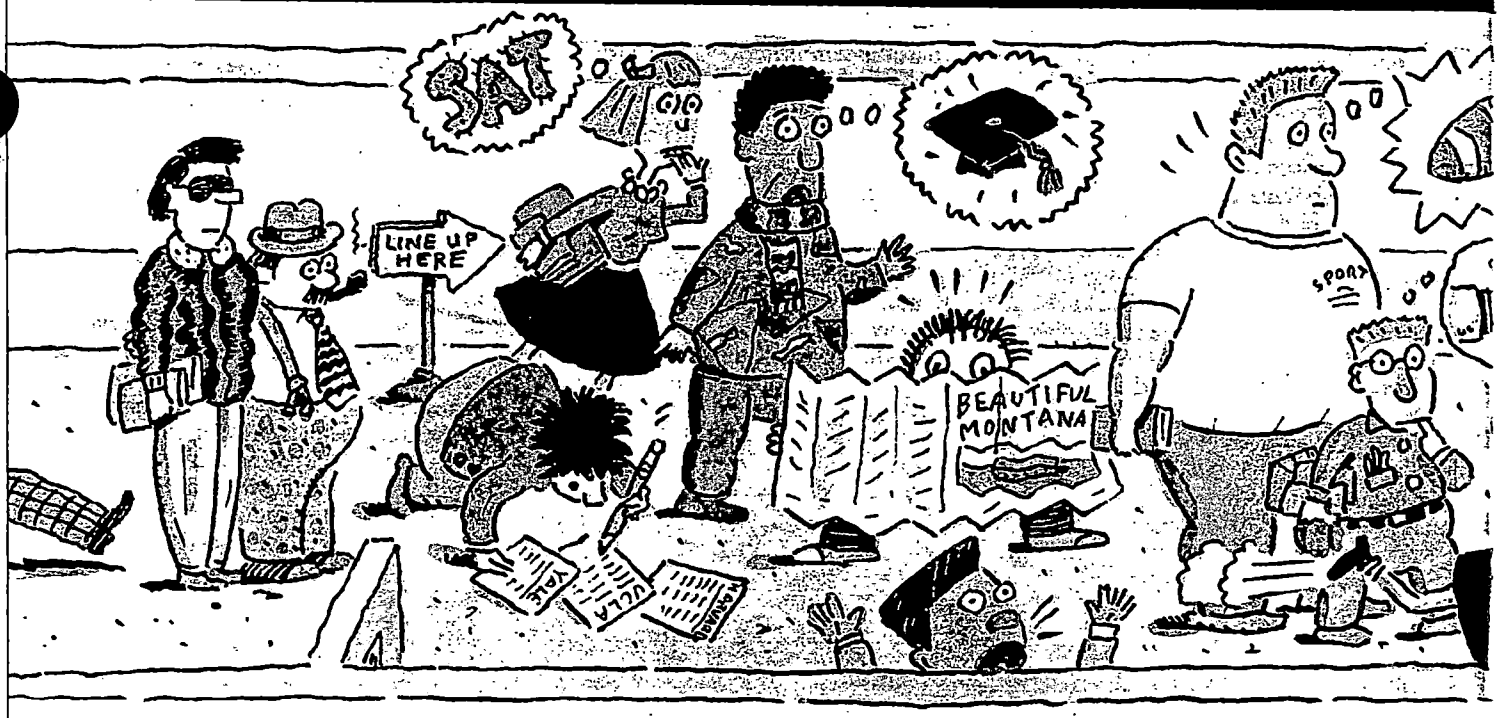
For his part, Wells is modest. Although the apartment in Marshall Heights that he shares with his mother and brothers is studded with his many awards, trophies and plaques, he credits his success to "a lot of family support."

This fall Wells will enter Eastern Senior High School in Northeast, and plans to continue tutoring at Tyler as he has the past two years. His long-term goals include becoming a junior high English teacher.

"I was inspired to be an English teacher by my English teacher," Nancy Jones of Eliot Junior High. "She's just like my mom. She believes in what's right for children. She was always there to help us."

Wells wants to continue tutoring, to teach not only spelling, English and math, but also larger lessons as well. He is a firm believer in the value of education, and talks with pride of his move four years ago from a special program for the visually impaired to an ordinary classroom filled with sighted students.

"In the end," he said, "school works out for the best. You'll come out making more money and being able to take care of yourself as an individual."



Calling in a private college counselor

EDUCATION ■ Many students need more help than guidance offices give

Where to go for help? That's what many high-school juniors will wonder when they return to school this week and besiege guidance offices for college advice, only to discover that the counselors may be too overwhelmed to do more than push them in the direction of the college catalogs. This year's guidance-starved students may turn, as others have in recent years, to independent college consultants. Even students lucky enough to get sound advice from school guidance counselors are seeking out private consultants to help put just the right touch on applications to the top colleges.

Behind the new enthusiasm for independent advisers, whose numbers have tripled to about 1,000 just since 1980, lie shrinking budgets and burgeoning case loads that leave public-school guidance counselors little time to offer the college-bound much one-on-one help. "We don't have the staff to do it right," says Mark Manning, one of only three counselors for 1,600 students at Parkview High School outside Atlanta.

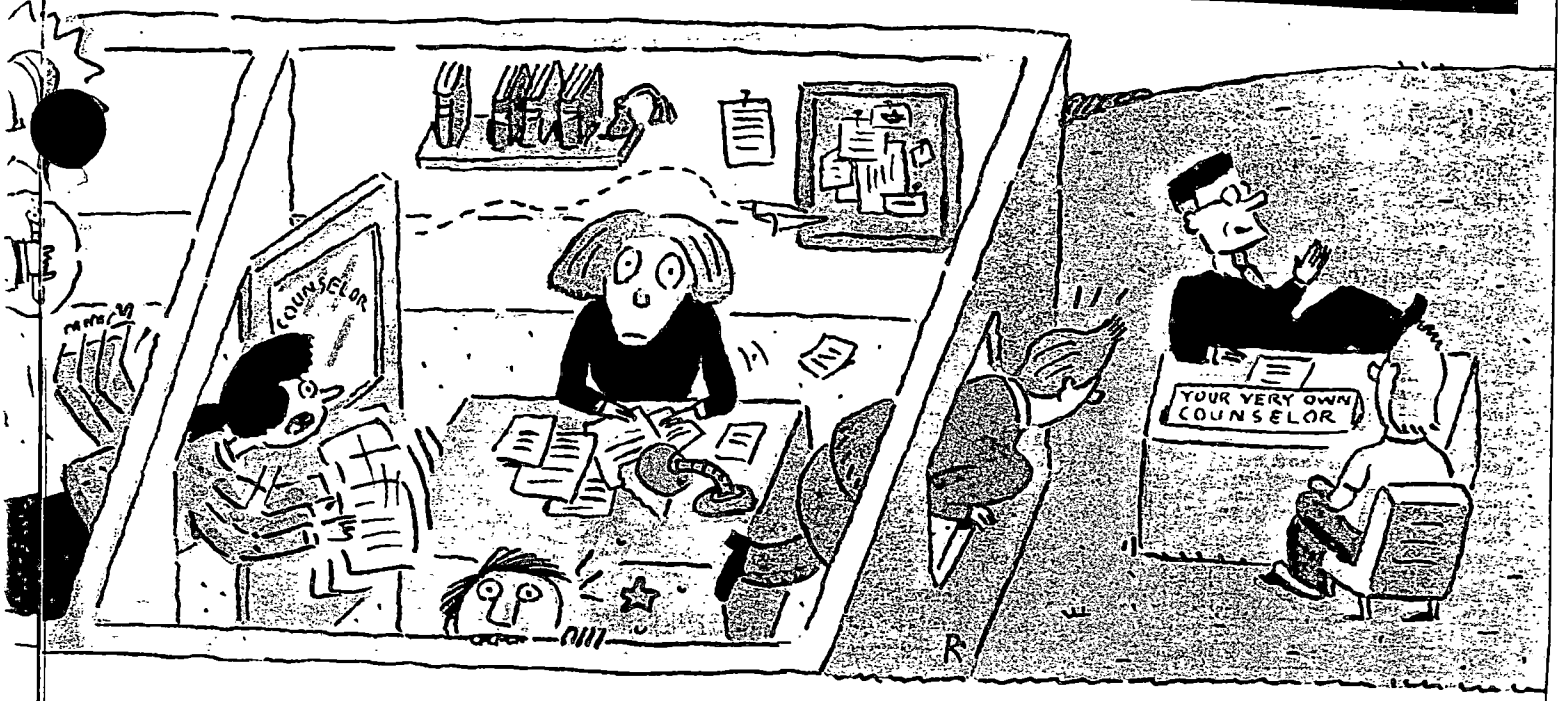
Independent consultants, on the other hand, patiently draw up lists of prospective colleges, critique college essays, provide coaching on interview techniques and issue stern reminders of application deadlines. Once widely dismissed as fast-talking spin doctors for rich students from boarding schools, private counselors now get a measure of respect. One reason is that many new advisers are veteran public-school counselors. "Some of the best high-school guidance people I know are now independent counselors," says Bill Fitzsimmons, dean of admissions and financial aid at Harvard and Radcliffe colleges in Cambridge, Mass.

Second opinion. The private advisers are finding a ready audience even where school counselors are less overloaded. "Why not get the best advice available?" asks Howard Kain, who paid Nancy Gore Marcus more than $500 last year to advise his son, Steven, on out-of-state schools. A student with high SAT and ACT scores but mediocre grades, Steven sought outside help even though his suburban Chicago school, Evanston Township High, has an excellent guidance program. "One thing Nancy did for us is narrow our choices," recalls Kain. Marcus recommended Beloit College in Wisconsin, Hampshire College in Massachusetts and Bard College in New York, three small liberal-arts schools whose flexible curricula appeal to creative underachievers. Steven now attends Bard, his first choice. "We're glad we got the extra help," says Steven's father, adding that Marcus was more accessible than Steven's school counselor and could be reached at night and on weekends when questions or problems arose. "Considering the cost of tuition, a consultant's fee is a small investment," he says.

Consultant fees vary widely. A brief review of a student's list of prospective schools may cost $50; comprehensive counseling that can begin as early as the eighth grade and include up to 20 sessions may run up to $2,000. Most families spend $500 to $1,000 for four or five meetings and innumerable phone calls during a student's junior and senior years.

The best private counselors, say admissions officials, are educators with long experience in high-school counseling or college admissions. Top counselors also visit 25 to 50 colleges a year and frequently attend educational conferences to renew college contacts and keep up with changes in admission policies. This gives them a considerable edge over their public-school counterparts, whose busy schedules and tight budgets tend to limit travel.

Some outside consultants specialize in improving college entrance exam scores, which can cost families an additional $500 to $1,000, but most prefer to focus on the admissions process itself. A counselor typically begins by brainstorming with students and parents, usually in the middle of the junior year, about their notion of an ideal college, and assigning priorities to 10 or more critical factors, from location and tuition to college size and academic atmosphere. Sometimes using computer-search programs, the counselor will work up a list of a dozen schools including one or two "reach"



MARC ROSENTHAL FOR USN&WR

schools difficult to enter and several "safe" schools almost guaranteed to accept the student. The ideal is to match a student's personality and academic record with several appropriate schools rather than satisfy the sometimes inflated expectations of parents. "Some parents mistakenly think I can pick up the phone and get their kid into Yale," says William Fleming, a former high-school teacher and college adviser and now an independent counselor in Dallas.

Like most of his colleagues, Fleming does not guarantee college placement. Instead, for a fee of $700, he coaches clients on how to visit campuses ("Don't just take the college tour, talk to at least a dozen students") and how to relax during college interviews ("Ask for background material in advance so you know as much about the college as the college knows about you"). Fleming also offers tips on how to find financial help. ("The best sources are the financial-aid directors of the colleges you want to attend. Mail-order firms that promise to locate untapped aid are often disappointing.") Private counselors also act as editors on the all-important college essay, which is used by many admissions officers to decide between equally qualified candidates. Recently, Rhoni Morganstern, a senior at Plano High School outside Dallas, showed one of her college essays both to her English teacher and to Fleming, who has been her private counselor since last July. "My English teacher said my essay was fine and didn't need any changes," she says. "Mr. Fleming tore it apart. I think the second draft was much better." A former English teacher himself, Fleming scrutinizes essays and demands rewrites "like a good editor." Suggestions are as far as he goes; he would never write a student's essay himself.

Few guidelines. The business of college consulting is unregulated and license-free, so some families pay huge fees to inept or phony counselors who provide little more than a computerized list of schools and whose expertise may not go beyond having children who went to college. Many veteran counselors belong to either the National Association of College Admission Counselors or the Independent Educational Consultants Association (IECA). For a free directory of 125 IECA consultants in 30 states and the District of Columbia, write the IECA, P.O. Box 125, Forestdale, Mass. 02644, or call (508) 477-2127. But neither group certifies private consultants, so membership does not guarantee quality counseling. Indeed, many competent counselors are not members of either organization. So educators recommend getting three or more references, information about a counselor's professional background and a detailed explanation of fees, in writing.

Before investing in outside help, college-admissions officials advise, parents and high-school students should begin as early as ninth grade to discuss college possibilities and to identify possible schools on their own, then check out resources available free at their schools. Even hopelessly overworked guidance offices generally have research tools that parents sometimes dismiss too quickly. Nearly every school, for example, has a reference library of college catalogs and information on financial aid, local college fairs, trips to nearby colleges and group meetings with parents. New computer-search programs that simplify the selection process also are widely available at schools and at retail computer stores. *College Explorer* (College Board, $49.95), for example, contains detailed information on 2,800 two and four-year colleges. Available for IBM and Apple computers, the software lets students key in their various priorities and academic record; it then spits out a list of appropriate schools.

Some families become so emotionally entangled in selecting a college that an outside counselor makes sense if only to bring some harmony to the process. "A good counselor can eliminate a lot of parental nagging," says Joan Stewart, who last year hired Linda Jacobs, a former high-school counselor in Seattle, to advise her son Michael, then a senior at Seattle's Garfield High School. Stewart says her family wanted to avoid the tension that beset the household when her older daughter, Jenny, applied to college on her own five years ago. Besides helping Michael narrow his choices—he ultimately chose Occidental College in Los Angeles—Jacobs also warned the family to expect emotional flare-ups last spring as the reality of Michael's departure for college sank in. "We could see the tension building," recalls Michael's mother.

Not every college adviser, of course, can double as a family therapist. But most parents would welcome any kind of relief from what can become the most nerve-racking year of their teenager's young life. ■

by Michael Kiernan

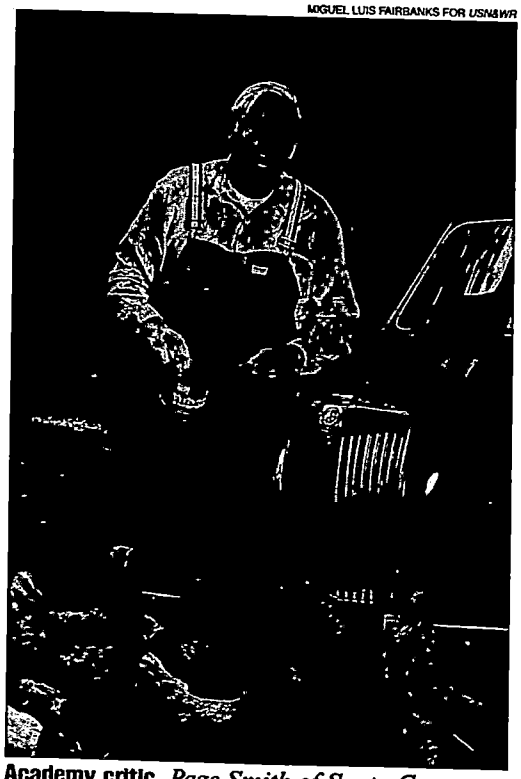
In *Killing the Spirit,* a new critique of higher education, historian and former campus administrator Page Smith points to the 19th-century sources of today's crisis

The university in chaos

Where has American higher education gone wrong?

The problems date back to the 1890s, when the modern university took shape. In the preceding 15 years or so, many in higher education dreamed of using reason and scholarly study to reform society and create a better world. But then the tycoons moved in. It seemed as though every tycoon wanted a university of his own. Vanderbilt was started by a gift from the commodore. Stanford was founded by rapacious rail baron Leland Stanford. John D. Rockefeller gave in excess of $30 million to get the University of Chicago going. It turned out that the owners of the new universities had no interest in seeing them used as engines of reform. Professors who espoused ideas considered dangerous—in the main any idea having to do with state or federal intervention in the economy—were fired. Brooks Adams, certainly no radical, wrote that capitalists owned the leading universities "by right of purchase." He argued that what society needed most was the generalizing mind, but that was precisely the kind of mind likely to be critical of the status quo. Capitalism, Adams said, preferred the "specialized mind."

MIGUEL LUIS FAIRBANKS FOR *USN&WR*



Academy critic. *Page Smith of Santa Cruz*

At about the same time, the infatuation with science became deeply rooted in the universities. The ideal of "scientific detachment" was an attractive alternative for many professors, who withdrew into the pretense of objectivity and disclaimed any responsibility for what went on in the outside world. After World War II, the entire process was accelerated by tremendous competition for resources and involvement with the Pentagon, NASA and the like. Universities came to be valued and rated by the number of published scholars they had. The emphasis on research and publication increased. This focus on so-called scholarly activity, which usually comes at the expense of teaching, and the scientific mind-set that has invaded all the disciplines are the main causes of higher education's ills. People need to face up to the fact that the vast amount of research is useless and unnecessary, and that is true in every field, science and nonscience alike.

In your book, you also argue that the Ph.D. system has proved to be a destructive force.

The Ph.D. is one of the most negative influences of Germanic academic tradition on American higher education. When Johns Hopkins, the first U.S. graduate school, was started in 1876, it had no interest in the Ph.D. Then, in the 1890s, its president said that there was too much "puttering" by students. He advocated the Ph.D. in order to keep "that body of workers in line." The tone was reminiscent of that used by industrialists.

I suppose there was a belief that the Ph.D. would impose a certain order and discipline that was lacking in the early years of higher education. But what those early years had was excitement about learning and an extraordinary sense of exhilaration that's missing in the academic world today. Now, students who have enthusiasm are often told, "Well, you're not being objective." If the modern university could be said to have a dominant moral tone, it is that enthusiasm is dangerous and unscientific and should be squelched.

How would you reform academia?

If I were head of an institution now, I would push for more student-taught courses. Those were very successful in the '60s and early '70s when I was at the University of California at Santa Cruz. Students are far more capable of educating each other than they have been given credit for. They love to do it, and when students have gotten faculty support or sponsorship for courses, they've done a superior job. But small-scale remedies don't really address the problem. If the academic disciplines are disintegrating across the board, as I believe they are, then it doesn't make much sense to say there should be more teaching or less emphasis on monographs or whatever.

Higher education has to hit the wall before fundamental change will occur. I don't see how it can be reformed from within, because institutions don't do things that way and the people who would have to reform universities have a strong vested interest in things as they are. One possible catalyst for change is the crazy and constantly increasing expense of going to school. The costs might well have precipitated a crisis by now were it not for the system of student loans. The whole notion of young people starting out in life with a heavy indebtedness for their education seems appalling to me. The drying up of defense-contract work may also bring matters to a head. If the money for research in the military-industrial realm starts to vanish as a result of the end of the cold war, that will leave an enormous dent in the budgets of major universities. There must be lots of schools quaking in their shoes at the prospect of losing millions and millions of dollars. In the end, I don't have any panacea. That would be like my saying to a dying person, "Here, take two aspirins." But I do know that things just can't go on indefinitely the way they are. ■

Killing the Spirit: Higher Education in America, Viking, $19.95

Conversation with Alvin P. Sanoff

The corporate classroom

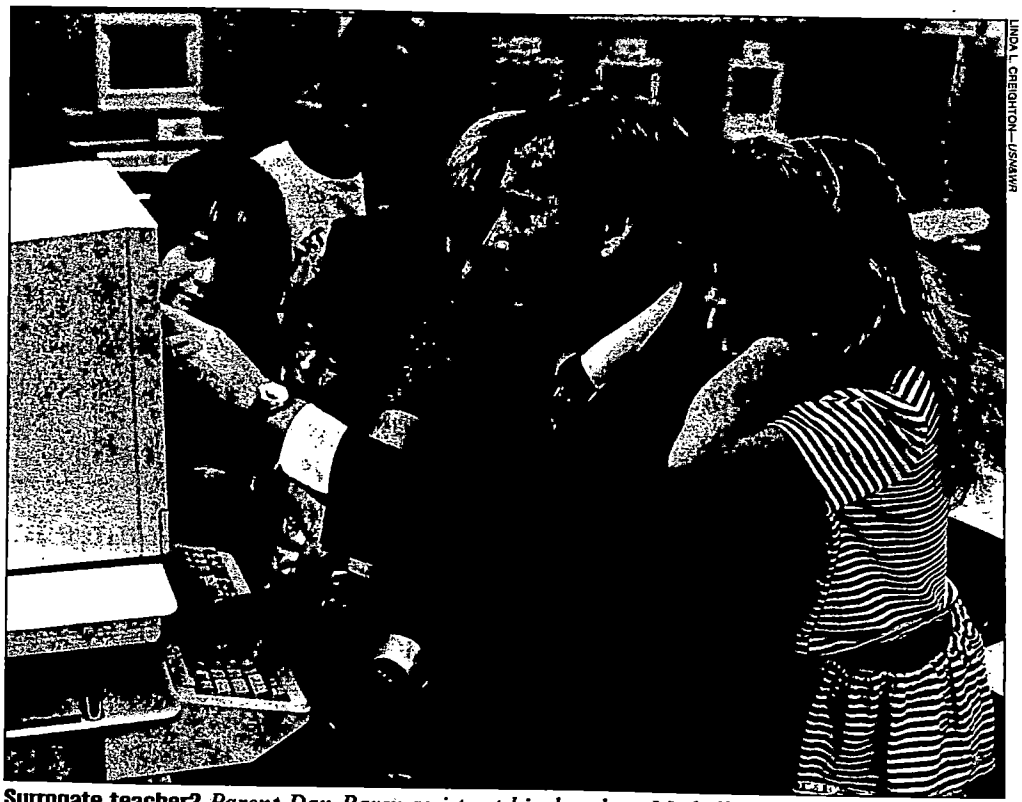
Companies aim to help public education with schools at work

Frank Petruzielo has a problem. As an associate school superintendent for Florida's Dade County, he does not have enough classroom space for his 280,000 students. Encompassing immigrant-infused Miami, Dade is a severely crowded school district, the fourth largest in America. And with a 20 percent jump in enrollment expected by 1992, Petruzielo needs to find more desks—fast. The Dade County education system has nearly $1 billion earmarked for the construction of 49 new schools and renovation of 260 existing ones. But building cannot keep pace with current needs.

So Petruzielo has turned to local businessmen for help. To ease the school squeeze, they are building classrooms in their corporate headquarters. Dubbed Satellite Learning Centers and spanning kindergarten through second grade, these work-site schools are currently serving more than 300 pupils and saving Dade County $1 million. "Every bit of budget relief we get," says Petruzielo, "enables us to improve our education programs."

Going blue chip. Across the country, companies have begun to recognize the fact that if they don't join forces with the public sector and help rebuild America's crumbling schools—literally brick by brick—nobody else will. Right now, work-site public schools are in the experimental phase, but they won't be for long. Blue-chip companies such as IBM, Citicorp and 3M say they are mulling over the concept and seem willing to give it a try. "I am a big pusher of new ideas in education," says David Kearns, chief executive officer at Xerox. "Public schools in the workplace is a rational idea that has a good chance of working."

Setting up elementary schools down the hall from the office is a logical extension of the corporate child-care centers that sprang up in the 1980s as more and more mothers flooded the workplace. Corporations aren't investing in the new work-site schools just for the sake of convenience or for coddling working moms whose children are no longer toddling along. The schools' emergence reflects the American business community's continuing concern about the poor education of workers in a high-tech era and its impact on productivity, which must increase if U.S. companies are to make it in the global economy. "This is a major competitive problem," asserts Xerox's Kearns. "And we come at it out of our own self-interest." Over the past two years, for example, Boeing's cash contributions to elementary and secondary education rose from $323,000 to nearly $2.2 million. Those figures will continue their dramatic ascent if the company should decide to further its commitment by building a school for workers' children in its Seattle headquarters.



LINDA L. CREIGHTON—USN&WR

Surrogate teacher? *Parent Dan Barcy assists at his daughter Michelle's corporate school*

Capital investment. In most cases, the corporation takes the lead in funding and operating the work-place school, while the public-sector partner provides certified teachers and classroom supplies and equipment. Miami-based American Bankers Insurance Group, for example, paid $350,000 to construct its 6,000-square-foot school and now spends about $60,000 annually to maintain the classrooms for its employes' offspring. In Minneapolis, where the work-site program is called Corporate Classroom, Target Stores renovated and leased an 11,500-square-foot space for $280,000. This fall, 31 corporate children between the age of 5 and 8 will attend Target's school, which will eventually extend up through the sixth grade. Meanwhile, across the Mississippi River in St. Paul, First Bank System invested $50,000 in office space to open a 3,000-square-foot kindergarten for 44 youngsters.

First Bank's school is a financial blessing for hard-pressed St. Paul School Superintendent David Bennett. "We're looking at a $10 million reduction in our budget this year," explains Bennett. "Here we're saving $55,000 in classroom construction plus another $17,000 in transportation costs." Also, Bennett soon plans to open a new elementary school in another building just a block away from First Bank's St. Paul's branch. The project will be partially funded by First Bank.

Work-site schools obviously take some of the pressure off financially strapped school districts. They also enable companies to more closely control the war on illiteracy. But are they good for the kids? Are corporate classrooms really going to improve Johnny's reading scores? At the American Bankers school

in Miami, for example, sales consultant Dan Barcy takes time out from his busy schedule at the office to help teach his daughter's computer class—but is that really a substitute for a trained teacher?

Work-site elementary education is so new that there are not enough data to answer such questions with any certainty. And on a broader level, some education experts wonder whether corporate America—despite the significant contributions of companies such as IBM and Xerox—should be in the classroom at all. Writing checks that support public education is one thing, they say, but it is something else entirely when companies begin to decide which activities, games or books children use. Says John Chubb, senior fellow at the Brookings Institution: "I get a little nervous when I see businesses getting very specific about education."

Bloated bureaucracies. On the other hand, Paul Ostergard, vice president for corporate contributions at Citicorp, believes that it is an obligation of the business community to help streamline America's bloated public-school system. "Most executives suspect that large school bureaucracies have lost touch with the reason they are in business because they are so consumed by their own self-interest," says Ostergard. "What about the kids? That is where the corporate community is coming from."

One possible window on the future is the Corporate/Community School in Chicago. Opened two years ago by Joseph Kellman, president of Globe Glass & Mirror Company and an outspoken critic of America's public-education system, the school is run by a 15-member board of directors that includes seven corporate executives from such companies as Baxter International, Quaker Oats and Sears, Roebuck. Kellman views the school, which has a current enrollment of 200 pupils age 2 through 10, like a business. He refers to his handpicked principal as chief executive officer and says that she realizes she will be fired if she does not produce results. The brash executive believes that hard-edged management skills are critical in running a school. "There is no mystery to it," he says. "All the kids can be educated." There is no reason, he adds, for American schools to turn out "bad products."

For all the worries about companies in the classroom, most educators believe that increased corporate assistance can only benefit America's troubled public schools. The real issue is balance—the proper relationship between private business and public education—and only experiments like Miami's Satellite Learning Centers will resolve it. ■

by Anne Moncreiff Arrarte in Miami
with Douglas Pasternak

...the IRS kill tuition trusts?

...ors in her family had ... college, 50-year-old ... about to face cancer ... ted to make sure that ... children could. "I wanted ... do something everlasting for the kids," says Pearson, a bill collector at an auto-parts supplier in Lansing, Mich. Following her recovery, she enrolled her newborn grandson in a novel state-run program that guarantees his tuition at any Michigan state university when he graduates from high school in the year 2006. Although annual tuition at Michigan colleges has more than doubled since 1980 and is expected to continue ...ting tuition increases ... by ... 7.3 percent a ...

High hopes. *Grandma grabs a college dream*

...rising faster than inflation, Pearson has secured her grandson's future.

Taxing innovation. Thousands of American families share Pearson's dream, but few may be as lucky. While over a dozen states have considered following Michigan's lead, a tax fight and doubts about the financial soundness of prepaid tuition plans threaten to dim an education beacon. As a result, college could remain beyond the reach of many low and middle-income households.

The dispute is centered in the office of Michigan Treasurer Robert Bowman, who devised the plan, known as the Michigan Education Trust (MET). This is how it was to have worked: Families like Pearson's could buy tuition contracts at a discount of as much as 25 percent below today's average state rate. Michigan would make up for the discount in two ways. First, the MET expected to pay little, if any, federal tax. Second, it would invest the money from tuition contracts and hope to garner an annual pretax return of about 12 percent, offset...

But Bowman underestimated the tax man's bite. A recent Internal Revenue Service ruling makes the MET subject to a 34 percent federal tax rate. And although Bowman says he factored some taxes into the equation, he assumed the IRS would allow Michigan huge deductions on the difference between a contract's cost today and its future value when recipients enroll in college. Experts believe that to survive, the MET must either win the lawsuit it has filed against the IRS challenging the tax ruling or at the very least retain the deductions. If the MET loses on both counts, notes Jeffrey Lehman, who teaches tax law at the University of Michigan, the plan would become insolvent to the tune of $100 million. To keep the MET from going under, the state might then raise taxes or college tuition rates for students whose costs have not been prepaid.

Michigan has one thing going for it in its battle with Uncle Sam. The IRS has granted special tax breaks to state-affiliated agencies that provide such services as health insurance, which some say are comparable with the protection that the MET provides against spiraling college costs.

Others are learning from Michigan's travail. Because states don't pay federal tax, Florida sought to ensure an exemption for its prepaid program by making it part of the state treasury. And Ohio's tuition contracts include in their prices the full federal-tax rate.

Several states are running scared, however. Citing the IRS ruling, Indiana scrapped its son-of-MET plans and issued education savings bonds instead. Unlike prepaid programs, bonds don't promise to cover future tuition. And for people such as Pearson, whose income is less than the $40,000 or so that a state-college education is likely to cost by the 21st century, nothing less than a guarantee will do.

by Andrea Gabor

The National Education Goals

A Report to the Nation's Governors

Executive Summary

July 29, 1990

THE WHITE HOUSE

WASHINGTON

To the Governors of the United States:

One year ago, I invited you to join with me and my Cabinet at a Summit Conference to discuss an issue of vital national importance -- education. The path from Charlottesville led to the development of the national education goals announced early this year.

These goals are ambitious, yet realistic. They provide, for the first time, a sense of direction for individual and collective efforts to improve the quality of education for all Americans. We must now turn our attention to the formidable task of ensuring that these national goals are attained.

First, achieving the national education goals will require fundamental changes in the way we educate our citizens, in our attitudes toward teaching and learning, and in our very culture. Our Nation must make education a priority and emphasize the value of learning. We must respect and honor educators. We must replace complacency with a sense of constructive urgency and action to reform our schools.

Second, the vision and energy necessary to revitalize American education cannot be provided by a few national or State leaders alone. This effort must engage concerned citizens throughout our land with shared beliefs and principles working toward common goals.

Third, there are inherently American principles which can provide the foundation for this educational renaissance. A belief in freedom, a commitment to hard work, a love of fair competition, a sense of responsibility, a concern for community -- these traditional American values are suddenly being embraced by peoples all over the world, while here in the United States we have often taken them for granted. We must remind ourselves that such principles have provided the foundation for our most successful institutions -- for our free-market economy, our decentralized form of government, our participatory democracy -- and that they must likewise undergird our efforts to rebuild our educational system. To accomplish this restoration we must have principled leadership in our homes, in our schools, and in our communities.

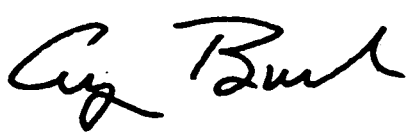
Fourth, we must proceed on the bold but realistic assumption that every child and every citizen can learn. Having made such an assumption, we must develop strategies that recognize and complement individual talents, while at the same time defining an accepted standard of excellence to which all can aspire. We cannot allow any child to feel unappreciated or unworthy. Parents, teachers, and other responsible adults must instill in our young people an expectation of success and a commitment to high standards and values that will last a lifetime.

Finally, our restructured education system must reflect the values and traditions which have served America well for over two centuries. Education in America will always be about opening doors of opportunity for the individual.

As the Nation looks ahead to the next century, education must remain at the top of our national agenda and become a lifelong quest for all our citizens. Our great democracy can remain vital only if our people continue to grow in knowledge and wisdom, facing each new choice with an increased understanding of the world in which we live. Given the growing complexity and competitiveness of that world, we must recognize that education has never been more vital to our future.

As an elected chief executive, each of us will be held accountable for progress in meeting our national goals -- and we expect to hold others accountable as well. It is our responsibility to let the Nation know again and again why we have made this pledge and why educational excellence is of vital importance. As we remain committed to the national-State partnership that has begun, we must build bridges and welcome partnerships at all levels throughout our society. Achieving our goals will require hard, active work and involvement on the part of students, parents, and educators. It will require the constructive involvement of business, school boards, community-based groups, media, and all sectors which reach our children and workers.

I am appreciative of the partnership which has begun over the past year and reiterate my long-term commitment to working with you in the months and years ahead. In the words of Thomas Jefferson, "no experiment can be more interesting than that we are now trying." Nothing could be more important to current and future generations and to the future of our Nation.



FOREWORD

The President believes America can and will have a restructured and revitalized education system by the year 2000. Reforming our system will enable America to compete successfully in the 21st century and empower each citizen to achieve his or her fullest potential. The President, his Cabinet, and his entire Administration are committed to the national education goals for the year 2000, to sustaining the partnership with the Nation's Governors, and to building new partnerships at all levels with all sectors of society to move the Nation toward educational excellence.

Achieving the goals will require cultural changes throughout our society and fundamental structural reform of our education and related systems. These systemic changes must occur at the State and local levels. The President encourages all Americans to support State and local initiatives which will ultimately improve the education system as a whole. Although the Administration recognizes and will maintain the traditional limited Federal role in education, it is committed to an appropriate, coordinated, and effective response to the significant challenges presented by the national education goals. In support of the necessary changes which must take place, the President, his Secretary of Education, and his Cabinet are working to provide strategic, sustained leadership at the national level.

This report reflects many of the activities undertaken by Federal departments and agencies in support of the national education goals. Following the Education Summit, several Cabinet secretaries and agency heads made supporting the President's commitment to education a departmental and agency priority. Many innovative initiatives have been introduced and unprecedented interagency collaboration is underway related to the goals.

Several departments have been working with the States since the Summit to follow-up on the commitment to obtain and review recommendations for statutory and regulatory changes related to education. The Office of Management Budget has prepared an interim report on this effort. A final report will be issued later this year. Federal agencies have benefited from the process of reviewing their operations in light of the perspective of the States. It is clear that the States share the frustration expressed at the Education Summit with rules governing duplicative, overlapping Federal programs and look forward to a time when greater flexibility is granted in law to combine funds to meet and overcome State and local problems, allow innovative approaches, and remove current barriers to improving student performance.

The steps which have occurred to date should be recognized as the beginning of a long-term effort on the part of the Administration. At the request of the President, the office

of the Assistant to the President for Economic and Domestic Policy provides coordination for a sustained, high-level focus on Administration efforts specifically related to the national education goals and other commitments made at Charlottesville and Administration actions related to the goals. The President's Domestic Policy Council's Working Group on Education Policy, chaired by Secretary of Education Lauro Cavazos, continues to develop Administration policy on issues related to the national education goals. In the months ahead, the President's Education Policy Advisory Committee, comprised of representatives from labor, business, media, and all levels of education will continue to recommend ways to disseminate the national education goals and mobilize national efforts to realize them.

The President and his Administration look forward to working with the Nation's Governors in this quest.

POST-EDUCATION SUMMIT INITIATIVES

Highlights of the Administration's initiatives undertaken since the Education Summit in Charlottesville.

POST-EDUCATION SUMMIT INITIATIVES

Education is our most enduring legacy, vital to everything that we are and can become. And come the next century — just ten years away — what will we be? Will we be the children of the enlightenment, or its orphans?

President George Bush, September 28, 1989

The President and his Administration have begun work to develop a coordinated, Administration-wide effort to support the significant changes which must occur at the State and local levels in order for the Nation to reach the national education goals by the year 2000. Efforts currently underway include those to identify and strengthen effective programs related to the six goals, address issues of coordination among departments and agencies in the goal areas, assist State and local efforts, and enhance research and statistical development and disseminate "what works." The Administration remains committed to the President's four educational principles as the foundation of its efforts: recognizing and rewarding excellence; encouraging flexibility and choice; strengthening accountability; and targeting those most in need.

The following highlights reflect some of the initial efforts and initiatives underway across the Administration since the Education Summit in Charlottesville in support of the national education goals.

GOAL 1 - READINESS FOR SCHOOL

By the year 2000, all children in America will start school ready to learn.

A number of departments and agencies are involved in efforts to increase the potential that all children will enter school ready to learn. Programs, partnerships, and research and dissemination activities are focussing on the role of parents as first teachers, the effectiveness of early childhood experiences for disadvantaged and disabled children, the health and nutrition status of preschoolers, and how schools can better build on the foundation of a child's early experiences. The President remains committed to ensuring that all disadvantaged children have access to a quality preschool experience before entering school as reflected in his request for an unprecedented increase of $500 million for Head Start in fiscal year 1991.

- Through the leadership of Secretary of Education Lauro Cavazos and Secretary of Health and Human Services Louis Sullivan, ED and HHS have joined efforts to help strengthen the transition from Head Start to school and examine ways schools can help guarantee that the gains made in the preschool years are sustained through the early school years. The departments will convene a meeting in the Fall of 1990 with urban school officials and Head Start directors to explore relevant issues and to provide technical assistance for implementing promising strategies. An interagency task force also is working on coordination between Head Start and Even Start, Chapter 1 and other compensatory education programs.

- To assist States in implementing effective strategies for ensuring every child starts school ready to learn, a new Head Start State coordination demonstration has been initiated this year. Up to ten States will be awarded three-year grants to establish an office, within the Governor's office or other high-level State office, to help States coordinate and integrate Head Start programs with other early childhood programs, related services for children and their families, and schools.

- Following the Education Summit, Secretary of the Interior Manuel Lujan held a series of regional conferences related to Indian education. Interior's Bureau of Indian Affairs (BIA) is implementing a new program for Native American preschool children and their parents to increase parenting skills and participation in early childhood experiences. The BIA program will use Missouri's "Parents as Teachers" program as a model for parents and their children from the prenatal stage to age three. The second component of the program will be modeled after Kentucky's "Parent and Child Education" program serving three- and four-year olds.

- The Department of Agriculture is working with a consortium of 1890 Land-Grant Institutions in 16 States to address the needs of families at risk with young children. This partnership is focusing on helping parents become more effective as first teachers and strengthening the capacity of community agencies and organizations in providing support to needy families of preschool children.

- Within the Department of Defense's own unique school system, Secretary of Defense Dick Cheney is responding to the commitment to reach the national education goals by the year 2000. As part of Secretary Cheney's national education goals implementation plan, the Department of Defense will implement a parental participation program in all child development programs to encourage parental involvement in child development activities. A parent education guide to all parents who have children in overseas child development centers and pre-kindergarten programs will be disseminated.

GOAL 2 - HIGH SCHOOL COMPLETION

By the year 2000, the high school graduation rate will increase to at least 90 percent.

Activities across the Bush Administration are assisting States in their efforts to increase high school completion, prevent students from dropping out, and encourage former dropouts to complete their formal education. Many departments are mobilizing their own employees and constituencies to become personally involved with helping youth stay in school and keeping them motivated to learn.

- As one of a series of post-Summit initiatives, Secretary of Labor Elizabeth Dole launched a National Mentoring Campaign to mobilize business and labor to reach out to youth at risk of failing in school and, ultimately, the labor market. This campaign, established in cooperation with the National Media Outreach Center, is recruiting business and labor volunteers to serve as mentors and tutors to youth at risk of failing in school.

- The Department of Labor recently announced recipients of its new Youth Opportunities Unlimited (YOU) demonstration grants. Six cities and the State of Mississippi have been awarded multi-year grants for implementing model community or neighborhood projects that emphasize integration of youth services and collaboration among institutions and organizations to increase high school completion rates among youth in high-poverty areas.

- Secretary of Education Lauro Cavazos has formed and chairs the President's Hispanic Task Force on Education. This year, the Task Force convened regional meetings to identify issues and particular circumstances related to Hispanic youth and their families. Recommendations to help reverse high dropout rates among Hispanic youth will be considered by the White House Domestic Policy Council and the President.

- The Department of Agriculture's Youth At Risk Initiative will target sixty high-risk communities nationwide to help address the education-related needs of youth at risk and encourage school completion by building coalitions of public and private support and coordinated strategies that replicate successful model programs. The initiative will be conducted in cooperation with several foundations and corporations, and other Federal departments and agencies.

GOAL 3 - STUDENT ACHIEVEMENT AND CITIZENSHIP

By the year 2000, American students will leave grades four, eight and twelve having demonstrated competency in challenging subject matter including English, mathematics, science, history, and geography; and

every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning, and productive employment in our modern economy.

Many departments and agencies are involved in developing instructional material in particular subject areas, enhancing the quality of teaching, and increasing opportunities for informal educational experiences outside the classroom and in the home that contribute to what students learn and their ability to demonstrate competency in critical subjects. These activities complement Department of Education programs that help States and localities improve education for all students, particularly the disadvantaged. In the spirit of President Bush's Points of Light Initiative, education partnership programs throughout the Administration encourage employees to serve as volunteers in education to help foster excellence in school programs and increase individual student achievement.

- In May, Attorney General Dick Thornburgh announced a department-wide mentoring initiative that exemplifies how America's employers can encourage employees to be actively engaged with the education of youth in their communities. The "Legal Advocates in Education" program grants Department of Justice employees up to eight hours of administrative leave per month to work with students in the District of Columbia public schools. As tutors and mentors, Department of Justice employees are reaching out to area students to help increase competency in academic subjects and motivate learning in classrooms throughout the city.

- At the Department of Labor, the Secretary's Commission on Achieving Necessary Skills (SCANS), chaired by former Labor Secretary William Brock, is bringing together top business, labor, and education leaders. The commission will consider and define guidelines for what fundamental skills American students need to fulfill basic workplace requirements of entry-level workers, with respect to traditional academic disciplines as well as critical thinking, problem-solving, and communicating skills.

- Under the Department of Education's Chapter 1 program improvement effort, some 6,000 schools whose students are not showing adequate progress are now undergoing activities to improve their programs.

- The Environmental Protection Agency recently sponsored a Youth Environmental Action Forum with the National Governors' Association that brought together 300 high school students, teachers, and environmental education coordinators from around the world. To help foster good citizenship and stewardship among youth, students developed proposals for environmental projects that they could lead in their communities. The Forum is one component of Administrator Reilly's efforts to focus and enhance EPA's ongoing education activities.

- The Department of Agriculture's 4-H program, the Nation's largest organization and non-formal education program for youth with 5.1 million youth and adult volunteers, is developing new international curriculum materials as part of 4-H's International Youth Exchange that will help acquaint students across the Nation with knowledge of America's cultural heritage and the world community.

- A new National Endowment for the Humanities (NEH) initiative seeks to enhance foreign language education. Starting this Fall, NEH will sponsor projects that seek to increase language proficiency and cultural knowledge among language teachers and undergraduates, and establish foreign language magnet schools.

GOAL 4 - SCIENCE AND MATHEMATICS

By the year 2000, U.S. students will be first in the world in science and mathematics achievement.

The goal to be first in the world in mathematics and science achievement by the year 2000 poses an ambitious and imperative challenge for the nation.

- Ten days after the Charlottesville Summit Secretary of Energy James D. Watkins co-chaired with Nobel laureate Dr. Glenn Seaborg a Math/Science Education Action Conference in California. As a result, DOE is mobilizing its National Laboratories and other research facilities to bring cutting-edge science to America's teachers and students. Thirteen new initiatives involve partnerships between DOE labs and rural, urban, minority, or disadvantaged schools. Examples include: Oak Ridge National Laboratory's alternative certification initiative with the University of Tennessee; Los Alamos National Laboratory's teacher enhancement program for rural New Mexico middle school teachers; and Brookhaven National Laboratory's science research program for students attending Gallaudet University.

- Through the President's science advisor, Dr. D. Allan Bromley, a Federal coordinating committee has been established to promote more efficient use of the expertise that exists in agencies, avoid needless duplication, identify areas of new program opportunities, and make more efficient use of limited resources in efforts related to science, mathematics, and engineering education across the Administration. Sixteen Federal departments and agencies are involved in this major effort dedicated to helping the Nation achieve the science and mathematics goal.

- Admiral Richard H. Truly has announced the National Aeronautics and Space Administration's plan, "Science and Technology Literacy for the 21st Century,"

a decade-long commitment to furthering excellence in science and mathematics education, workforce competency, and lifelong learning. Initially, NASA will use segments of non-mission time on NASA's satellite communications system for broadcasting educational and informational videotapes to teachers and students in all fifty States. NASA also has begun work on designing a model "Classroom of the Future." The classroom will take advantage of the latest technologies and learning strategies in teaching science, mathematics, and technology.

- In conjunction with the National Governors' Association, NSF and ED recently launched a Statewide Systemic Initiative to actively encourage and support proposals which seek broad-based, fundamental changes at the State and local levels to improve science and mathematics education. Forty States, the District of Columbia, and Puerto Rico have submitted preliminary proposals. ED's Dwight D. Eisenhower Mathematics and Science program will provide collaborative support for the initiative. The President's fiscal year 1991 budget includes significant increases for the Eisenhower program and other mathematics and science education programs in key departments and agencies.

- As a result of an Administration-wide emphasis on collaboration and coordination in education, the Department of Education and the National Science Foundation have formalized their partnership on mathematics and science education. Activities will include distribution of NSF curricula through ED dissemination networks funding research on national and international assessment of student achievement, and joint research and development activities on the use of technology in education.

- As part of the Department of Defense's goals implementation plan, Defense's overseas high schools will increase enrollment in advanced mathematics and science (algebra 2, trigonometry, chemistry, and physics) each year for the next five years over the enrollment in school year 1989-90.

- The National Science Foundation's Regional Centers for Minorities in Science and Engineering will operate through new regionally-based alliances of school districts, community colleges, universities, local businesses, and science and engineering industries.

GOAL 5 - ADULT LITERACY AND LIFELONG LEARNING

By the year 2000, every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship.

Numerous activities and initiatives across the Administration support the national goal related to literacy and lifelong learning. The President and his Cabinet are committed

to improving literacy for all Americans. Many departments are active in outreach activities and partnership efforts with States, communities, schools, universities, and other entities. As a major employer, the Administration is concerned about the future of the Nation's workforce and working to help strengthen the connection between school and work.

- The Administration's Task Force on Literacy, co-chaired by the Department of Education and the Department of Labor, is preparing recommendations designed to strengthen leadership and direction, coordinate existing programs and services, improve effectiveness of literacy programs, and improve literacy skills for consideration by the White House Domestic Policy Council and the President.

- The Department of Labor's Initiative on School-to-Work Transition aims to help students attain skills needed to successfully complete school and begin their careers. The Department will conduct a series of research and demonstration projects, through business and education partnerships, that will produce "work-based learning" models for schools and employers. The Departments of Labor and Education collaborated on a national school-to-work conference this spring.

- The Department of Education has launched the most extensive survey of literacy skills since the 1970's. The National Adult Literacy Survey (NALS) will offer vital information about literacy levels and the extent of illiteracy among Americans ages sixteen to sixty-four. States were recently informed of a new option to participate in a State-level assessment of literacy skills among their citizens.

- The Department of HHS, Labor, and Education are cooperating on a multi-year training and technical assistance effort to implement the Job Opportunities and Basic Skills (JOBS) program for welfare recipients. The effort will focus on helping States integrate literacy and basic skills programs and services to effectively serve JOBS participants.

- Under the leadership of Secretary Jack Kemp, the Department of Housing and Urban Development has launched a joint initiative with the Department of Agriculture and the Kraft/General Foods Foundation to develop model consumer education programs in public housing communities to help residents develop lifelong learning skills and move toward economic self-sufficiency. Eight major cities have been selected as test sites this year.

- To help advance the role of technology in educational instruction and information, the Department of Commerce's National Telecommunications and Information Administration recently installed six satellite uplink earth stations for the American Association of Community and Junior Colleges that will transmit

instructional programming in collaboration with the Community College Satellite Network.

- Furthering the important objectives of the Even Start program, the Head Start Family Literacy Initiative will encourage every Head Start grantee to implement a family literacy project by 1993 to enhance intergenerational literacy and encourage family reading activities. To assist in this effort, HHS is encouraging partnerships between local grantees and Literacy Volunteers of America, funding fifteen model Head Start Family Service Centers, and working with ED's Even Start program.

GOAL 6 - SAFE, DISCIPLINED AND DRUG-FREE SCHOOLS

By the year 2000, every school in America will be free of drugs and violence and will offer a disciplined environment conducive to learning.

Drug-free, safe, disciplined schools are vital if we are to improve the quality of education. The Administration believes that the Nation cannot wait a decade to realize this essential goal. Drug-free, safe schools are a major focus of the National Drug Control Strategies developed under the leadership of Office of National Drug Control Policy Director William Bennett.

- The Office of National Drug Control Policy hosted in early 1990 a national conference for States and localities to identify promising strategies in anti-drug efforts, including those to ensure our children and schools are drug-free. Secretary of Education Lauro Cavazos, Secretary of Housing and Urban Development Jack Kemp, Secretary of Health and Human Services Louis Sullivan, and Attorney General Dick Thornburgh were among Administration officials who participated in the conference.

- Since the Summit, the Department of Education has developed and disseminated a model drug curriculum, Learning to Live Drug Free: A Curriculum Model for Prevention, to every school in the country. The Department of Education has also distributed anti-drug videos to every school district in the country and developed and distributed anti-drug materials in Spanish as well as English.

- The President proposed and Congress has passed legislation which requires schools, colleges, and universities to implement and enforce firm drug prevention programs and policies as a condition of eligibility to receive Federal assistance. Legislation also has been enacted authorizing emergency grants to local education agencies facing a concentration of drug problems.

- The Department of Justice has added a school crime supplement to the National Crime Survey to provide survey data on the extent of school-related victimizations, the availability of drugs and alcohol in schools, efforts to maintain security in schools, and the effects of the fear of crime on behavior.

PROMOTING RESEARCH AND DISSEMINATION OF "WHAT WORKS"

The Administration can play an appropriate and important role in assisting States and localities in reform efforts through improving education-related research and statistics and identifying and disseminating "what works." The President's fiscal year 1991 budget includes substantial increases for Department of Education initiatives to help improve these efforts, including funds specifically targeted for initial Education Summit follow-up activities.

Many efforts are underway to help identify and disseminate "what works" in goal areas. For example, the Departments of Education, Labor and HHS have completed an interagency agreement to jointly fund a Center for Adult Literacy beginning in January 1991. This five-year collaborative effort will support research into the problems of adult literacy, the effectiveness of basic skills instruction programs, and it will develop ways to improve the dissemination of literacy information to schools, job training programs, business, labor, community organizations, and government. Among other efforts, the Barbara Bush Foundation for Family Literacy recently produced First Teachers, a family literacy handbook that documents ten of the most promising and innovative literacy programs nationwide. The White House Office of National Service has made literacy and drug prevention a priority in its activities.

Promising research currently is being conducted in the goal areas. For example, the Department of Education is conducting five studies related to early childhood education designed to survey providers, describe promising practices, and strengthen the relationship between preschool and kindergarten program practices. Several departments are working together to identify existing national statistical efforts related to the goal areas. The Administration also is working with national organizations and associations on strategies to empower their constituencies to become actively involved in working toward the national education goals at the local level.

The Departments of Education and Health and Human Services are jointly supporting a new Research and Development Center on Families, Communities, and Children's Learning. Other National Education Research Centers in the Department of Education will conduct research related to the goals, including: Education in the Inner Cities; Cultural Diversity and Second Language Learning; and Research on Dissemination and Knowledge Utilization. ED's National Diffusion Network (NDN) is being strengthened, and with the cooperation of the National Science Foundation, the number of effective programs in mathematics and science disseminated by NDN will be increased.

The Department also is using electronic technologies to enhance dissemination and collaboration among the research programs it supports and is collaborating with the Department of Commerce and other Federal agencies on ways to use technologies in education more effectively.

APPENDIX

NATIONAL GOALS FOR EDUCATION

INTRODUCTION

At the historic education summit in Charlottesville five months ago, the President and the Governors declared that "the time has come, for the first time in U.S. history, to establish clear national performance goals, goals that will make us internationally competitive." The six national education goals contained here are the first step in carrying out that commitment.

America's educational performance must be second to none in the 21st century. Education is central to our quality of life. It is at the heart of our economic strength and security, our creativity in the arts and letters, our invention in the sciences, and the perpetuation of our cultural values. Education is the key to America's international competitiveness.

Today, a new standard for an educated citizenry is required, one suitable for the next century. Our people must be as knowledgeable, as well-trained, as competent, and as inventive as those in any other nation. All of our people, not just a few, must be able to think for a living, adapt to changing environments, and to understand the world around them. They must understand and accept the responsibilities and obligations of citizenship. They must continually learn and develop new skills throughout their lives.

America can meet this challenge if our society is dedicated to a renaissance in education. We must become a nation that values education and learning. We must recognize that every child can learn, regardless of background or disability. We must recognize that education is a lifelong pursuit, not just an endeavor for our children.

Sweeping, fundamental changes in our education system must be made. Educators must be given greater flexibility to devise challenging and inspiring strategies to serve the needs of a diverse body of students. This is especially important for students who are at risk of academic failure — for the failure of these students will become the failure of our nation. Achieving these changes depends in large part on the commitment of professional educators. Their daily work must be dedicated to creating a new educational order in which success for all students is the first priority, and they must be held accountable for the results.

This is not the responsibility of educators alone, however. All Americans have an important stake in the success of our education system, and every part of our society must be involved in meeting that challenge. Parents must be more interested and involved in their children's education, and students must accept the challenge of higher

expectations for achievement and greater responsibility for their future. In addition, communities, business and civic groups, and state, local, and federal government each has a vital role to play throughout this decade to ensure our success.

The first step is to establish ambitious national education goals — performance goals that must be achieved if the United States is to remain competitive in the world marketplace and our citizens are to reach their fullest potential. These goals are about excellence. Meeting them will require that the performance of our highest achievers be boosted to levels that equal or exceed the performance of the best students anywhere. The performance of our lowest achievers must be substantially increased far beyond their current performance. What our best students can achieve now, our average students must be able to achieve by the turn of the century. We must work to ensure that a significant number of students from all races, ethnic groups, and income levels are among our top performers.

If the United States is to maintain a strong and responsible democracy and a prosperous and growing economy into the next century, all of our citizens must be involved in achieving these goals. Every citizen will benefit as a result. When challenged, the American people have always shown their determination to succeed. The challenge before us calls on each American to help ensure our nation's future.

National Education Goals

Readiness for School

GOAL 1: By the year 2000, all children in America will start school ready to learn.

Objectives:

- All disadvantaged and disabled children will have access to high quality and developmentally appropriate preschool programs that help prepare children for school.
- Every parent in America will be a child's first teacher and devote time each day helping his or her preschool child learn; parents will have access to the training and support they need.
- Children will receive the nutrition and health care needed to arrive at school with healthy minds and bodies, and the number of low birthweight babies will be significantly reduced through enhanced prenatal health systems.

High School Completion

GOAL 2: By the year 2000, the high school graduation rate will increase to at least 90 percent.

Objectives:

- The nation must dramatically reduce its dropout rate and seventy-five percent of those students who do drop out will successfully complete a high school degree or its equivalent.

- The gap in high school graduation rates between American students from minority backgrounds and their non-minority counterparts will be eliminated.

Student Achievement and Citizenship

GOAL 3: By the year 2000, American students will leave grades four, eight and twelve having demonstrated competency in challenging subject matter including English, mathematics, science, history, and geography; and every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning, and productive employment in our modern economy.

Objectives:

- The academic performance of elementary and secondary students will increase significantly in every quartile, and the distribution of minority students in each level will more closely reflect the student population as a whole.

- The percentage of students who demonstrate the ability to reason, solve problems, apply knowledge, and write and communicate effectively will increase substantially.

- All students will be involved in activities that promote and demonstrate good citizenship, community service, and personal responsibility.

- The percentage of students who are competent in more than one language will substantially increase.

- All students will be knowledgeable about the diverse cultural heritage of this nation and about the world community.

Science and Mathematics

GOAL 4: By the year 2000, U.S. students will be first in the world in science and mathematics achievement.

Objectives:

- Math and science education will be strengthened throughout the system, especially in the early grades.
- The number of teachers with a substantive background in mathematics and science will increase by 50 percent.
- The number of U.S. undergraduate and graduate students, especially women and minorities, who complete degrees in mathematics, science, and engineering will increase significantly.

Adult Literacy and Lifelong Learning

GOAL 5: By the year 2000, every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship.

Objectives:

- Every major American business will be involved in strengthening the connection between education and work.
- All workers will have the opportunity to acquire the knowledge and skills, from basic to highly technical, needed to adapt to emerging new technologies, work methods, and markets through public and private educational, vocational, technical, workplace, or other programs.
- The number of quality programs, including those at libraries, that are designed to serve more effectively the needs of the growing number of part-time and mid-career students will increase substantially.
- The proportion of those qualified students, especially minorities, who enter college; who complete at least two years; and who complete their degree programs will increase substantially.
- The proportion of college graduates who demonstrate an advanced ability to think critically, communicate effectively, and solve problems will increase substantially.

Safe, Disciplined, and Drug-Free Schools

GOAL 6: By the year 2000, every school in America will be free of drugs and violence and will offer a disciplined environment conducive to learning.

Objectives:

- Every school will implement a firm and fair policy on use, possession, and distribution of drugs and alcohol.

- Parents, businesses, and community organizations will work together to ensure that schools are a safe haven for all children.

- Every school district will develop a comprehensive K-12 drug and alcohol prevention education program. Drug and alcohol curriculum should be taught as an integral part of health education. In addition, community-based teams should be organized to provide students and teachers with needed support.

Necessary Changes and Restructuring

These goals are ambitious, yet they can and must be achieved. However, they cannot be achieved by our education system as it is presently constituted. Substantial, even radical changes will have to be made.

Without a strong commitment and concerted effort on the part of every sector and every citizen to improve dramatically the performance of the nation's education system and each and every student, these goals will remain nothing more than a distant, unattainable vision. For their part, Governors will work within their own states to develop strategies for restructuring their education systems in order to achieve the goals. Because states differ from one another, each state will approach this in a different manner. The President and the Governors will work to support these state efforts, and to recommend steps that the federal government, business, and community groups should take to help achieve these national goals. The nature of many of these steps is already clear.

The Preschool Years

American homes must be places of learning. Parents should play an active role in their children's early learning, particularly by reading to them on a daily basis. Parents should have access to the support and training required to fulfill this role, especially in poor, undereducated families.

In preparing young people to start school, both the federal and state governments have important roles to play, especially with regard to health, nutrition, and early childhood

development. Congress and the administration have increased maternal and child health coverage for all families with incomes up to 133 percent of the federal poverty line. Many states go beyond this level of coverage, and more are moving in this direction. In addition, states continue to develop more effective delivery systems for prenatal and postnatal care. However, we still need more prevention, testing, and screening, and early identification and treatment of learning disorders and disabilities.

The federal government should work with the states to develop and fully fund early intervention strategies for children. All eligible children should have access to Head Start, Chapter 1, or some other successful preschool program with strong parental involvement. Our first priority must be to provide at least one year of preschool for all disadvantaged children.

The School Years

As steps are taken to better prepare children for schools, we must also better prepare schools for children.

This is especially important for young children. Schools must be able to educate effectively all children when they arrive at the schoolhouse door, regardless of variations in students' interest, capacities, or learning styles. Next, our public education system must be fundamentally restructured in order to ensure that all students can meet higher standards. This means reorienting schools so they focus on results, not on procedures; giving each school's principal and teachers the discretion to make more decisions and the flexibility to use federal, state, and local resources in more productive, innovative ways that improve learning; providing a way for gifted professionals who want to teach to do so through alternative certification avenues, and giving parents more responsibility for their children's education through magnet schools, public school choice, and other strategies. Most important, restructuring requires creating powerful incentives for performance and improvement, and real consequences for persistent failure. It is only by maintaining this balance of flexibility and accountability that we can truly improve our schools.

The federal government must sustain its vital role of promoting educational equity by ensuring access to quality educational programs for all students regardless of race, national origin, sex, or handicapping condition. Federal funds should target those students most in need of assistance due to economic disadvantage or risk of academic failure.

Finally, efforts to restructure education must work toward guaranteeing that all students are engaged in rigorous programs of instruction designed to ensure that every child, regardless of background or disability, acquires the knowledge and skills necessary to succeed in a changing economy. In recent years, there has been an increased commitment to mathematics and science improvement programs. The

federal government should continue to enhance financial assistance to state and local governments for effective programs in these areas. Likewise, there has been a greater federal emphasis on programs that target youth at risk of school failure and dropping out. The federal government should continue to enhance funding and seek strategies to help states in their efforts to seek solutions to these problems.

Improving elementary and secondary student achievement will not require a national curriculum, but it will require that the nation invest in developing the skills and knowledge of our educators and equipping our schools with up-to-date technology. The quality of teachers and teaching is essential to meeting our goals. We must have well-prepared teachers and we must increase the number of qualified teachers in critical shortage areas, including rural and urban schools, specialized fields such as foreign languages, mathematics and science, and from minority groups. Policies must attract and keep able teachers who reflect the cultural diversity of our nation. Policies that shape how our educators are prepared, certified, rewarded, developed and supported on the job must be consistent with efforts to restructure the education system and ensure that every school is capable of teaching all of our children to think and reason. Teachers and other school leaders must not only be outstanding, the schools in which they work must also be restructured to utilize both professional talent and technology to improve student learning and teacher- and system-productivity.

The After-School Years

Comprehensive, well-integrated lifelong learning opportunities must be created for a world in which three of four new jobs will require more than a high school education; workers with only high school diplomas may face the prospect of declining incomes; and most workers will change their jobs ten or eleven times over their lifetime.

In most states, the present system for delivering adult literacy services is fractured and inadequate. Because the United States has far higher rates of adult functional illiteracy than other advanced countries, a first step is to establish in each state a public-private partnership to create a functionally literate workforce.

In some other countries, government policies and programs are carefully coordinated with private sector activities to create effective apprenticeship and job training activities. By contrast, the United States has a multilayered system of vocational and technical schools, community colleges, and specific training programs funded from multiple sources and subject to little coordination. These institutions need to be restructured so they fit together more sensibly and effectively to give all adults access to flexible and comprehensive programs that meet their needs. Every major business must work to provide appropriate training and educational opportunities to prepare employees for the twenty-first century.

Finally, a larger share of our population, especially those from working class, poor, and minority backgrounds, must be helped to attend and remain in college. The cost of a

college education, as a percentage of median family income, has approximately tripled in a generation. That means more loans, scholarships, and work-study opportunities are needed. The federal government's role in ensuring access for qualified students is critical. At the same time, the higher education system must use existing resources far more productively than it does at present, and must be held more accountable for what students do or do not learn. The federal government will continue to examine ways to reduce students' increasing debt burden and to address the proper balance between grant and loan programs.

ASSESSMENT

National education goals will be meaningless unless progress toward meeting them is measured accurately and adequately, and reported to the American people. Doing a good job of assessment and reporting requires the resolution of three issues.

First, what students need to know must be defined. In some cases, there is a solid foundation on which to build. For example, the National Council on Teachers of Mathematics and the Mathematical Sciences Education Board have done important work in defining what all students must know and be able to do in order to be mathematically competent. A major effort for science has been initiated by the American Association for the Advancement of Science. These efforts must be expanded and extended to other subject areas.

Second, when it is clear what students need to know, it must be determined whether they know it. There have been a number of important efforts to improve our ability to measure student learning at the state and national levels. This year for the first time, the National Assessment for Education Progress (NAEP) will collect data on student performance on a state-by-state basis for thirty-seven states. Work is underway to develop a national assessment of adult literacy. These and other efforts must be supported and strengthened.

The Governors urge the National Assessment Governing Board to begin work to set national performance goals in the subject areas in which NAEP will be administered. This does not mean establishing standards for individual competence; rather, it requires determining how to set targets for increases in the percentage of students performing at the higher levels of the NAEP scales.

Third, measurements must be accurate, comparable, appropriate, and constructive. Placement decisions for young children should not be made on the basis of standardized tests. Achievement tests must not simply measure minimum competencies, but also higher levels of reading, writing, speaking, reasoning, and problem-solving skills. And in comparing America's achievement with that of other countries, it is essential that international comparisons are reliable. In addition, appropriate, nationally-

directed research, demonstration, data collection, and innovation should be maintained and recognized as a set of core responsibilities of the federal government in education. That role needs to be strengthened in cooperation with the states.

The President and the Governors agree that while we do not need a new data-gathering agency, we do need a bipartisan group to oversee the process of determining and developing appropriate measurements and reporting on the progress toward meeting the goals. This process should stay in existence until at least the year 2000 so that we assure ten full years of effort toward meeting the goals.

A Challenge

These national education goals are not the President's goals or the Governors' goals; they are the nation's goals.

These education goals are the beginning, not the end, of the process. Governors are committed to working within their own states to review state education goals and performance levels in light of these national goals. States are encouraged to adjust state goals according to this review, and to expand upon national goals where appropriate. The President and the Governors challenge every family, school, school district, and community to adopt these national goals as their own, and establish other goals that reflect the particular circumstances and challenges they face as America approaches the twenty-first century.

Adopted by the President and the Nation's Governors
February 1990

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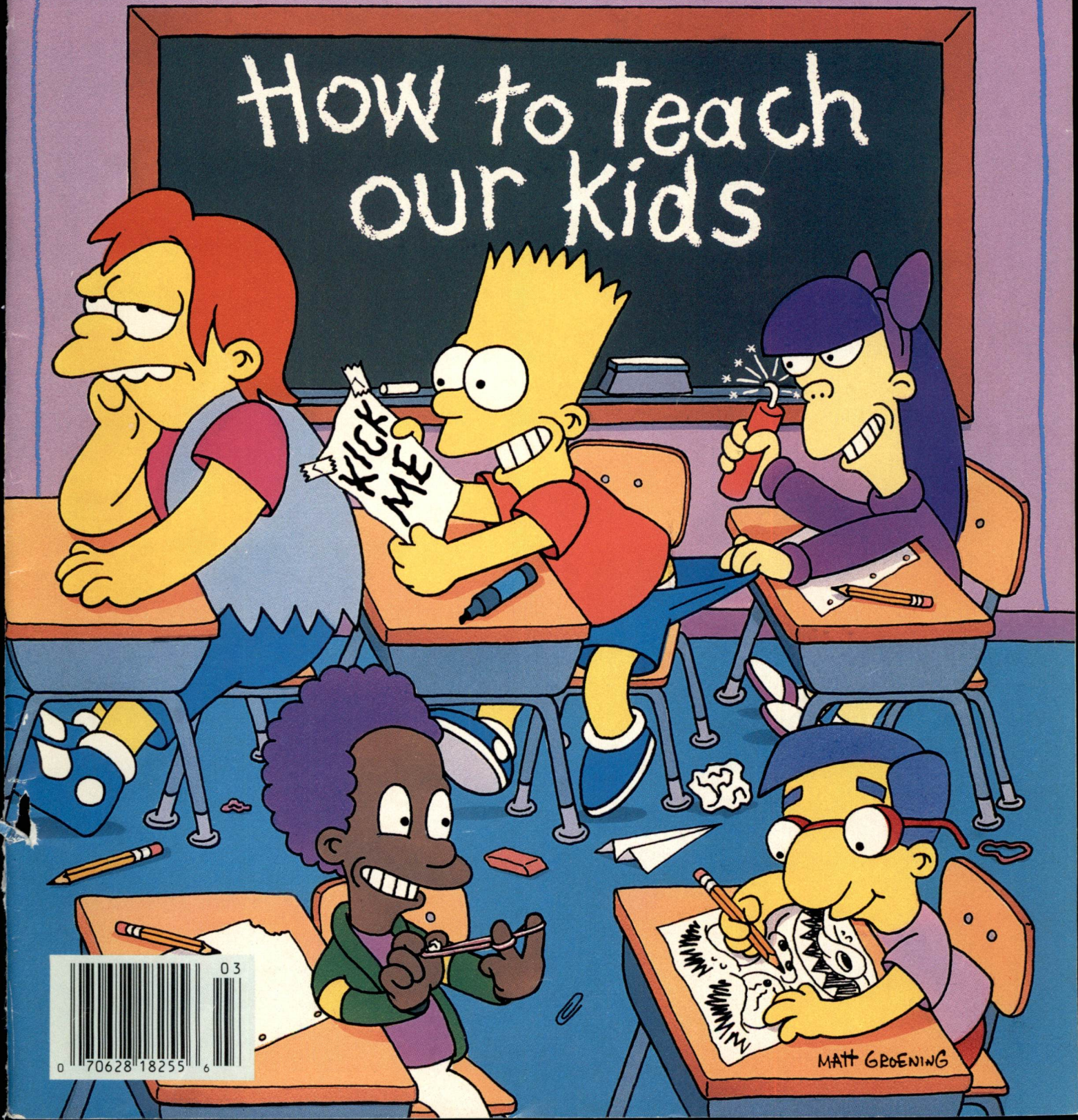

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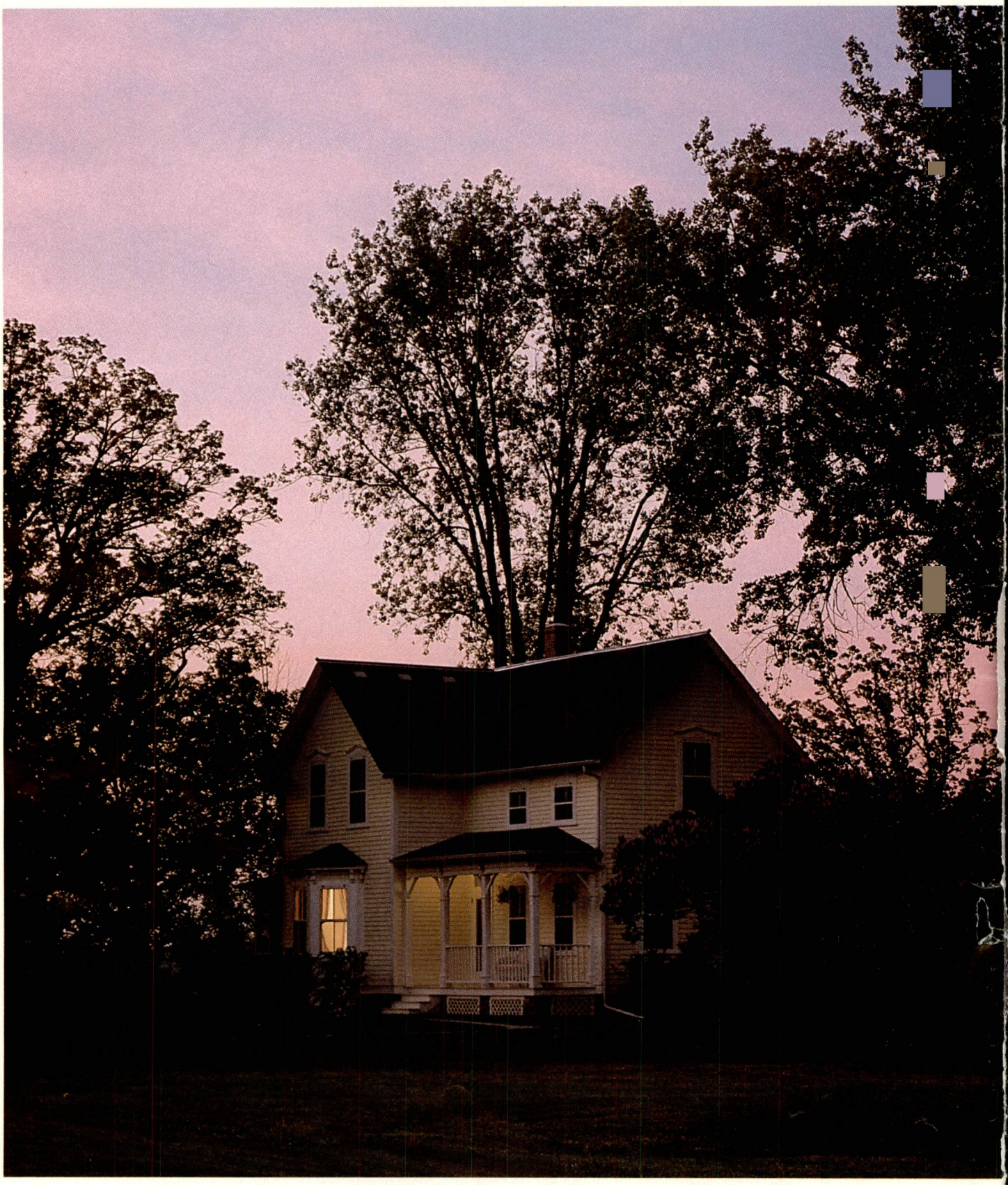

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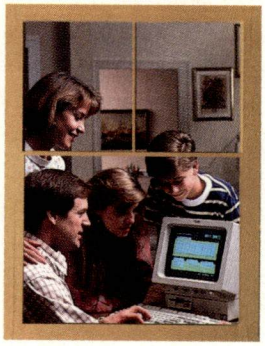

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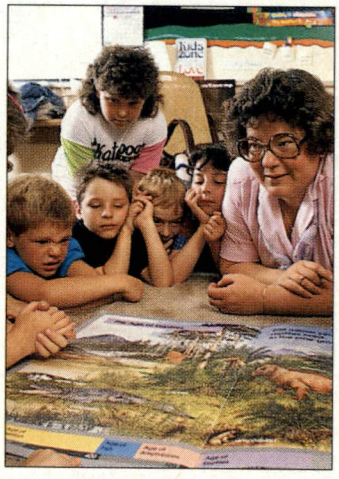

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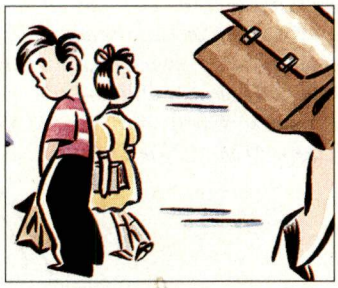

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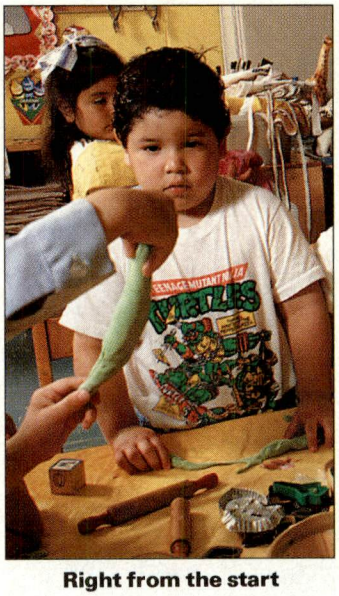

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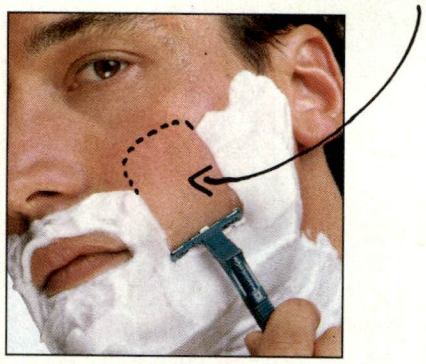
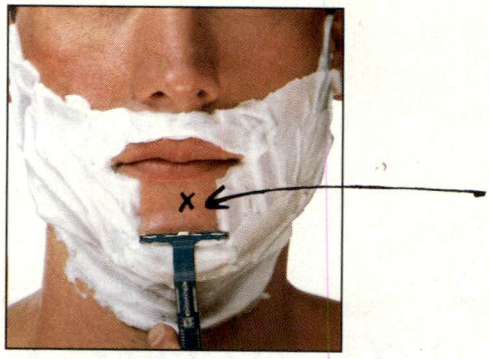
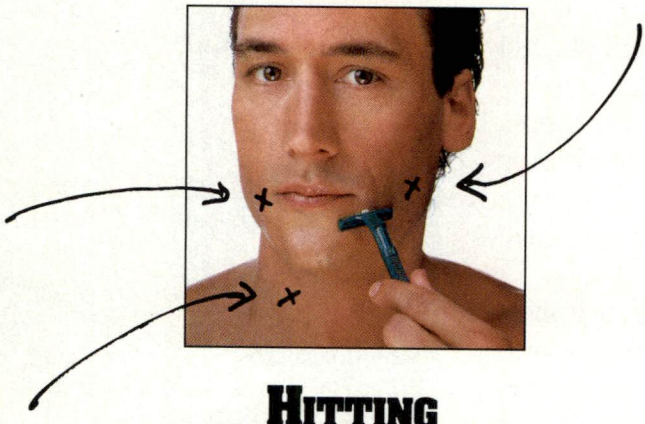


HANDLING THE ZONE.

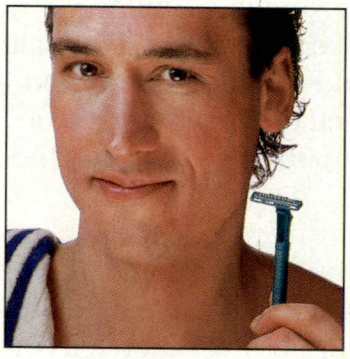


PENETRATING THE LANE.

HOW JIM PAXSON SHAVES EVERY PLACE ON HIS FACE.



HITTING THREE POINTS.



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There are many ways to teach and many ways to learn. In this issue you will find some of the best methods described. Use them or invent better ones. Everyone can learn—don't let any expert tell you differently—and everyone can teach. And the single most important skill that we must strive to master and then to impart is the ability to think and to think critically. Passivity has its place, just not in the minds of our children. They are embarking on a great adventure that with luck and care will last a lifetime. Teach them, too, not to be afraid but to welcome the new.

Of necessity much of the teaching will be done by others. But they can't succeed alone. Could any work be more important? The Bible commands us to teach our children, when we sit in the house and when we walk by the way. Teach our children when we lie down and when we rise up. Teach our children so that our days may be multiplied.

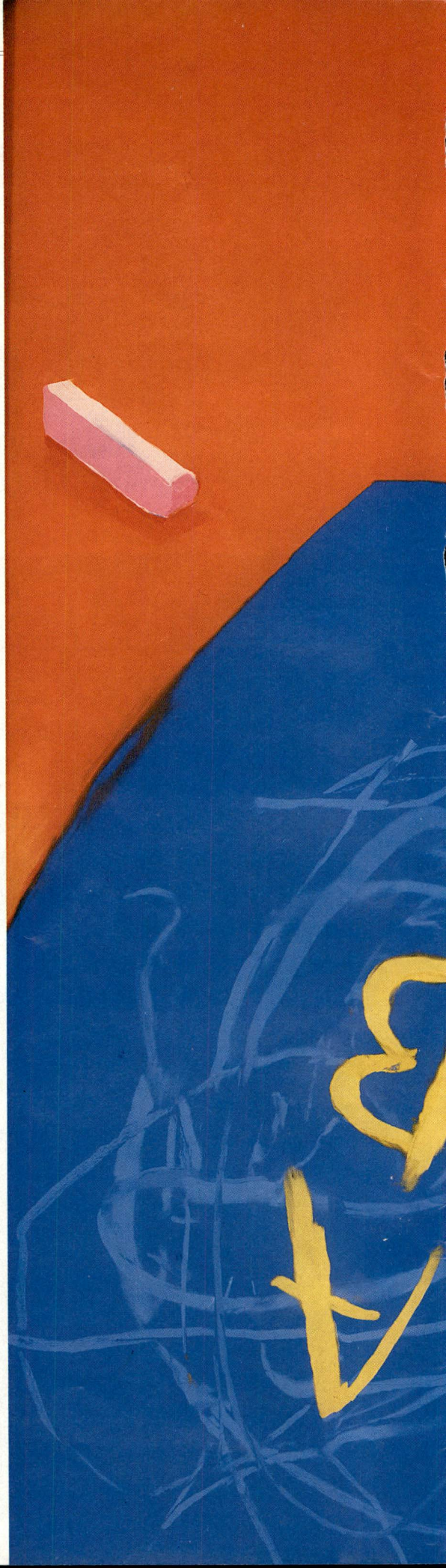
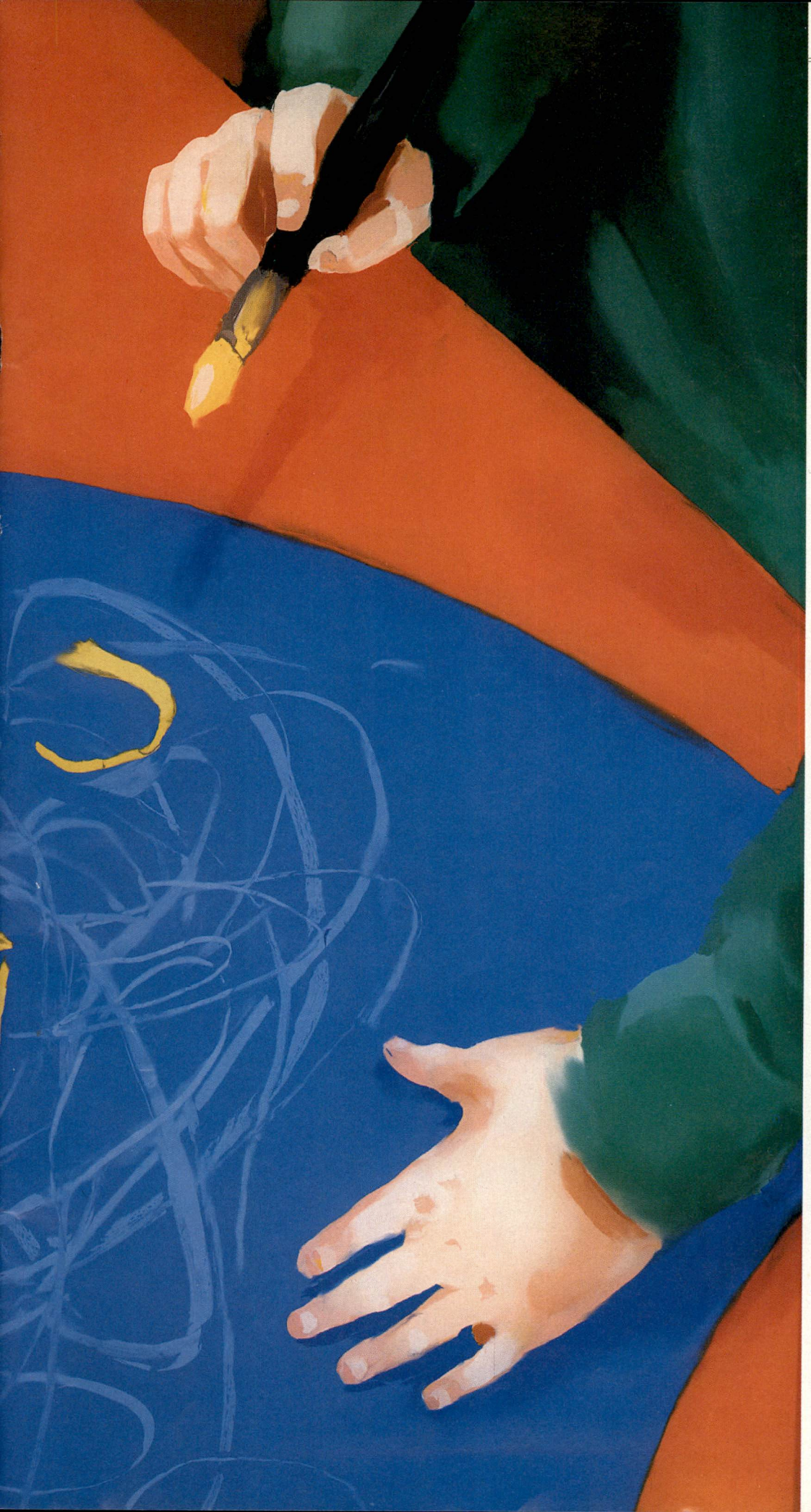


ILLUSTRATION BY PATTY DRYDEN



Either we teach our children or we abandon the future to chance and nonsense

The Reading WARS

By Barbara Kantrowitz

In Carol Davis's first-grade classroom at the Oakwood Elementary School in Hannibal, Mo., there are no lists of spelling and vocabulary words to be memorized, no work sheets to fill out. Instead, as the day begins, excited youngsters approach Davis's desk. One by one, they bring their spiral notebooks and papers for inspection. D. J. (for Dennis Jr.) Wisdom has written "I goto sam bekasean." Davis knows he's referring to a Teenage Mutant Ninja Turtle book that D.J. and his friend Sean had been reading earlier. "B-b-oo-oo-k," she says. "What can we do to make it sound like that?" She works with D.J. for a few minutes, sounding out words, covering part of "asean" with her hand until D.J. understands a little better how to write "I've got the same book as Sean." Then, it's on to the next child.

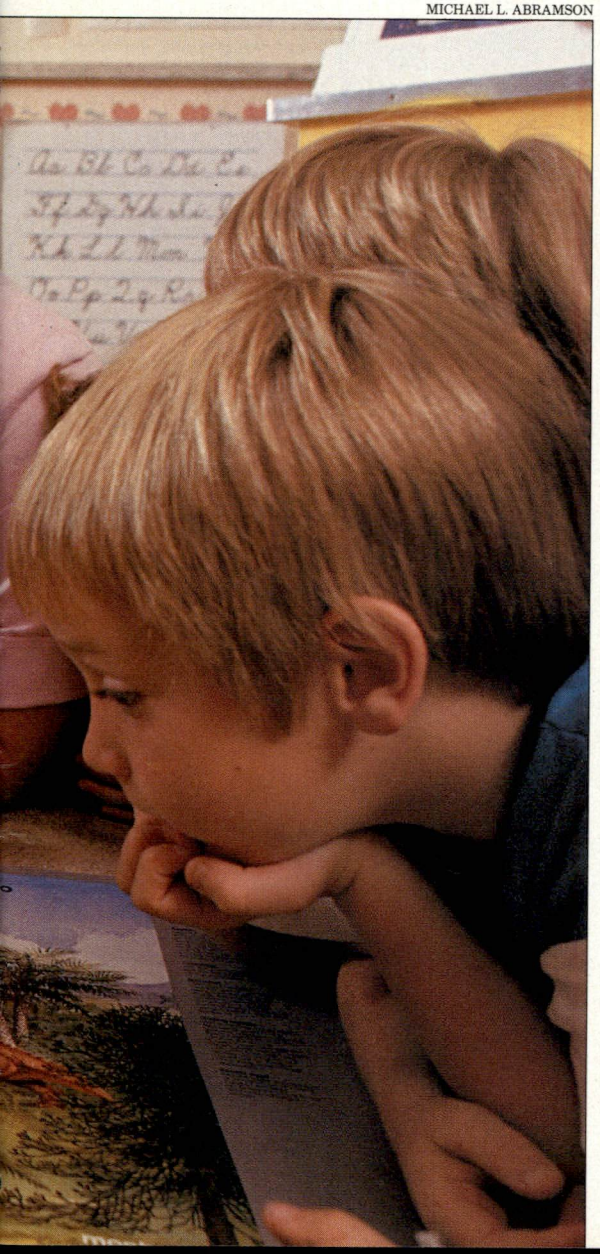
When Davis, 42, started teaching reading and writing 16 years ago, things were very different. Her classes were built around traditional basal readers. The instruction included a heavy dose of phonics, a method familiar to many of today's parents. In phonics, children learn letters and letter sounds before they move on to words. The kids found the books boring—and so did Davis. "With the old basals," she says, "it was, 'I will

go. You will go.' Children don't talk like that. They need language they can use."

For years, Davis and her colleagues complained about the banal basals. Finally, in 1986, the Hannibal district decided to experiment with a different approach. Known as whole language, this method teaches children to learn to read words by figuring out their meanings in context. Proponents say it's a more natural way to learn, akin to the way children develop the ability to communicate through talking, by listening and understanding words as they are used. Whole-language teachers don't abandon the phonics method completely; they just limit its use to times when sounding out words seems appropriate—as when Carol Davis helped D.J. figure out the word "book."

Davis and a few other Hannibal teachers experimented with whole language in their classrooms and liked what they found. Instead of basals, youngsters use real children's books about subjects that interest them—like dinosaurs or sports. Their first attempts at writing are judged not for spelling or grammar, but by whether the kids get their meaning across. Dictionary perfection comes later. With whole language, the kids are much more eager to learn, says Davis. "It's a self-fulfilling reward," she says. "It's something within. We're not giving little smelly stickers for reading the word list like we used to." Reading good books is the only incentive necessary, Davis says.

MICHAEL L. ABRAMSON



According to teachers like Carol Davis, children need language they can use

Part of the education establishment has reacted to this technique much as an antibody might treat an infectious intruder. "Whole-language proponents seem to say that a good heart goes a long way," says Jeanne Chall, a Harvard education professor who runs the university's reading laboratory. "They fear rote learning more than no learning." Chall and others say learning phonics is an essential first step. They view early reading as a decoding process that must be taught, not as an instinctive ability that all children possess. Whole language might work for some children, Chall says, particularly those who are read to at home and who become familiar with the alphabet at an early age. But she thinks the method works against poor kids or new immigrants who often enter school handicapped by a lack of opportunity at home. Learning-disabled children also need more structure than whole language provides, she says.

Not so, insists the other side. University of Arizona professor Ken Goodman, who has written extensively about the theory and history of the whole-language movement, says that all children learn best when taught in a way that makes sense to them, whether they are poor or rich. "Language is easy to learn when it's meaningful and functional," he says—no matter what a child's background.

In first grade, it's phonics versus 'whole language.' Good teachers use a bit of both.

The push-pull between these two approaches to reading may seem like a modern debate, but it's actually more than a century old—and reflects different ways of looking at learning. From Colonial times until the middle of the 19th century, most children learned to read through a process that resembles modern phonics instruction. After mastering the alphabet, youngsters went on to practice reading simple syllables. There were no special children's texts, however; the Bible was the book most commonly used in the classroom. According to Marilyn Jager Adams, author of "Beginning to Read: Thinking and Learning About Print," reading was seen as simply a means to an end—the inculcation of moral and social values. Of course, most youngsters didn't get even that chance; literacy was a prerogative of the relatively privileged few.

In the mid-1800s, educators began to question the common practice. Reformers like Horace Mann of Massachusetts decried the rote lessons they saw in classrooms as pointless. No child, Mann wrote, can enjoy learning "from all these stiff and lifeless columns of the alphabet." Mann's solution: teach children meaningful words rather than letters and syllables. This method came to be known as whole word, an early ancestor of whole language. Over the next few decades it grew in popularity. Publishers began distributing textbooks like the McGuffey

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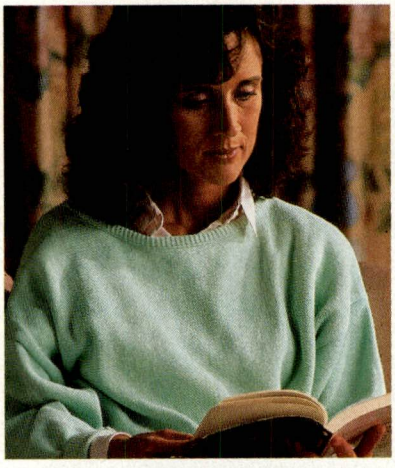

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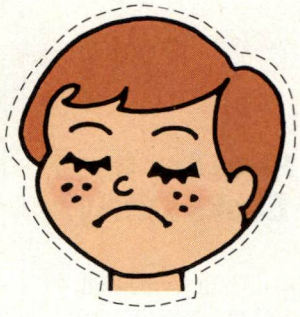

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IRA WYMAN FOR NEWSWEEK

At Harvard, Jeanne Chall helps children with the sweet sounds of phonics

Read Any Good Books Lately?

- 54.1% of 9-year-olds say they read for pleasure daily. But by age 17 that number drops dramatically: only 28.1% read for fun every day.
- About 9% of both 9- and 17-year-olds say that they never read for pleasure.
- Boys between ages 8 and 10 rank outdoor sports first in terms of fun, while reading a book or magazine finished sixth. Girls the same age rank reading first and outdoor sports second.

SOURCES: THE NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS, THE CALIFORNIA RAISIN READING PROGRAM

Readers geared to specific abilities.

The meaning-first curriculum dovetailed with broader social concerns. The influx of immigrants at the turn of the century produced an increasingly diverse school population. Marilyn Adams says that education was seen as a key to producing a productive, creative and responsible citizenry; a curriculum that relied too heavily on rote learning was seen as contrary to that goal. Educational philosopher John Dewey carried the theory even further by giving students such active, real-life experiences as designing and building their own model houses. By the 1920s, the idea had caught on and from that point until the late 1950s, the meaning-first curriculum dominated classroom practice.

All that began to change 35 years ago, with the publication of a controversial book by Rudolf Flesch called "Why Johnny Can't Read." He argued that because kids didn't get a strong dose of basic education, the United States was falling behind its international rivals. (Sound familiar?) Phonics, he said, was a critical first step to learning to read and write. Although professional educators questioned Flesch's scholarship, the public took up his cause. This popular uprising was finally felt in the academy. Harvard's Chall conducted what was considered at the time to be the most complete review of all the available scientific evidence. Her conclusion, published in her 1967 book "Learning to Read: The Great Debate," was that a "code-emphasis" method of reading, based on phonics, produced better results than a meaning-emphasis approach. In the wake of her book, which was read by educators and school administrators around the country, many schools changed back to phonics in the 1970s. Chall says that's one reason why basic reading scores of fourth graders improved significantly in that period. In the late 1970s and early 1980s, however, many teachers and administrators, like those in Hannibal, began to equate the way phonics was taught with rote learning. They felt too much emphasis on decoding turned the joyful experience of reading into drudgery for children. Enter whole language.

In the current debate, both sides claim that the weight of research is on *their* side. Chall updated her book in 1983; by then, she says, there was even more evidence that phonics works. She notes that fourth graders' reading scores dropped in the 1980s as whole language became more common. While she doesn't place all the blame on the new technique, Chall thinks the theory is basically flawed. "Whole language says that beginning and later reading are the same," she says, and—in her view—they are not. New readers must learn to decode the letters; later, they can read by sight. She also rejects the notion that reading is a natural developmental process, like speaking. "It isn't natural," she says. "Everybody speaks, but half the world doesn't read."

But whole-language teachers say their own classroom observations confirm the validity of their approach. Children enter school ready, willing and able to learn reading and writing, says Dorothy J. Watson, a University of Missouri education professor and the president of the Whole Language Umbrella, a teachers' group. "You have got to trust that children are learners," she says. Turning reading into a mechanistic act by breaking words down into nonsense syllables robs children of the joy of learning, says Liz Boone, the principal of Carol Davis's school and a former first-grade teacher herself. "It's like telling someone he has to learn all the notes and time and key signatures before he can play a single piece of music. This way, they plan that piece while they learn." Test scores don't tell the whole story, Boone and others say. They argue that a more accurate method of determining the success of a program would be to look at comprehension and writing skills. Many tests, however, stress only word and sound recognition. Some whole-language proponents are lobbying for new tests; in the meantime many teachers say they prep kids for the exams by giving practice tests just before the exams are given.

The good news about the debate this time around is that the extremes seem less extreme than in the past and there's a vast middle ground. Hardly anyone thinks that children should be subjected to hours of drilling. Teachers who rely on rote learning "are not good teachers," says Chall, adding that phonics does not have to be boring. Whole-language advocate Dorothy Watson agrees. "People get so uptight about phonics," she says. "Phonics is one of the systems of language. We use phonics along with meaning, syntax and grammar."

One subject on which both sides seem to agree is writing instruction. Many whole-language and phonics-first advocates support innovative programs, most of them introduced in the last decade, that stress content over form. These programs encourage children to think like writers and express themselves in writing long before they've mastered all the mechanics of language. The use of what teachers call "invented spelling" (to distinguish it, in the youngster's mind, from "dictionary spelling") often troubles

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Buckle up—together we can save lives.

Children are encouraged to write long before they've mastered all the mechanics of language

parents. They fear that their child will forever write "while" as YL or spell "looks" LUKS. However, educators say that this early spelling is, in effect, a form of self-taught phonics. Children are figuring out for themselves that the letters have particular sounds that come together to form words. Their guesses at spelling may not always be correct in an adult's eyes, but they usually exhibit some logic. Most studies of reading have shown that there is a direct correlation between learning to write and learning to read. Children who are encouraged to write early—even before they know how to spell correctly—learn to read more quickly. Several studies have also shown that the use of invented spelling is particularly helpful to children who haven't been read to a lot at home and have a low awareness of the relationship between letters and sounds.

In a recent report, Marilyn Adams landed right in the middle of the phonics/whole-language controversy. Many children who are read to regularly will probably do OK without direct instruction in phonics, she says, because they have already learned word sounds and the alphabet by listening and watching. But other children need help in learning to recognize the relationship between symbol and meaning. She estimates that 25 percent of middle-class children and an even higher percentage of poor youngsters enter school without any knowledge of the rudiments of reading. Those children, she concludes, need phonics.

For Carol Davis, the pedagogical debate is over. And her students have won. At the end of the day, the children gather around a horseshoe-shaped desk for a kind of writers' workshop. They read aloud from stories they have written, and then Davis asks for comments. "Did it make sense? Tell me two things you remember from it." Teacher and students looks for misspelled words and correct them. Even though it's more work for her than the traditional method, she's satisfied. "There's no way I could go back to the old way," she says. "I would hate to think I had to after all this freedom."

With ROXIE HAMMILL *in Hannibal*

How to Raise Good Readers

Unfortunately, there are a lot of hucksters around who try to take advantage of eager parents by selling expensive and complicated systems for teaching reading. At best, most of these are a waste of money; at worst, they may actually *discourage* a child because they are so boring. Raising good readers takes time, not money. Here are some tips from educators and parents:

1 Start reading to children at a very early age—basically, as soon as they are able to sit in your lap. A 6-month-old may not understand the words to Dr. Seuss but he will, in time, think of reading as a pleasurable activity and associate it with your love and warmth. He will also learn the basics of books: that they tell a story, that each page contains a discrete piece of information, that the funny symbols (otherwise known as letters) have distinct meanings. When reading to young children, it's important to be flexible. You may want to proceed from beginning to end in an orderly fashion. He may want to stay on one page and study it intently. Don't think of this as stubbornness. Consider it an early form of art appreciation; he's probably just pondering the mysteries of the illustration.

2 Take advantage of story hours at children's bookshops or your local library. Again, the point is to reinforce the feeling that reading is fun, not drudgery. Bookstore owners and librarians are also valuable resources for suggesting age-appropriate books. Both stores and libraries also often have reading clubs that reward children for the number of books they have completed. Reading should be its own reward, but sometimes a little outside recognition helps.

3 While there's certainly nothing wrong with buying lots of good books for your kids, don't think that unless you shell out big bucks you will forever stunt their intellectual growth. Many fine children's books are available in paperback versions at reasonable prices. Look for used-book sales and visit the library often. You'll teach valuable lessons about responsibility. She has to keep the books in good condition and get them back in time—or pay a fine.

4 Establish quiet times and places at home for reading. Again, this doesn't require spending a lot of money. A comfortable chair and good light is all that's necessary.

5 Teach by example. If you are a couch potato in front of the TV, your child probably will be one, too. On the other hand, if your kids see you happily curled up with a good book, they'll get the idea that you not only preach reading, you practice it as well.

6 Don't stop with books. There are wonderful children's magazines available on such specialized topics as sports, nature, science and history. A year's subscription is usually quite reasonable—and makes a great present as well as giving further encouragement to read.

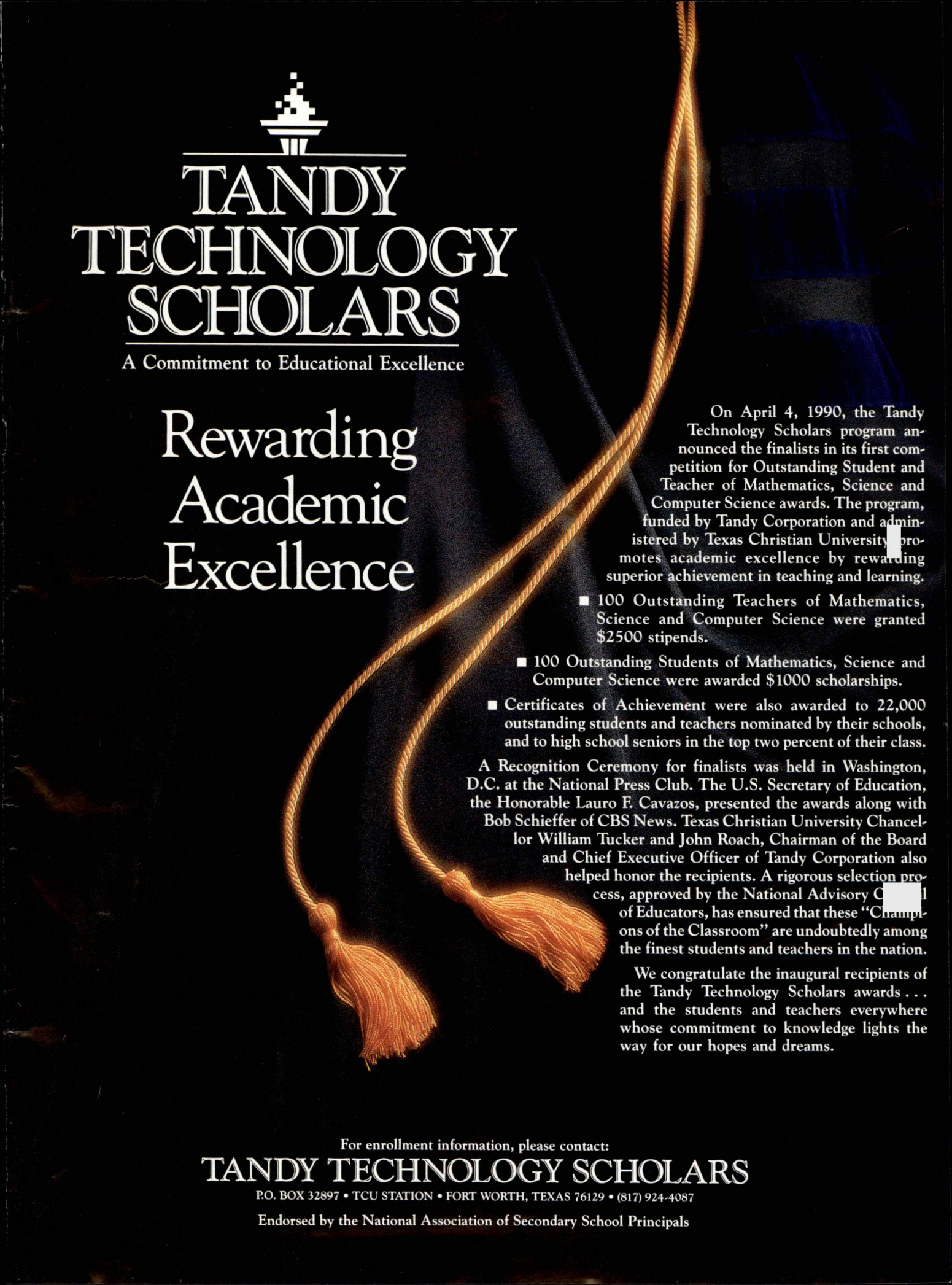
7 Give them a reason to read. If your child is a budding baseball fan, look for sports books. If she likes animals, try nature stories. Youngsters have a much greater incentive when they are engaged in the subject matter.

8 Remember that not all children will take to reading in the same way. One daughter may be the type who reads the classics under the covers at night with a flashlight; the other may limit her recreational reading to the Sunday comics and the kiddie version of junk novels. It's virtually impossible to enforce taste standards as children get older. Just be glad they're reading *something* and make sure they have plenty of opportunities to move up to a higher level when and if they are ready.

9 Finally, even after your children are proficient and eager readers, keep reading to them. Try books that may be a little beyond their reach at the moment—for example, traditional favorites like "Treasure Island" or "Little Women." After a while, reading together gets to be a habit that no one wants to give up.

IRA WYMAN FOR NEWSWEEK

It's never too early to start



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A Recognition Ceremony for finalists was held in Washington, D.C. at the National Press Club. The U.S. Secretary of Education, the Honorable Lauro F. Cavazos, presented the awards along with Bob Schieffer of CBS News. Texas Christian University Chancellor William Tucker and John Roach, Chairman of the Board and Chief Executive Officer of Tandy Corporation also helped honor the recipients. A rigorous selection process, approved by the National Advisory C[redacted]l of Educators, has ensured that these "Champions of the Classroom" are undoubtedly among the finest students and teachers in the nation.

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CREATING PROBLEMS

It's time to minimize rote learning and concentrate on teaching children how to think

By Jerry Adler

Let us consider two machines, each capable of dividing 1,128 by 36. The first is a pocket calculator. You punch in the numbers, and in a tenth of a second or so the answer appears in a digital display, with an accuracy of, for all ordinary purposes, 100 percent.

The second is a seventh grader. You give him or her a pencil and a sheet of paper, write out the problem, and in 15 seconds, more or less, there is a somewhat better-than-even chance of getting back the correct answer.

As between them, the choice is obvious. The calculator wins hands down, leaving only the question of why the junior high schools of America are full of kids toiling over long division, an army of adolescents in an endless trudge, carrying digits from column to column.

Well, the typical answer goes, seventh graders don't practice long division in order to someday make calculators obsolete. They do it because it's good for them. They learn the importance of keeping their place columns straight. It's exercise for the mind—in the way that hoeing is exercise for the back.

Increasingly, though, the question is being asked—and not, as one might expect, just by seventh graders themselves—why this must be so. What exactly is the value of long division, or any of the rudimentary arithmetic skills, in the age of the computer and pocket calculator? "What is it we expect students to learn?" asks Thomas Romberg, a professor of curriculum and instruction at the University of Wisconsin at Madison. "If we're preparing them to be Victorian clerks with quill pens and green eyeshades, we're not doing our job. There isn't anyone out there anymore who makes his living doing long division."

It's coming, the one thing most laymen fear worse than math itself: *a revision of the mathematics curriculum.* The need is certainly there: a 1982 international test of mathematics achievement found that American 12th graders ranked 14th among the 15 nations surveyed in advanced algebra—just behind Hungary and slightly ahead of Thailand. (Hong Kong was first, followed closely by Japan.) The necessary reforms have been proposed and are being promulgated by blue-ribbon organizations: the National Council of Teachers of Mathematics, the Mathematical Sciences Education Board of the National Research Council. Now all that's needed is the cooperation of the 50 states, the nation's 15,577 school boards, and the 1.3 million elementary and high-school math teachers in the country, and eventually American high-school seniors can aspire to, if not the excellence of Hong Kong, at least the mediocrity of New Zealand and Belgium.

The proposed changes follow at least two other movements in the past generation, the "new math" of the 1960s and the counterreform it gave rise to, known as Back to Basics. New math was a well-intentioned, but in retrospect wrongheaded, attempt to put the public-school math curriculum on the broadest possible conceptual basis. By starting with set theory and number theory and gradually deriving the principles of arithmetic, it was hoped that students would get an early appreciation for the beauty and power of mathematics and someday make better research mathematicians. It was university mathematics departments that proposed new math in the first place, without much input from actual public-school teachers, and that may have been part of the problem. "It was an interesting experiment," says J. Kevin Colligan, a mathematician with the top-secret National Security Agency, currently on loan to the NRC to coordinate reform efforts in math education. "But maybe it's not what we ought to lay on every kid."

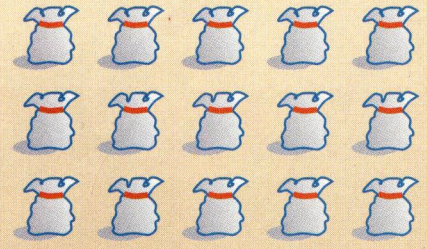
Back to Basics, in reaction to the lack of rigor many educators found in new math, emphasized "skills," acquired by drill of the most rudimentary sort. The apotheosis of Back to Basics is Kumon Mathamatex, a Japanese system of timed, graduated exercises that take students from simple arithmetic to calculus. Students must score 100 percent on their worksheets within a prescribed time period—usually 15 to 30

ILLUSTRATION BY ROBERT NEUBECKER

Have Your Math Skills Atrophied?

On the 1986 National Assessment of Educational Progress test, the results were disappointing. To see what we're up against, try these yourself.

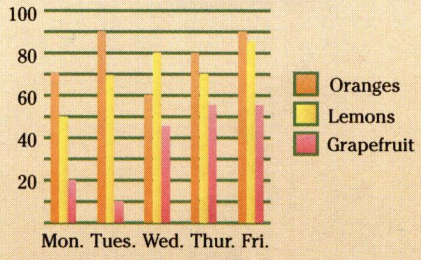
2nd Grade Problem: *73.8% of 9-year-olds answered correctly questions such as the one below, along with 98.5% of 13-year-olds, and 99.9% of 17-year-olds.*



Each bag has 10 marbles in it. How many marbles in all?

☐ 10 ☐ 25 ☐ 140 ☐ Don't know
☐ 15 ☐ 140 ☐ 150

4th Grade Problem: *20.8% of 9-year-olds answered correctly questions like this, along with 73.1% of 13-year-olds, and 96% of 17-year-olds.*



How many boxes of fruit were picked on Tuesday?

☐ 10 ☐ 170 ☐ 940 ☐ Don't know
☐ 90 ☐ 400 ☐ 1,700

8th grade Problem: *15.9% of 13-year-olds and 51.1% of 17-year-olds answered correctly questions like this.*

If 7x + 4 = 5x + 8, then x =

☐ 1 ☐ 2 ☐ 4 ☐ 6

8th grade Problem: *Only .4% of the 13-year-olds and 6.4% of 17-year-olds answered correctly questions like this.*

R ?	S	40
35	25	15
T	V	W

R, S, T, V and W represent numbers. The figure is called a magic square because adding the numbers in any row or column or diagonal results in the same sum.

What is the value of R?

☐ 30 ☐ 40 ☐ 50 ☐ Can't tell

SOURCE: EDUCATIONAL TESTING SERVICE

ANSWERS: 150 (MARBLES), 170 (FRUIT), 2 (EQUATION), 30 (MAGIC SQUARE)

CHARTS BY MEREDITH HAMILTON—NEWSWEEK

$x^2+2xy+y^2=1$

More math students
In 1987, 99.4% of high-school seniors had taken some math in the previous four years, 2 percentage points more than in 1982.

But little advanced course work
76.3% of them took Algebra I but just 47.1% continued on to Algebra II, a course that typically includes a heavy dose of trigonometry.

A necessary evil
Even though 88% of eighth graders thought math would be useful in their future, only 56.6% looked forward to math classes. And almost 21% said they were afraid to ask questions in those classes.

SOURCES: DEPARTMENT OF EDUCATION, NATIONAL CENTER FOR EDUCATION STATISTICS

minutes—before going on to the next set. About 200 American school systems, mostly in the South, offer Kumon as a supplement to their regular math instruction. The National Council of Teachers of Mathematics takes no formal position on Kumon, according to president Iris Carl, but many educators think it puts the emphasis in the wrong place. Says Shirley Hill, professor of mathematics and education at the University of Missouri at Kansas City: "The hidden agenda [behind drill programs] often is to look good on a test."

Moreover, Romberg points out, as a nation "we don't do that badly, compared to the Japanese, on the things Kumon emphasizes." Where American students fall down is in thinking. Take the division problem in the first sentence of this article, and recast it this way: "An Army bus holds 36 soldiers. If 1,128 soldiers are being bused to their training site, how many buses are needed?" Only 70 percent of secondary-school students who were given this problem in a national assessment performed the right operation—dividing 1,128 by 36 to arrive at 31 with a remainder of 12 (or $31\frac{1}{3}$). Worse, of those who got that far, only one in three went on to draw the conclusion that to move all the soldiers, a total of 32 buses were needed. The rest, accustomed to the sterile, self-referential world of school math courses, did not stop to question an answer involving one third of a bus.

For the majority of students, who will never look at a table of trigonometric functions after graduation, the ability to use math to make sense of the world is the main reason to bother learning it at all. Mathematician John Allen Paulos wrote an entertaining book two years ago deploring what he called "Innumeracy"—the widespread ignorance of mathematics in the United States, freely confessed to by people who would never admit to a comparable disability in, say, reading. He wasn't talking about people who can't figure out how much change they should get when they buy three packs of cigarettes with a $20 bill, either; he was talking about an inability to function in the world as an informed citizen. In a country filled with insurance companies and rife with lotteries, it isn't safe to go out without a rudimentary understanding of statistics. Astrologers get rich off people who don't understand that by the laws of probability, someone who makes enough predictions will be right at least some of the time. "Without some appreciation of common large numbers," Paulos wrote, "it's impossible to react with the proper skepticism to terrifying reports that more than a million kids are kidnapped each year."

Of course, you don't really need intermediate algebra to vote for president; how many presidents (besides Jimmy Carter) could have solved a quadratic equation themselves? At least some of the math that most adults learned in high school is probably redundant these days. The drudge work of trigonometry, for example—poring over tables of functions to interpolate the missing values in right triangles—is an obvious candidate to be performed by a calculator.

On the other hand, the principles of trigonometry are central to an understanding of the physical world—from the process of triangulation that gives the distance to nearby stars to the calculation of how long to make the railings on a staircase. Those advancing the new math curriculum are not unanimous on just how much math high-school students need, but most draw the line at or just below the level of calculus.

The central feature of the proposed new curriculum is a devaluation of "skills" for their own

PHILLIP WORSHAM
213 Orchard Street
Justin, Oklahoma 10075

CAREER OBJECTIVE	An entry level position in an Electrical Engineering research or design firm.
EDUCATION	Bachelor of Science in Electrical Engineering, May 1987, Williamstown University; Justin, Oklahoma
EXPERIENCE	**Summer Internship** Summer 1986 Central Power and Light, Justin, Oklahoma Interned in the Power Transmission Department
HONORS	Dean's List
ACTIVITIES	Varsity Soccer Intramural Softball
REFERENCES	Available Upon Request

LIEUTENANT JACK TODD MILLS
285 Maple Street
Justin, Oklahoma 10075

CAREER OBJECTIVE	An entry level position in an Electrical Engineering research or design firm.
EDUCATION	Bachelor of Science in Electrical Engineering, May 1987, Williamstown University; Justin, Oklahoma U.S. Army Signal Corps Officer Basic Course, September 1987
EXPERIENCE	**Training and Operations Officer,** U.S. Army Reserve Officers' Training Corps, Williamstown University Planned, organized, and executed training for battalion of 110 cadets. **Communications Platoon Leader,** Headquarters Troop, 1-17 Cavalry, 82nd Airborne Division, Fort Bragg, NC Responsible for the training, discipline and welfare of a forty-man platoon.
HONORS	Dean's List Distinguished Military Graduate Commandant's List, Officer Basic Course
ACTIVITIES	**Army ROTC basic and advanced camps** U.S. Army Airborne School Varsity Wrestling, Intramural Football
REFERENCES	**PROFESSOR OF MILITARY SCIENCE** Lieutenant Colonel Karl Dunn Williamstown University College of Liberal Arts CMA 1.702 Justin, Oklahoma

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Memory Add, Memory Clear

- Math students who scored in the top 25% on a national test were more than twice as likely to use calculators for daily computation than were students in the bottom quartile.
- Girls use them for homework and tests more frequently than boys do.
- Although most high-school juniors say that they or their families own a calculator, only 26% said that their school made them available for classroom use.

SOURCE: NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

sake and a concomitant emphasis on using math as an adjunct to logic. Romberg chaired the commission of the National Council of Teachers of Mathematics that drew up the new "Curriculum and Evaluation Standards for School Mathematics"—more than a dozen specific recommendations in each of three grade clusters (K-4, 5 through 8, 9 through 12). The document explicitly endorses making calculators available "at all times"—including, presumably, during tests. It emphasizes the logical, problem-solving, practical side of mathematics. Instruction in the early grades should be hands-on, using real materials such as blocks, chips and cutout figures to illustrate concepts of number, shape, size and probability. Children are to be taught unfamiliar but useful skills like "chunking"—estimating area or volume by mentally filling a space with boxes of a given size. There is a strong emphasis on estimating. The principle—a radical one, in the context of math as it has usually been taught in America—is that being able to accurately multiply, say, 28 by 107 is less important than being able to tell at a glance that the product is about 3,000.

More difficult problems are introduced in later grades. "Problems," of course, have always been part of the math curriculum in American schools. But the new curriculum is distinguished from the traditional approach in which algebra came minimally disguised as tanks being filled by large pipes and simultaneously emptied by small ones, or airplanes taking off from Chicago and flying in opposite directions at different speeds. The purpose of problems is to get students to think, to stretch their minds, rather than just plug numbers into a formula. Here, for instance, is a recommended problem for grades five to eight: "Select five digits, and combine them to form a two-digit and a three-digit number so that their product is the largest possible. Then find the arrangement that gives the smallest product."

You may, of course, use your calculator.

The point here is not just that the problems are different; what's critical is what happens after the questions are posed. Teachers will no longer just lecture and students will no longer just work silently at their desks. Instead, the class will discuss ways to solve each problem, and group work will replace the solitary math drill.

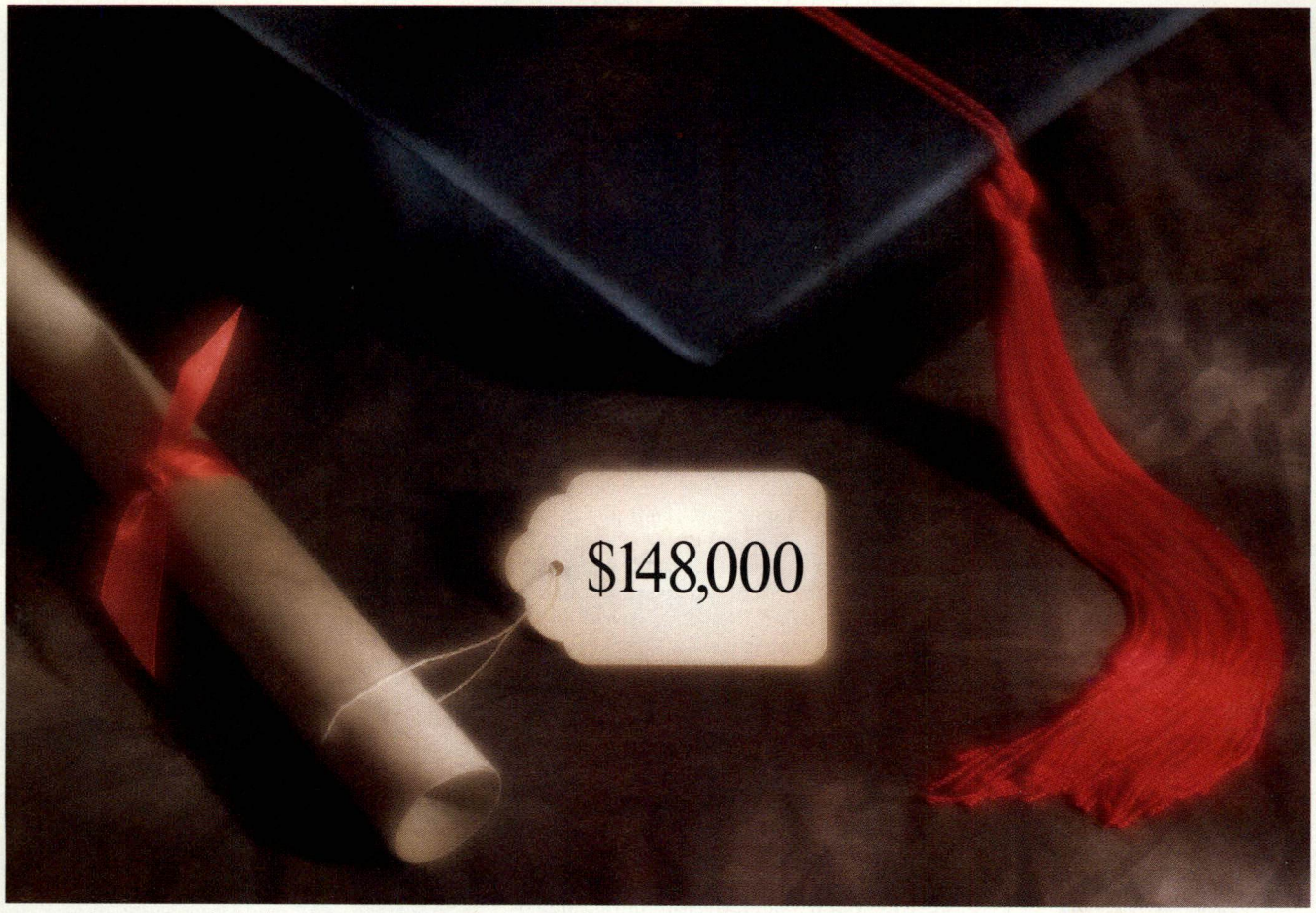
The premium will be on *thinking.* Taught this way, educators say, math loses much of its power to terrify and baffle students. This should help reduce the fear and trembling that has come to be known as math anxiety, an affliction that hits girls in disproportionate numbers. This ailment, critics charge, does not grow out of an inborn numberphobia but from the way in which math has been taught and perceived. If only boys are expected or encouraged—subtly or directly—to excel in math, then only boys will succeed. By emphasizing creativity, math should be more accessible to everyone in the classroom.

Changing the curriculum may take us only so far. The highest reaches of research mathematics remain as male-dominated as the National Football League. And there are some theories that suggest that at this level biology is destiny. The research continues. Meantime, progress can be made in more pedestrian precincts. For instance, there are still some otherwise high-powered women who quake before balancing a checkbook or running a personal computer. Their fearful message is not lost on their daughters and sons. The war on math anxiety, then, has a home front, too.

In school, it all comes down to that most basic of educational requirements, a teacher standing in front of a class—a teacher like Larry Williams, who in six years at Eutaw High School in rural Greene County, Ala., has virtually doubled the proportion of students who pass their statewide graduation exams—from half to 98 percent. Working with students who are mostly poor, mostly black and mostly uninterested in math, at least at the outset, he devotes the first week of each term to "motivational technique," lessons in how to take a math test and how to solve problems. "These kids are 'global learners'," Williams says, "meaning they have to see pictures or illustrations to understand analytical concepts." He divides students into competitive teams, the team members working cooperatively to solve the problems as quickly as possible. "My interest is not just getting the answer," Williams says, "but getting the kids to come up with solutions."

After all, if all you want is answers, you might as well use a calculator. ■

Are you ready for this?



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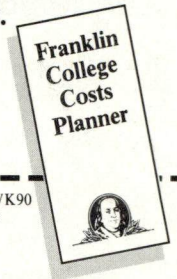

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SCIENCE

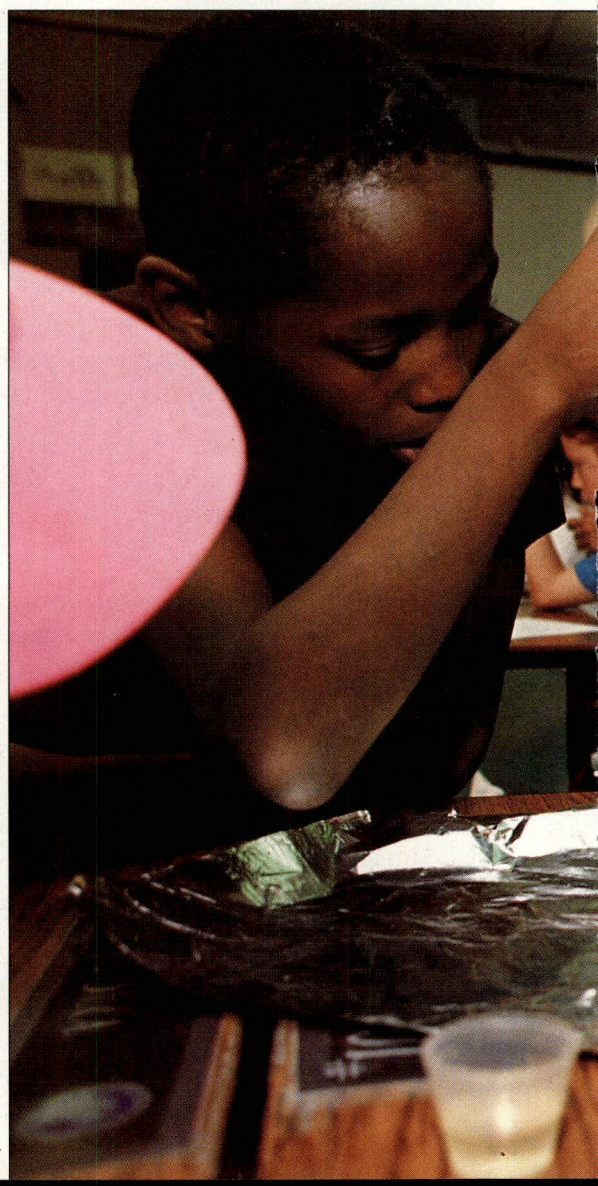
While others dither, schools in Mesa, Ariz., have been teaching science well for 16 years

One sunny day last May, at Hendrix Junior High School in Mesa, Ariz., about 20 ninth graders were engaged in one of the perennial adolescent rites of spring—making babies. Each pair of parents-to-be in the raucous classroom flipped a coin to see if they were having a boy or girl. They tested themselves to determine some of their subtler traits—ability to discriminate certain bitter tastes, colorblindness—as well as more obvious features. Each time they figured out a parental trait they tossed into the air a strip of paper with the words "recessive" and "dominant" written on opposite sides. The side landing up determined which trait Baby would express.

"It might take days for the students to discover for themselves such genetic principles as independent assortment and the meaning of recessive and dominant," says Hendrix biology teacher Greg Sherman. "It would take me 20 minutes to explain it—but they wouldn't remember a thing after the test." That realization makes Mesa a paradigm of hands-on science with both a purpose and a brain. It also makes it just about unique in the country.

Although more than 300 recent reports have lamented the scandalous state of science education, and "science illiteracy" has become a cliché, few districts have implemented the agreed-upon remedy. Rather than having students grow radishes in the dark or figure out how to make Christmas lights blink, the vast majority of school systems still make them memorize the biochemical formulas for photosynthesis, read chemistry texts crammed with more new vocabulary than a foreign-language course and sit through lectures on impedance. But while other districts study—endlessly—how to reform, Mesa has been doing it for 16 years. Now it has what science educators and theorists call the best districtwide science program in the nation. Its curriculum is based on the belief that people remember only 10 percent of what they hear but 80 percent of what they experience directly. It measures academic success not by the score on a test in May but by how well, for instance, a father-to-be recalls his biology class of 10 years earlier. And its goal is not a research physicist on every block but a scientifically literate citizenry that will not be flummoxed by advances in science and technology.

On paper, there is no reason this city outside Phoenix (population: about 290,000, including 61,000 schoolchildren) should stand out. The estimated median household income for 1990 is $35,800. Only 19 percent of the adults graduated



BY SHARON BEGLEY

from college. Average class size in K-6 ranges in the high 20s. Most school kids come from single-parent homes. Only 20 percent will enter college.

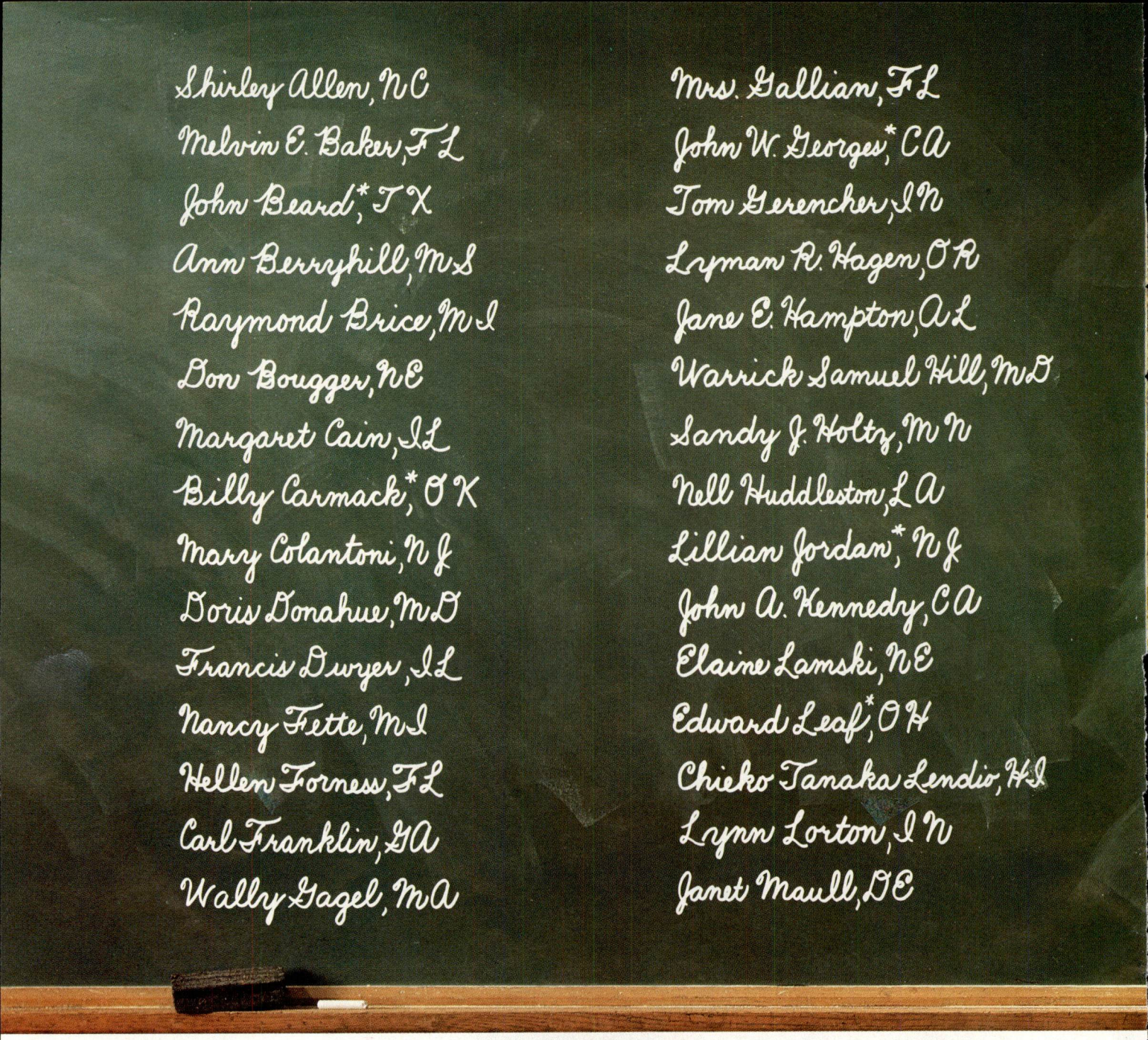
Such discouraging demography didn't faze Susan Sprague. In the early 1970s, having served in the Peace Corps in Africa and taught for six years in Mesa, she agreed to run the district's science program. One day, at the dentist's, she saw a tiny article in a magazine showing boxes on shelves, described as the "resource center" in Fairfax County, Va. "I decided that's what Mesa needed," she recalls. Since then, Sprague and six resource specialists have developed more than 115 science kits for, and banned textbooks from, elementary schools. They have also reinvigorated junior- and senior-high science.

Kit-based learning costs Mesa all of $5.60 per student per year. The curriculum calls for four kit units per year; most teachers do six. The kits are simply materials given to each student so that he or she can, after a short presentation by the teacher, do an "experiment" for the 55 minutes set aside for science. As the school year drew to a close last May, first graders at Frost Elementary eagerly examined bean seeds to learn where the plant-to-be's food is stored, and determined properties of seeds. Then they sorted seeds from such nonseeds as buttons and red-hot candies. This unit fosters observational skills and categorizing. Second graders furiously crayoned paper leaves to learn how plants adapt to arid climes. "I know what I want to be," says Kate, intently waxing: "a scientist."

"Clay Boats," for third graders, teaches problem solving, generalization and creativity. After a brief demonstration by the teacher of objects that float and objects that sink, students list properties of buoyant objects, such as size, shape and composition. Then, each gets a water-filled plastic container like those at salad bars, plus a lump of clay to shape into something that floats. At Hermosa Vista Elementary, there are squeals of delight at success, groans when the clay sinks. Says Andy, "Science is my favorite subject because you don't have to work—it's just fun." Third graders using the "Finding Out" kit learn the scientific method: how to find an answer that doesn't exist in books, such as, "What's

PHOTOS BY TOM IVES

Sixth graders at Hermosa Vista School try to identify 'mystery gas' (above), fifth graders at Frost explore physics of oils



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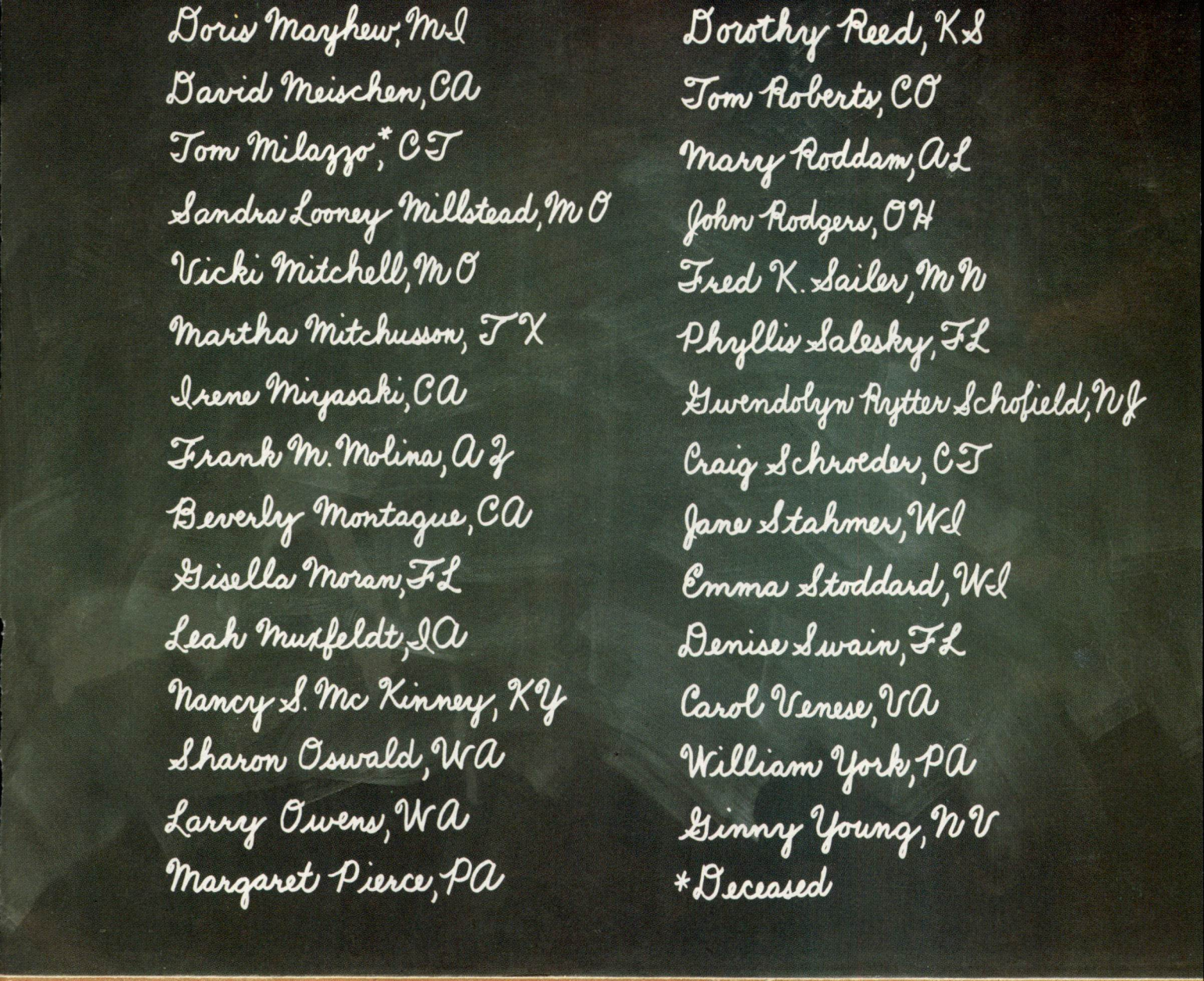

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TOM IVES

At Irving Elementary, sixth graders bake hot dogs al fresco in solar cookers

Don't Know Much Biology

- Only 7% of 17-year-olds have the advanced science skills they need to perform well in college-level courses.
- Most 11th graders have used a microscope, but just 46% have used a barometer and 33% have operated an electricity meter.
- Although 90% of high-school students take biology by graduation, only 20% take even one year of physics.
- 62% of 11th graders did find studying science enjoyable.
- Only 59% of 11th graders have taken a science course that requires them to write up the results of experiments; a mere 20% have ever gone on science field trips.

SOURCE: THE NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

the class's favorite ice cream?"

Kit-based programs aren't new. They were pioneered in the post-sputnik 1960s. Why, then, does Mesa's program work while others fail? Its kits assume no experience with science on the part of the teacher. Clerks fill the boxes with the necessary ingredients and keep them in good repair so teachers don't have to deal with missing or damaged parts. Mesa also gives its teachers continual training in kit-based teaching, says Sprague, "not the four hours typical of other programs. We also incorporate teacher suggestions, so they feel involved." Teachers new to Mesa provide the clearest insight into why more districts don't adopt kit-based learning. According to Sara Meyer, who had taught in Wisconsin, "The kit-based program requires the teacher to be more facilitator than director, and makes for a more chaotic classroom. Some teachers are afraid of that. Many feel safer with a textbook, which has all the answers."

The junior-high program uses texts rather than kits, a change that can be wrenching for students more accustomed to doing than reading science. Still, junior-high science tries not to mortgage its soul to the texts. Lessons go light on facts—which, in science, are constantly changing anyway—and emphasize that science is a set of grand principles and a way of thinking.

Take a seventh-grade class at Hendrix Junior High. Seated in front of computer terminals, students are trying to capture "zoyons," mysterious creatures that keep popping up in the software town. The students read reports of zoyon sightings describing what the beast looked like, what it was eating, where it was. The goal is to glean enough clues to the animal's appearance, gustatory and other habits to set a trap with the proper mesh size, in the right place and baited with appealing victuals. Once a student thinks she knows enough to set a trap, she types in the kind, bait and placement. The zoyon patrol fosters deductive reasoning, classification and "thinking for themselves," says resource specialist Roger Spratt. "If they know how to do that, the content will come of its own. We make kids want to learn science"—for 120 minutes a week in junior high—"by making it fun."

High-school students need two years of science to graduate, but most take more. It's not hard to see why. A physics teacher at Dobson High explains series and parallel circuits by asking students how to make Christmas lights blink. Dozens of students enlist in the cardboard-boat competition, using glue and cardboard to construct six-meter-long boats that they navigate in a 15-meter pool. The last one afloat wins. "It's all a giant scam to get them to take physics," laughs physics teacher Earl Barrett.

In an ideal world, students would sit, mesmerized, as they read about the mysteries of gravity, the dances of reacting molecules. Many science teachers still teach to that ideal student. At Mesa, they recognize reality. "The way I'd like to teach science—the cell, genetics, evolution—just isn't working," admits Richard van Loben Sels, cochairman of science at Red Mountain High School. His students' favorite science units cover alcohol, drugs and tobacco. Sponges, cellular transport and protozoa are about as popular as a dress code. So instructors try to convey the principles these traditional units embody through a more palatable vehicle—how cells handle alcohol, for instance, to teach about cellular transport. "These kids need to know something that touches their lives," says van Loben Sels. "But in units on tobacco and drugs, you can sneak in a lot of basic science." That sly technique has cracked the gender barrier: more girls than boys take college-prep chemistry and physics. Both courses resemble the traditional ones taught elsewhere, but with a flair and verve that set them apart from the soporific classes of other districts.

Unlike Mesa, many schools resist scaling back what's presented in classrooms, suspecting that less is, well, less. One reason more haven't emulated Mesa may be that reducing the amount of material hadn't been endorsed by the science mandarins until 1989, when the American Association for the Advancement of Science explicitly recommended teaching less. Slowly, more schools are coming around to that view. Reasons Mesa curriculum superintendent Douglas Barnard, "The explosion of knowledge is so great that it's impossible for anyone to acquire it all. There is a core bit of science, the great principles, that we should know, but beyond that I would rather give students problem-solving abilities and the skills to find information and use the scientific method."

Whatever the excuse other districts offer, there is no hiding the fact that science classes remain bastions of memorization, of emphasizing answers rather than process. Any curriculum writers or classroom teachers serious about reform might start by buying a plane ticket to Phoenix. Hop the airport shuttle to the Mesa resource center. Borrow or copy the student and teacher guides; take copious notes about how to make up the teaching kits. Stop talking about reforming science—do it. ■

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A (Vague) Sense of HISTORY

BETTMANN ARCHIVE

Our 17-year-olds have trouble with basic facts. Only 32.2% knew when the Civil War took place.

Ignorance of history affects our future as a democratic nation and as individuals

By Jonathan Alter and Lydia Denworth

Historians tend to tell the same joke when they're describing history education in America. It's the one about the teacher standing in the schoolroom door waving goodbye to students for the summer and calling after them, "By the way, we won World War II."

The problem with the joke, of course, is that it's not funny. The surveys on historical illiteracy are beginning to numb: nearly one third of American 17-year-olds cannot even identify which countries the United States fought against in that war. One third have no idea what *Brown v. Board of Education* accomplished. One third thought Columbus reached the New World after 1750. Two thirds cannot correctly place the Civil War between 1850 and 1900. Even when they get the answers right, some (many?) are just guessing.

Unlike math or science, ignorance of history cannot be directly connected to loss of international competitiveness. But it does affect our future as a democratic nation and as individuals. "People without a sense of history are amnesiacs," says Diane Ravitch, professor of history and education at Columbia University Teachers College. "They wake up and don't know who they are."

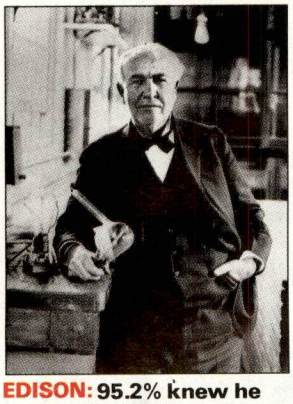
The good news is that there's growing agreement on what's wrong with the teaching of history and what needs to be done to fix it. The steps are tentative and yet to be felt in most classrooms. And the debate over "multiculturalism"—the latest buzzword in broadening history's scope—has politicized the subject in often distracting ways. But beneath the rhetoric lies some evidence that educators are beginning to paddle in the same direction, with California taking the lead.

In the spirit of consensus, here are a few paths for reform that sensible people should be able to agree on:

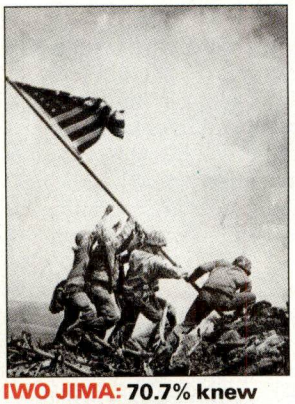
Recognize the Boredom Factor. History itself isn't boring; it's just taught that way. As in science, the natural curiosity of students is snuffed out at an early age. The reasons aren't hard to figure. "Kids see it as going through dull data dumps," says Francie Alexander, who oversees curriculum for California's Department of Education. The image of the teacher asking his students to read page 454, then answer the questions on page 506, is enough to induce a yawn without even being in the classroom. The natural human fascination with good stories, which the entertainment industry understands so well, is missing from history, where that fascination originated. Admitting this as a problem—avoiding the usual defensiveness of the educational establishment—is the first step toward doing something about it.

Rethink 'Social Studies.' Many educators now see the transformation of history into social studies as the root of what's wrong. Social studies began in the 1930s as an effort to make the

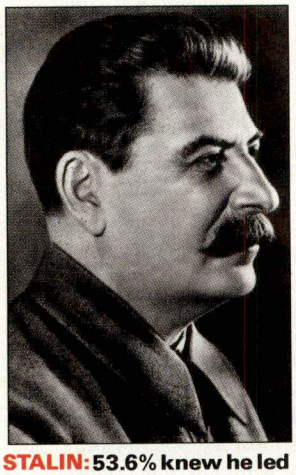
FDR: 52% knew when he was president



EDISON: 95.2% knew he invented the light bulb



IWO JIMA: 70.7% knew when WWII ended



STALIN: 53.6% knew he led the U.S.S.R. during WWII

subject more "relevant." Paul Hanna, its original champion, wrote that children were failing to "face the realities of this world in which we live—they escape, they retreat to a romantic realm of yesterday." Social studies flowered fully in the 1960s and 1970s, when such romantic stories and legends (for instance, King Arthur and the Round Table) were frequently replaced in the lower grades by studying family and neighborhood life. In higher grades, social studies came to mean an interdisciplinary approach that threw history into an academic stew with psychology, anthropology, ethnic studies, civics and other subjects.

The results have been discouraging. The "romantic realm" Hanna denigrated turns out to have a narrative thrust and natural appeal far more memorable than soupy sociology, which is what social studies—however noble in theory—so often becomes. "Kids like history because it's the story of real people," says Elaine Reed of the Ohio-based Bradley Commission, which helps states reform their history programs. "There's some blood and gore in there, but also some love and caring."

Romance and adventure have been replaced by the academic stew of social studies

Consider Arleen Chatman, a teacher at the 75th St. School in Los Angeles, who straps on an apron and takes her students on an imaginary covered-wagon ride across the country, complete with vivid first-person accounts of the arduous trip. The whole school (K-6) creates a time line by stringing a rope across the yard and attaching cards representing historical events. Chatman cites the fourth grade, which is usually the year that children study their state, as a good example of the differences between history and social studies. While the social-studies curriculum would focus that year on the (often dry) roles of various state offices, Chatman's fourth graders did a research project on William Mulholland, the "dream builder" who brought water to Los Angeles. A woman who had known Mulholland came to tea with the class. "This 90-year-old woman became so real to the kids," says Chatman. "She told them wonderful stories." Stories—the stuff of history—are what people of all ages crave. Properly told, they can bring any class alive.

As a practical matter in elementary school, there's just not enough time in the day to make history separate from civics, community issues and similar topics. But the aim should be for history and geography to play a larger role in that mix. And from junior high on, it makes more sense to define the subject as history instead of social studies. Otherwise schools are providing what Gilbert T. Sewall of the New York-based American Textbook Council calls "escape hatches for uninterested students to satisfy their diploma requirements." As of 1987, 15 percent of high-school graduates took no American history in high school, and 50 percent studied no world history. When psychology or anthropology or even driver's education classes count as social studies it's no wonder so many students don't know anything about the Civil War.

Expand History's Place. One way to bridge the history gap is simply to teach more of it. Three years ago, California adopted a new History-Social Science Framework which strongly recommends that every student be required to take at least three years of American history and three years of world history between grades five and 12. (Most states currently mandate only one year of American history.) In 1988, the Bradley Commission echoed California's plans, arguing that, properly taught, history would help develop certain "habits of the mind"—critical thinking, acceptance of uncertainty, appreciation of causation—that have been sadly lacking from many classrooms.

One of the obstacles to greater concentration on history is the National Council on Social Studies (NCSS), which often downplays history in favor of what NCSS executive director Fran Haley calls "a more integrated approach." Over the years, social studies has fallen prey to trends—ethnic, demographic, environmental, women's and "peace" studies—that are unobjectionable, even commendable in themselves. But these subject areas too often crowd out basic historical literacy. Instead of being included in the broad sweep of history, they tend to replace it. Only this year have traditionalists organized to balance the NCSS with their own professional group, the National Council for History Education.

Put 'Multiculturalism' in Perspective. Even after arriving at a consensus on the importance of history, the debate still rages over *whose* history should be taught. In some ways, this is a diversion, like arguing calculus versus trigonometry when the students don't know how to add and subtract. But it is a passionate debate within the profession, and with minorities soon to make up one third of the public-school population, it will only grow in importance.

On one side are those who attack the traditional emphasis on American history and Western civilization as "Eurocentric." They argue that such curricula—which stress the centrality of the transfer of European values and traditions to America—are not meaningful for many minority students; in fact, they suggest that a traditional approach can be downright harmful because it doesn't present positive enough views of nonwhite groups. This critique is fueled by a sense that curriculum is often too positive, downplaying, for instance, the horrors of slavery and the destruction of Indians. American history, these critics say, is often presented as a "parade of presidents." World history seems to be a story of Europe on top. "That's hard for kids attached to those nations that were subjugated," says Irene Segade, who teaches at San Diego High School.

The most extreme version of this view was

TOP TO BOTTOM: CULVER; UPI-BETTMANN; CULVER; BETTMANN ARCHIVE

contained in "A Curriculum of Inclusion," a highly controversial report issued last year by a New York task force assigned by Education Commissioner Thomas Sobol to review social studies. Sobol admits that he created the task force, which he says was preliminary and not responsible for curricular reform, essentially as a political gesture to minority groups upset by his appointment. (He is white.) He underestimated the potential for backlash. The report is a textbook case of what happens when education is treated as akin to a pork-barrel project, with bones thrown to constituency groups. Although the state's history curriculum was overhauled to make it more multicultural as recently as 1987, representatives of different ethnic groups each argued that their histories should be more heavily weighted.

The problem with the argument is that the contributions of different cultures have simply not been comparable. Like it or not, Europe has had the largest influence on this nation's values and institutions. "No one would say that Afro-Asian culture studies is not important. These parts of the world are relevant to us today," says Steve Houser, a history teacher at Horace Greeley High School in Chappaqua, N.Y. "But we have a problem with being [attacked as] 'Eurocentric.' We teach the good and the bad of European history—imperialism, world wars, the Holocaust. It's ridiculous to say that Europe hasn't had an inordinate influence over the modern world."

Badly written history texts are too often a crutch for teachers and a bore for their students

The "Europhobic" approach, says Diane Ravitch, "endorses the principle of collective guilt. It encourages a sense of rage and victimization in those who are the presumed descendants of victims and a sense of resentment in those who are the presumed descendants of oppressors. Instead of learning from history about the dangers of prejudging individuals by their color or religion, students learn that it is appropriate to think of others primarily in terms of their group identity." California Education Superintendent Bill Honig argues simply that the essential themes of history often transcend lines of race and national origin. He points to the Chinese students who raised the Statue of Liberty last year in Tiananmen Square. "They're quoting Montesquieu, Jefferson and Locke," he says. "In fact, they can quote [them] better than our people."

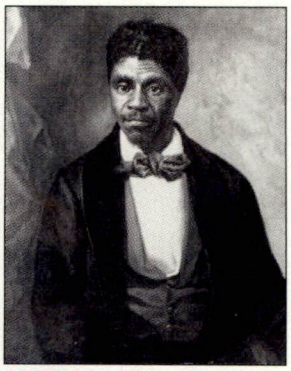
As bitter as this debate has become, there's a middle course between, say, portraying slavery as merely a minor episode and giving Benjamin Banneker equal weight to Benjamin Franklin. It is possible—even essential—to "step into the [minority group's] shoes, see it from their perspective" without letting that dominate a curriculum, as Sobol says. Primary source materials such as first-person accounts by slaves or Asian workers on the transcontinental railroad can achieve that end. So can classroom arguments about whether the West was "won" or "stolen." The creator of that exercise, Joseph Palumbo, a teacher at Stephens Junior High in Long Beach, Calif., also asks his students to view Columbus's landing in America from the Indians' point of view. This is multiculturalism with a human face, and it's easily achievable without harsh attacks and hand wringing.

Demand Good Textbooks. History textbooks are too often a crutch for teachers and a club over their students. They are almost always too long and boring. A 1987 study by Columbia University's American History Textbooks project found these texts "generally to be mere catalogues of factual material about the past, not sagas peopled with heroic and remarkable individuals engaged in exciting and momentous events." The insightful texts favored in Gilbert Sewall's report, such as "A History of The United States" *(Ginn and Co., Lexington, Mass.)*, by Daniel Boorstin and Brooks Mather Kelly, all featured heavy participation by the distinguished authors.

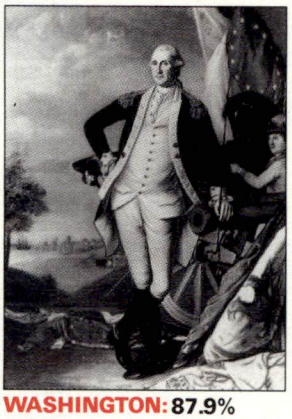
Amazingly, this is rare in elementary and secondary history textbooks. Most are written—badly—by unknown and often professionally unqualified firms subcontracted by publishing houses. (The "authors" whose names appear on the cover often merely review and amend the turgid text.) Beyond placing less faith in textbooks in general, teachers should insist on texts that have strong narrative voices instead of those that make kaleidoscopic attempts at comprehensiveness. The whole historical establishment should worry less about battling over exactly which details are mentioned or missing from textbooks and more about making these books convey the wonder of history.

Bring History Alive. This, after all, is the challenge. How to make Jefferson or Roosevelt or Gandhi inhabit the minds of students? Good teachers know it's possible. Use primary sources. Use literature. Tell a story. Relate historical events to current events. Insist that they write essays instead of merely answering multiple-choice questions. Make kids take sides in debate. Make them establish connections between different historical ideas. Make them *think.*

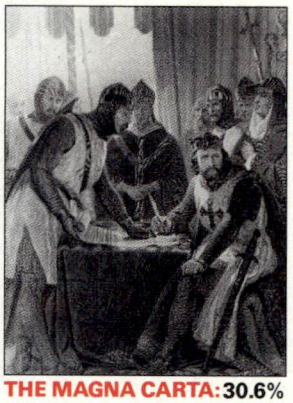
Joe Palumbo's eighth-grade students in Long Beach know more than when the Civil War took place. Last spring they spent class time using that war—and others they had studied—to debate the morality and complexity of conflict. Was it right for Northern troops to burn Southern crops and leave the population hungry? Was it right for Confederates to hold Northerners in squalid POW camps? When do the ends justify the means? By the time the bell rang, the students were not yet finished arguing the issues with one another. The conversations continued out in the hall, almost making them late for their next class. Palumbo would not be one of those waving goodbye to his students with the words, "By the way, the North won." ■



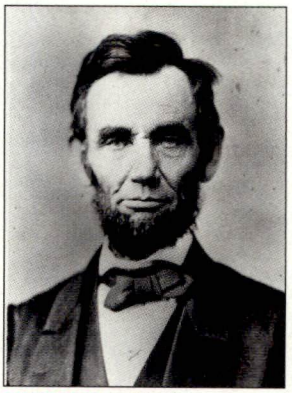
DRED SCOTT: 39.5% knew of his legal importance



WASHINGTON: 87.9% knew the first president



THE MAGNA CARTA: 30.6% knew of the great charter



LINCOLN: 24.7% knew when he was president

PHOTOS BY BETTMANN ARCHIVE

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Speaking in TONGUES

Dios mío! Even Americans will need to know a foreign language to get along in the 21st century.

It's time for a geometry quiz, but the third graders in Francis Renson's classroom are growing restless. Two boys sitting together are glaring at each other.

"David, que se passe-t-il?" Renson inquires.

David Buchanan, 9, suspects a classmate of criminal pencil theft. *"Jonathan a volé mon crayon,"* he replies.

"Ce n'est pas vrai!" protests Jonathan Brown, 10. *"Regarde—le crayon est sur le banc."*

He's right—David's pencil is sitting right on his desk. *"Oh, c'est vrai,"* David says sheepishly. *"Je ne l'ai pas vu."*

The teacher sighs, turns and begins writing math questions on the blackboard. The brief verbal volley in French is unremarkable, except for one thing—it hasn't taken place at a school in Paris or Brussels or Quebec, but at Sunbury Elementary in remote Gates County, N.C.

Sacrebleu! American children are learning foreign languages! We've never been much good at it, and our sloth has only gotten worse as the rest of the world has made English the globe's de facto second language. Today, only about 5 percent of children in U.S. elementary schools study a foreign language, and *none* of the 50 states requires a language course for all high-school students (though the District of Columbia does).

That dismal record may soon improve, not from an injection of scholarly pride but from the need to compete in the world. "Languages will be a survival skill for the 21st century," says Myriam Met, foreign-language coordinator for the Montgomery County, Md., public schools. "It's unfortunate that people would think the only reason for learning a language is to sell more widgets abroad," she says. "But just because they're doing it for that reason doesn't mean they won't benefit in other ways." One clear sign of change has come in the nation's public universities, some of which have reinstated foreign-language entrance requirements. By 1985, modern foreign-language study had almost doubled, from a rate of 18 percent in 1976 to 32 percent of U.S. high-school students—and by most guesses that proportion is even higher today.

The most radical changes can be found in 93 schools around the nation that have adopted "immersion" programs. In "total" immersion, all classes are taught in the second language from kindergarten through second grade. Then English is phased in gradually; by sixth grade, half the classes are taught in English and half in the second language. "Partial" immersion begins at the 50-50 point and stays there; in these programs, reading and language arts are always taught in English.

Francis Renson's third graders, in their second year of partial immersion, were beneficiaries of a 1985 state education-reform package. One provision calls for all districts to offer foreign-language instruction in grades K through 12. Students may quit after fifth grade; paradoxically, North Carolina has no foreign-language requirement for high-school graduation.

In Gates County, school officials and language teachers sold the immersion program to parents at a series of town meetings. More than half enrolled their kids, but some were worried that immersion might hold the children back academically and keep them from scoring well on standardized tests. In fact, children in Renson's class have scored above average on national achievement tests; only one parent has pulled her child from the program.

In other North Carolina counties, language teachers don't expect children to speak or write the second language to any great extent for several years. "The best way is to let the kids hear it [for a time] and not worry much about their producing it," says Maxine McCall, coordinator of foreign-language programs in Burke County, near the state's Tennessee border. "In three or four years, it will come out."

Many U.S. school districts have chosen to stop short of immersion and stress "proficiency" instead. This reflects the new emphasis on communication—on what the student can *do* in the language—rather than on repetitious verb drills and grammatical analysis. "If you went into a proficiency classroom, you would see students practicing languages with the teacher and with each other," explains Maryland's Met. "They might be role-playing. You might see groups of students interviewing each other and reporting back to the class." At first, "It's usually 'Frenglish'," says Ginette Suarez, who has been teaching junior-high French in Washington,

BY JEAN SELIGMANN

ILLUSTRATION BY LISA BLACKSHEAR

D.C., for 20 years, "but I want them to be able to express themselves without worrying about tenses and all that. I tell them, nobody in this room speaks perfect French, not even me."

The proficiency movement has its roots in language programs designed for servicemen and diplomats by the U.S. government. These programs rely on a scale of progress, moving a student from novice to superior over time. According to Bette Hirsch, former president of the Modern Language Association, "Novices are word people. They have some vocabulary and some phrases, all memorized. The intermediates are sentence people. They can create with the language. They do best in the present time. The advanced-level students are paragraph people. They can describe and narrate in the present, past and future times. Superiors . . . do wonderful things with language. They can support an opinion and hypothesize and enter the world of the abstract."

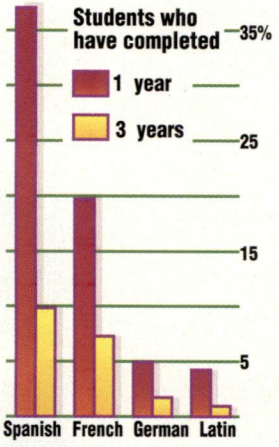
Ed Scebold, executive director of the American Council on the Teaching of Foreign Languages, doesn't think proficiency is just a temporary fad. "Publishers are redesigning their textbooks," he says. "It's had a major impact . . . We're changing things right down to the foundation." Met maintains that the proficiency curriculum is not really a radical departure from the past. It includes all the elements of traditional curricula, she says; they are simply rearranged.

Concepts like proficiency and immersion, which make language learning fun and teach practical skills, have arrived on the scene not a moment too soon. "Cultural isolation is a luxury the United States can no longer afford," says Illinois Sen. Paul Simon, a longtime foreign-language advocate. With U.S. connections to the rest of the world reaching farther and deeper every day, mastery of just one language could soon become a serious handicap for any educated person. As we move toward the millennium, knowing how to speak in tongues is a skill we surely won't want to leave home without.

With LYDIA DENWORTH *in New York,* MICHAEL MASON *in North Carolina and* DANIEL GLICK *in Washington*

Parlez-Vous . . . ?

Usually, *non:* no state requires all its high-school students to take a foreign-language course so few do. Most figure the whole world speaks English.



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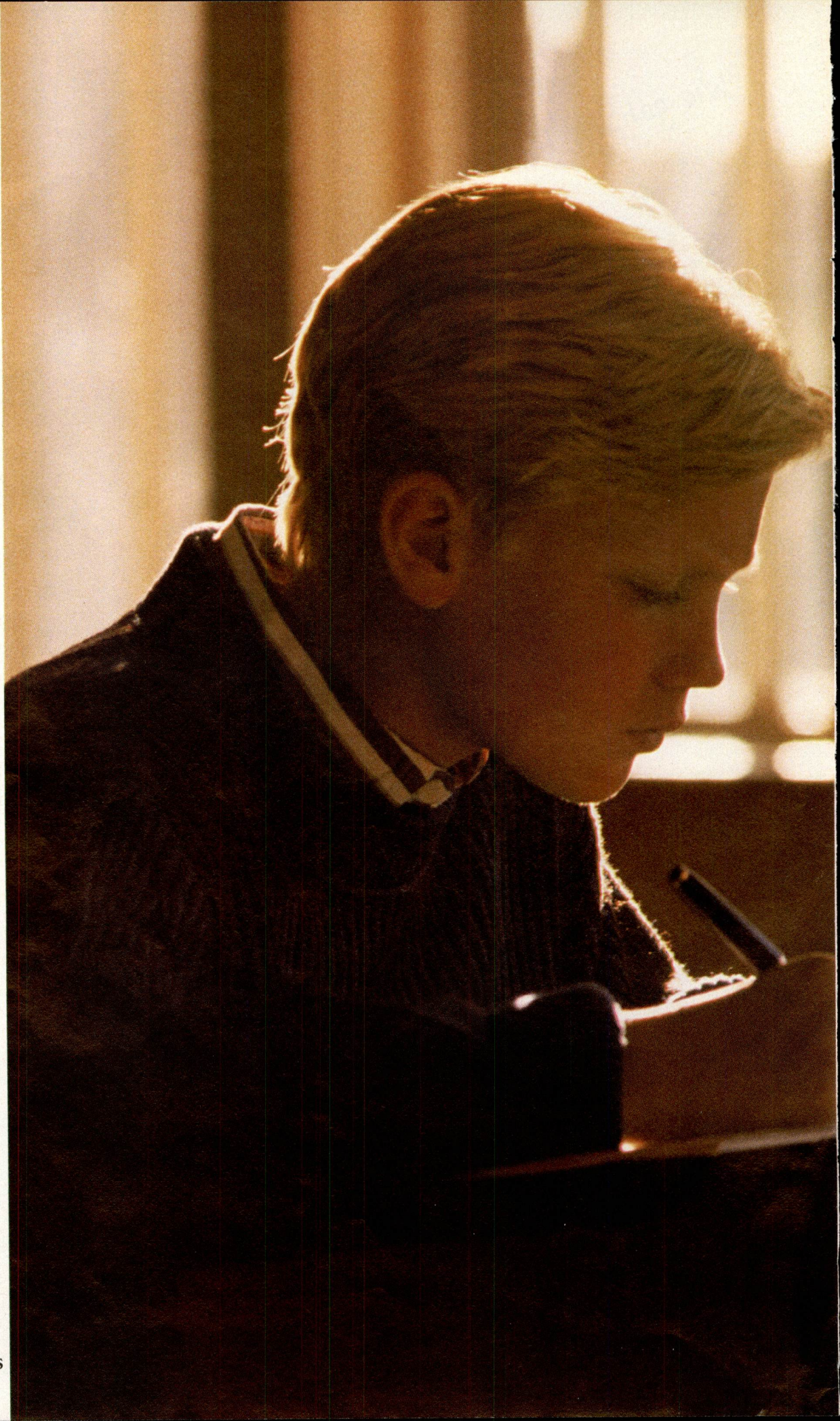
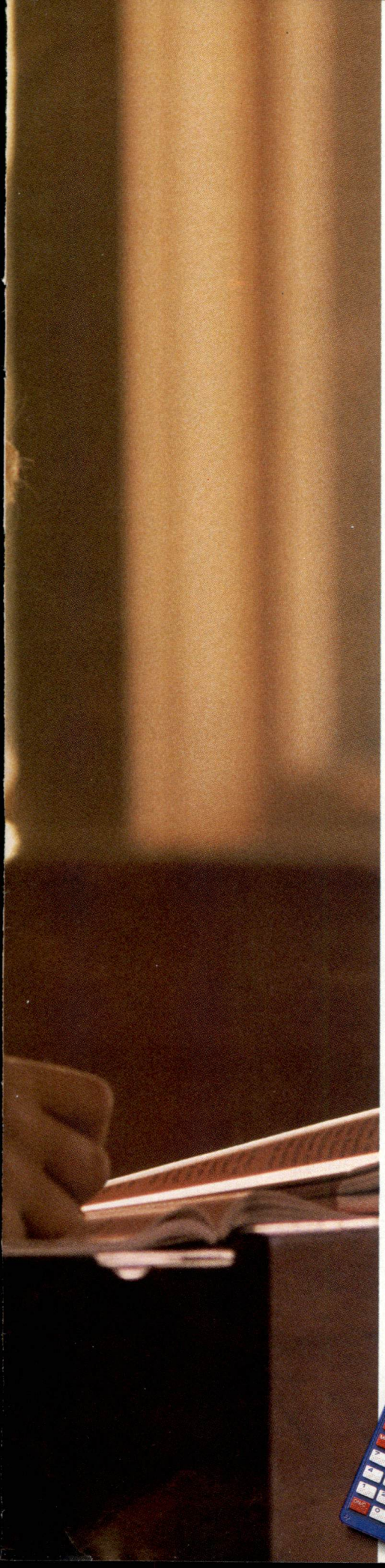


TEXAS INSTRUMENTS



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WHY JANE CAN'T DRAW

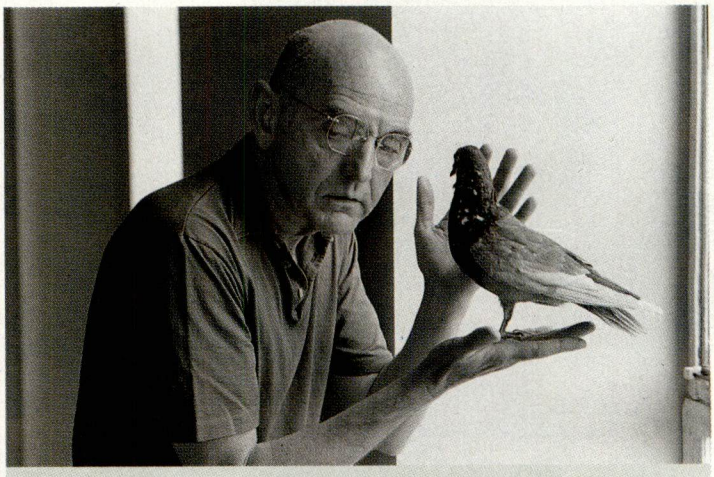
(or Sing, or Dance . . .)

Basic arts education does not exist in America. It's considered a nicety, not a necessity.

Beethoven told one of his pupils that his own musical education had been sorely lacking. "But," he said, "I had talent." Unlike Beethoven, most of us cannot triumph over a poor musical education—and that's exactly what most American schoolchildren get. So poor, in fact, that in 1984 an informal Music Alliance poll of sixth and 10th graders revealed that though Beethoven was the composer kids recognized above all others, only 5 percent knew who he was.

"Basic arts education does not exist in the United States today." That is the depressing conclusion of the National Endowment for the Arts' (NEA) massive 1988 report, "Toward Civilization." The biggest problem is one of attitude: the arts are considered a nicety rather than a necessity. In schools, they're typically window dressing: marching bands and colorful drawings. The pity of this is that children don't arrive at school thinking they can't sing or dance or draw—they're taught those lessons. Too many elementary schools level rather than promote creativity, as in, "That is not how you draw a horse." By high school, where less than one fifth of students enroll in arts classes, the emphasis is on performance, geared to those considered "talented"—effectively shutting out or turning off the majority. Yet at perhaps no other time has arts education been more important: apart from its obvious benefits, it produces critical thinkers. And in all the recent furor over what constitutes "art," critical thinking has been in short supply.

Still, there are some encouraging signs. A decade ago only two states had an arts requirement for high-school students. Now, though the arts requirement remains paltry, 13 demand it. Teachers of the arts also have an institutional beacon, the National Arts Education Research Center at New York University. Created in 1987 by the U.S. Department of Education and the NEA, it is best known for the summer workshops it runs for innovative teachers from



The most interesting people were probably nerds in school. We have to encourage the differentness that children have, we have to permit and nurture uniqueness.

–DUANE MICHALS

COURTESY SIDNEY JANIS GALLERY, N.Y.

BY KATRINE AMES

around the country. "The first group of teachers still speaks to each other every week," says associate director Ellyn Berk. "The little blips we've seen are so exciting, but how do you clone them? How do you make systematic change?"

The Getty Center for Education in the Arts in Los Angeles is doing its part for systematic change. Since 1982, it has poured millions into discipline-based art-education programs in which students not only make art but examine masterpieces through the "disciplines" of criticism, art history and estheticism. Though critics complain that DBAE students turn out works that look like poor imitations of the art they study, variations on the method are catching on across the country, and educators are enthusiastic about students' responsiveness. "What this does is mitigate talent in one area. It allows you to be successful in a lot of other ways," says Phillip Dunn, a Getty program officer. After a Japanese businessman paid $82.5 million for van Gogh's "Portrait of Dr. Gachet" last May, Deborah Herbert's DBAE pupils at Northport Elementary School in Northport, Fla., were upset. Third graders wanted to know about the value of art, whether they would ever see "Dr. Gachet" (one of their favorite works) again. "They were asking all those questions the art critics were asking," Herbert says.

"When students ask questions in art," says Ray Campeau, a teacher at Bozeman High School in Bozeman, Mont., "they understand that there can be more than one answer." Campeau encourages his students to make judgments; by the end of the year, they are markedly more open-minded. "We try to understand why we have differences," says Campeau. "I don't want to change the students' decisions, but to get them to understand why they make them."

Louise Gray's seventh-grade music students at Columbus Traditional Academy, a middle school in Pittsburgh, discuss and listen to only 20th-century music, from Bartok to the B-52's. They make their own music, too, constructing instruments of their own design and including found sounds—zippers zipping, pencils tapping—in their compositions. By the year-end, the music journals they keep are remarkably sophisticated. The diaries, Gray says, force her students to think clearly and critically. "You're always evaluating things in life. I want them to be able to justify their opinions."

At 26 schools in and around New York City, dance is an energetic, nonrarefied part of the day. Led by Jacques d'Amboise, a former principal dancer of the New York City Ballet, the National Dance Institute holds open auditions and chooses students who show "enthusiasm and determination." At an NDI class in Brooklyn's PS 29, the favored footwear is sneakers. Some kids have clearly not been touched by Terpsichore—and that's the point. Talent is great, but it's lagniappe. Teacher Catherine Oppenheimer is more interested in energy and characterization—at which most children excel—than in the steps. "Thank you, dancers," she says elegantly, at the end of class. "Thank you, teacher," they reply. Every one of them means it.

How can we improve arts education, not just for the "gifted" few but for those who might otherwise miss the challenge and the wonder, the power and the delight? Below, several American artists—keenly aware that the arts can last and sustain a lifetime—offer their ideas and dreams for our schools. The arts employ all our senses; great artists can create even when they no longer command all of theirs. After crippling arthritis made it difficult for him to hold a brush, Matisse made exquisite collages. Beethoven composed much of his greatest work after he had become almost totally deaf, and music resonated only in his memory. On his deathbed, he said,

Many schools level rather than promote creativity, as in, 'That's not how you draw a horse'

I would take the arts, science and sports, or play, and make all education involve all of them. It would be like what kindergarten does, only more sophisticated, right through life.

–JACQUES D'AMBOISE

I'd like to require every high-school student, every year, to take some class that deals with American art, to get an understanding of the history of America through its arts.

–WYNTON MARSALIS

PHOTO OF JACQUES d'AMBOISE BY CAROLYN GEORGE d'AMBOISE; PHOTO OF WYNTON MARSALIS BY LYNN GOLDSMITH—LGI

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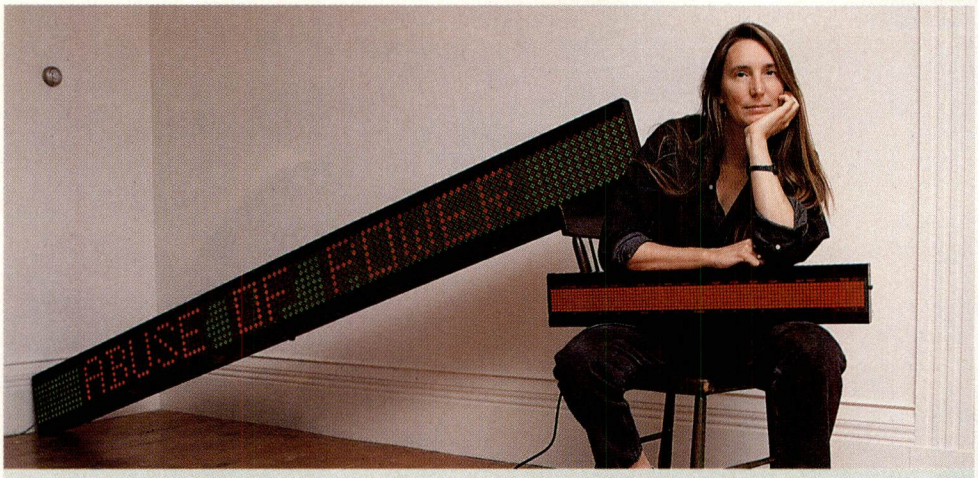

One thing that art-making can do is to prepare children for living. They can look at what's around them and see what scares them the most and what's most wonderful. After portraying the worst, maybe they can cure it, make their own utopias.

—JENNY HOLZER

Jazz refutes racism. It's not any color, it's American. It absorbs the influences of every culture.

"I shall hear . . ." With luck—and the training to help us to listen well—so may we all.

Wynton Marsalis, 28, trumpeter:

I'd like to require every high-school student, every year, to take some class that deals with American art, to get an understanding of the history of America through its arts. The biggest problem in American culture is racism. We don't teach American art because the Negro is central to much of it. The problem is not to embrace Africa but to celebrate the achievement of the mulatto, to examine how American art illuminates the mythology of America. Jazz refutes racism: it's not any color, it's *American*. It absorbs the influences of every culture. I'd have every student deal with the blues and with regional art—in a sophisticated way. Can you deal with the sophistication in all cultures that existed before you? Don't avoid it. We have a lot of work to do. We've messed up a lot. Talk is cheap. Get the books out. It's your responsibility. Pick up your shovel and get shoveling. Attack! Attack! As long as I can breathe, I'll have this sword in my hand. We've got to engage ourselves, and there aren't enough warriors.

Pianist-educator Ellis Marsalis (Wynton's father), 55:

None of us who teaches and purports to be artists does enough for children. So many say, "These kids are a *drag.*" We forget why we became teachers. We need to bring the piano back into the school and get kids playing. This is a visually oriented society, and I'd like to see elementary schools project slides of musicians along with their music. The interdisciplinary concept is very, very valuable. Kids have to learn how to see and how to hear. If you can introduce good habits early, you stand a good chance of retroactive reflection.

Photographer Duane Michals, 58:

We have to encourage the differentness that children have, we have to permit and nurture uniqueness. In high school there's so much peer pressure, pressure to conform. Kids have no private history; theirs is still family history. In a workshop, I try to get students to find what's different about them. They may not even know they have talent, or they may be embarrassed by it or afraid to show it. They have to be told it's OK to fail. Students always think that famous people were already famous at 12. But when I photographed Willem de Kooning, he said, "I didn't become de Kooning until I was 50!" Early bloomers usually wither; the most interesting people were probably nerds in high school. One must look at the long view. I tell kids that what makes them different is a treasure.

Yo-Yo Ma, 34, cellist:

I'd like to see a program where music is not separate from history, from literature, from what generally went on in our society. Let's look at Stalin and Shostakovich. What did freedom mean to a composer then? One day, Shostakovich's neighbors disappeared. His music is full of descriptions of life around him: the pieces have specific meaning. Music is a form of storytelling, and I don't know anyone who doesn't like stories. We should be making those connections. Music can help in linguistics and math. If you're a composer, you're always thinking numbers, making up patterns. There's a linkage there. Kids talk about God, about what happens when you die. A piece of music may be a perfect way to deal with death. There are so many ways of interweaving things. Music is a part of our lives—of our movies, television, supermarkets. What I'm advocating is to become more imaginative and sensitive to the world around us.

Artist Jenny Holzer, 40:

It's clear that children already are thinking about big topics. It's not appropriate for them only to draw suns with lines radiating from them and flowers as big as houses. They're thinking about the bomb, the homeless, people with AIDS; and it's right to deal with these issues through making art. The problems are new to children, the experience is especially raw. One thing that art-making can do is to prepare children for living. They can look at what's around them and see what scares them the most and what's most wonderful. After portraying the worst, maybe they can cure it, make their own utopias. Art gives you absolute freedom to tell the truth and to improve your reality. It's a good foundation for activism. When you make art and get it right—and this may happen only 2 percent of the time—you are in a joyous, altered state. It's worth it for those milliseconds. Being critical, analytic, alert and rapturous should be taught at a very early age. Look hard at what's there. Expose it and change it.

LOUIE PSIHOYOS—MATRIX

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Jessye Norman, 45, soprano:
I'd do what I do with my nephews: I say, you've sung your song—New Kids on the Block or whatever—now you listen to mine. It's a deal. I'd like to have a kindergarten class where we're concerned with all the performing arts: we'd dance, sing, have a little rhythm section of things we'd make ourselves. Children should learn as early as possible that music is fun and free. How do you give little children a sense of their own worth? If you can give them a sense of security early on, it will stay with them forever. This class would be a place for them to do whatever they can. The ones who can't carry a tune can hit something in the rhythm section. If they like to read, they can recite. They find something they can manage and surprise themselves. It gives a certain sense of discipline. It gives them a sense of themselves, and it gives their peers a sense of them.

Choreographer Jacques d'Amboise, 56:
I would take the arts, science and sports, or play, and make all education involve all of them. It would be similar to what kindergarten does, only more sophisticated, right through life. All of the disciplines would be interrelated. You dance to a poem: poetry is meter, meter is time, time is science. How do we explain time? Kids learn by copying. And kids have to have role models. I'd use artists and scientists as teachers, or have them come in constantly. I'd bring in athletes and scientists and artists who lived in the neighborhood. I'd get senior citizens involved—teaching chess, storytelling. And I'd keep schools open all day long.

Itzhak Perlman, violinist, 45:
I would use as many video examples as possible, to bring music to a realistic level. If you teach the music of Bach, Beethoven, Mozart, you say, "Let me tell you about this guy Mozart. He had no money to pay his rent." Make them human, not idols; not objects, but people with feelings and problems. Most of them weren't appreciated. Read letters of these guys and their music takes on a whole new meaning. "When Mozart was 12 he wrote this piece. And let me read you this letter he wrote to his sister, what was going on at that time." There's an enormous number of anecdotes—use them. The younger the child, the more impression it makes. And you need some sort of support at home. You listen to music, you talk about it at home. It's contagious.

Michael Morgan, 32, conductor:
When I visit schools, I talk about music the kids would be likely to listen to, which I also listen to. I show them the common threads between that and classical music—they're more the same than they are different. I try to get kids to be more analytical in their supposed dislike of other kinds of music. When I ask for reactions, I often get the party line: "It's boring. I don't like it." But when I ask for reasons—why? what's wrong?—they start to hear more things they like, start to listen more carefully. Confrontational discussion gets everyone more interested. There should be arguments about music. My dream class would cover a mixture of old and new elements, with lots of different sorts of music and art and drama in historical context. I'd make a grid that links various events and works to something in our own time. It's important for kids to see how something relates to them and how it has been handed down to them.

Composer Ellen Taaffe Zwilich, 51:
Everyone has a right to make music. Hundreds of people have told me they particularly were told *not* to sing in school choruses—but they could have been making music another way. Music is not something to be ashamed of or to back off of, saying, "I'm not very good." You may be on a low level of performing but a high level of understanding. Talent isn't so rare, it's just unnurtured. I think when people grow up engaged in making music, on any level, it's a natural thing, an active thing. You're not having it handed to you. Lots of people use music as background. It makes you strictly a passive consumer. You have no choice in what you're hearing. So it's especially necessary to throw music in the foreground—to have kids make sounds themselves and learn they can have control over something that has its own intrinsic value. In school, you should realize that music is not something you get shuffled off to every other Tuesday but is a growing, developing thing. Learn how to participate in music and grow on your own. There's something in the psyche that demands music and that rewards it. Students ask, "Why are we doing this?" We're studying music because it's part of the soul of humanity.

With MARC PEYSER

Make composers human—not idols, but people with feelings and problems. Say, "Let me tell you about this guy Mozart. He had no money to pay his rent."

–ITZHAK PERLMAN

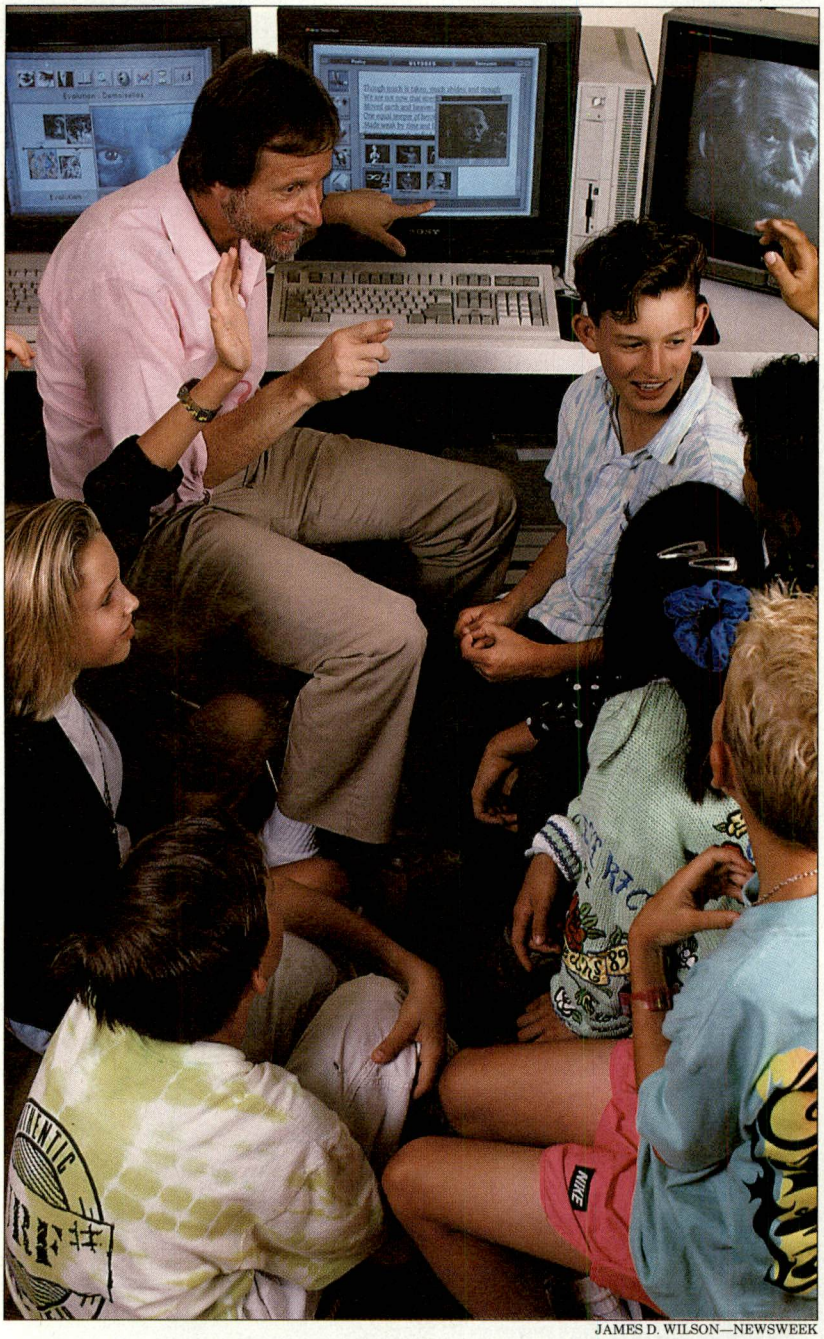
Children should learn as early as possible that music is fun and free.

–JESSYE NORMAN

Making art gives you absolute freedom to tell the truth and improve your reality

PHOTO OF ITZHAK PERLMAN BY CHILDREN'S TELEVISION NETWORK; PHOTO OF JESSYE NORMAN BY JOHAN ELBERS

MTV, IBM, Tennyson and You



JAMES D. WILSON—NEWSWEEK

BY MICHAEL ROGERS

For almost 25 years, filmmaker Robert Abel was a behind-the-scenes Hollywood star: he made the screen alive with special effects, subtle editing, shrewd artistry. Abel won Emmys for his documentaries and Clios from the advertising industry for commercials pitching everything from Levi's to 7UP. He produced music videos for Mick Jagger. A veteran of both Vietnam and Woodstock, he was filming 50 feet away when Robert Kennedy was assassinated. Abel was also among the first to use computers for special effects, influencing movies such as "2001: A Space Odyssey." And then last year, at the height of his success, Abel disappeared from the Hollywood scene.

"I realized," he says now, still trim and youthful at 53, "that I was sidetracked with commercials, making wonderful fantasies to provoke people to buy things they might not need." And so Abel turned his hand to something different: education. "Millions of Americans could be unemployable by the year 2000," he says. "One million students drop out every year. The solution is using the new tools of the information age to educate."

How can you turn people on to discover ideas? Take the invisible and make it visible.

Abel's approach blends computers and television in a meld dubbed interactive multimedia. "This could ultimately be the way we solve the central problems of education," he says. "Kids are not computerphobic. And they grew up on television. So when I saw that the television and computer were coming together, it made perfect sense." Interactive multimedia mixes video and text—all displayed on a single computer or television screen. The students, using devices such as a desktop mouse or a touch screen, explore as their curiosity urges. They can follow a lead from text to photos to music and back

Abel and company use 'the new tools of the information age to educate'

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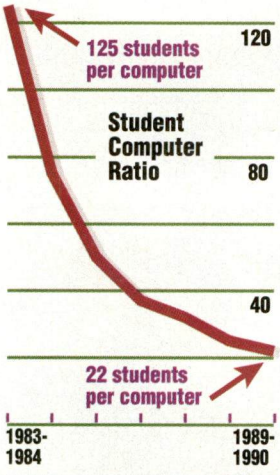
PHOTOS BY STEVE GOLDSTEIN

A journey by software from 'Guernica,' to other well-known works by Picasso, to aspects of the Spanish Civil War and culture

On-Line Classes

Students are logging on more often as classroom computers become more common.



SOURCE: QUALITY EDUCATION DATA

again. Once widely available, the software will likely be an optical disc, identical in shape to an audio compact disc. Most people will have to purchase new hardware to view these discs.

Such technology is not yet available at low prices. But the appeal is obvious. As tests, Abel and his colleagues Allen DeBevoise and Morgan Newman (who have now split from Abel to form AND Communications) chose two of the hardest-to-teach topics one might imagine: Picasso's epic canvas "Guernica" and the Tennyson poem "Ulysses." In the computer version of "Guernica," which runs on an Apple Macintosh, the screen shows the classic painting itself, and then lets students choose—by clicking with the mouse—various aspects for explanation.

"We asked," says codeveloper DeBevoise, "what it would be like if you could walk up to a painting and ask it questions—to take an art object and unravel it." Five critics appear in moving video on the television screen to describe their views of the painting. In one emotional segment, an elderly survivor of the Guernica bombing stands before the painting and details her memories of the deadly air raid.

The students can click on parts of the painting itself. What's the meaning of the distorted figures of women? Why was there a civil war in the first place? "The point," says Abel, "is to find your own paths within. You get turned on to different ways of learning. We're trying to create giant superhighways to education, because right now, the roads look pretty washed out." Just ask Jo Gifford, a teacher at Brentwood School in Los Angeles. "This won't replace teachers. But the best teacher in the world couldn't do what 'Guernica' does," she says. "You'd never have enough time to prepare the lesson plan."

The more dramatic example of Abel's work is his multimedia explication of the Tennyson poem "Ulysses," which runs on IBM computers. The poem depicts a sulking Ulysses, bored after returning from the Trojan War—not exactly the material that captivates modern high-school students. But Abel creates a fast-moving opening video montage—depicting a range of heroes from Martin Luther King Jr. to the Chinese man who faced down the tanks near Tiananmen Square in 1989.

Then, Abel segues into the poem. The text appears on screen, and viewers can ask questions, again using a mouse, about why a certain line works as literature. Is it onomatopoeia, or assonance, or alliteration? There are also descriptions of other forms of verse: villanelle, haiku, even a video interview with a modern-day Los Angeles rapper describing why he creates his form of poetry—out of the same desire for self-expression that motivated Tennyson.

Abel tests his work in various Los Angeles schools. In one school, prior to running "Ulysses," he asked the students to name their heroes. The boys said Michael Jackson and Michael Jordan. The girls nominated Madonna and Paula Abdul. "Where do you get your heroes?" Abel asked, and the answer was television. For a few hours, the kids used the "Ulysses" multimedia piece. At the end, Abel asked again about heroes, and one student immediately spoke up to say that maybe it takes more courage to stand in front of a tank in Tiananmen Square than it does to slam-dunk a basketball.

Neither of Abel's productions is commercially available, but they are likely to be soon. Companies such as IBM, Apple and Sony are all eager to provide the equipment for multimedia software. Abel's new company, Synapse Technologies in Los Angeles, is now developing the largest educational project ever done with IBM. "An average kid will have spent 20,000 hours in front of TV by the age of 16. We need to take the entertaining aspect of television and add it to education," says Lucie Fjeldstad, an IBM vice president in charge of multimedia and education.

In a sense, Abel is a modern-day version of the starving artist. Pursuing his vision of future education, he drained his own savings. "This was just something I had to do," he says. Ultimately his investment will almost certainly pay off. "I'm not just interested in K through 12, but in lifetime learning." Abel believes that private corporations will increasingly take on the role of teaching new employees.

Skeptics might argue that by teaming Tennyson with a rapper Abel is cheapening culture. But culture evolves constantly, and often the deepest insights link present-day work with its precedents. "How can you get people turned on to discover ideas?" Abel asks. "I think you take the invisible and make it visible." If that connection happens on a computer screen and works to inform otherwise oblivious students, then most certainly the means will justify the end. ■

"Views From A Heartland Campus"

Are There Any Truly Independent Colleges Left In The United States?

The vast majority of colleges and universities in the United States seek, accept and depend upon federal funds. The result is an overwhelming amount of federal bureaucratic controls and regulations. Hillsdale College, a liberal arts college in southern Michigan, has never in its 146 years accepted one cent of federal aid nor the controls which accompany that aid.

Today, three out of every four dollars in need-based tuition to public and private schools comes from the Government — but not at Hillsdale.

Hillsdale believes that seeking the Government to solve all of our problems is building a huge government bureaucracy, staggering deficits and mounting social problems.

In education, government money means government control in faculty hiring and promotion, student selection and scholarship aid. Such government regulations threaten to destroy independent education, an essential source of tomorrow's leaders.

These concessions to expediency and bureaucratic pressures have led to an erosion in curricula, leaching away understanding of the moral values implicit in our Judeo-Christian and Greco-Roman heritage. We are becoming a nation without roots in our past, lacking in independence and initiative, creativity and conviction.

Hillsdale believes there is a need for a sea-change in our national thinking. That this re-examination begins on a truly independent college campus dedicated to the teaching of the liberal arts and the humanities is appropriate. On these pages we intend to state our philosophy at Hillsdale as it affects a number of important national issues. The series is called, "Views From a Heartland Campus." We invite discussion.

Let the debate begin.

Dr. George Roche
President, Hillsdale College

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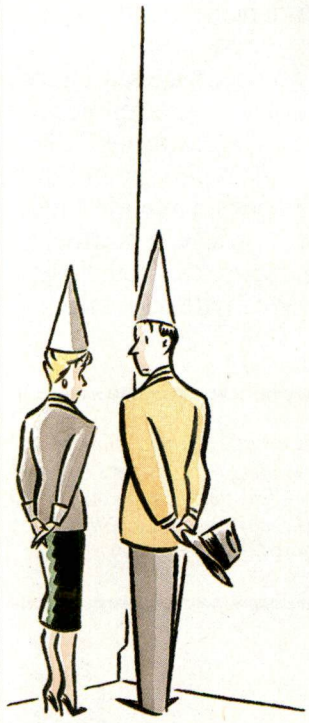


By John McCormick

By the 25th spring of her increasing discontent, Marijke Raju was ready to retaliate. She was fed up with indulgent parents who let third graders play baseball or hit the mall rather than finish their homework. And she'd had her fill of nonacademic interruptions—bus-boarding drills today, an assembly to unveil the school's chocolate-sales drive tomorrow—that clutter her third graders' schedule in the middle-class Chicago suburb of Northlake, Ill. "You're the parent, the nurse, the policeman, the social worker and, very last, you are the teacher," she says. To make matters still worse, those children who don't encounter rigor at home resent the discipline Raju imposes at school. So, last May, when someone slashed her tire in the parking lot, Raju decided *someone* should pay—and that someone should be a parent.

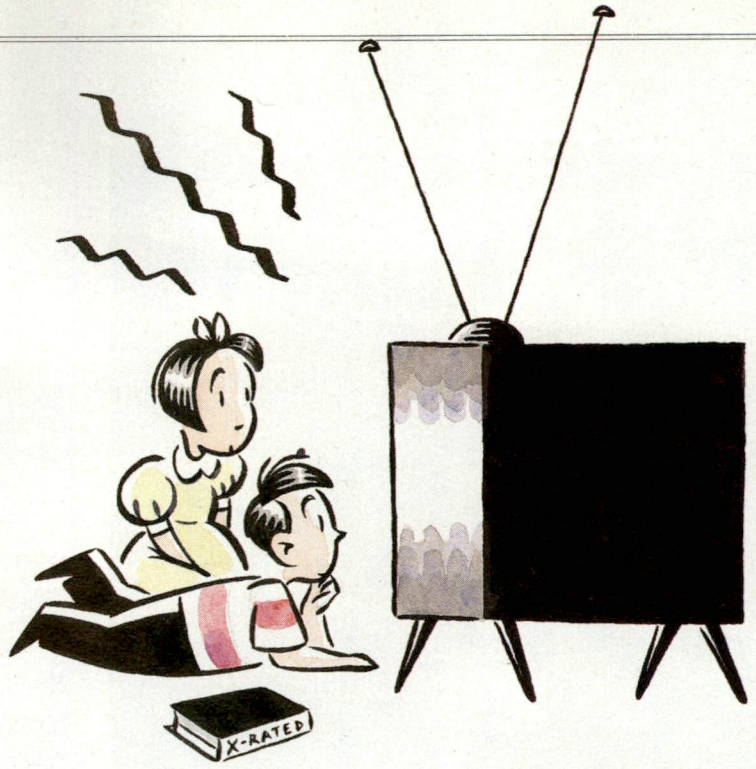
As it played out, an administrator reimbursed Raju before she could reach the school's parents' auxiliary. But the incident—and the target of Raju's ire—reflects a new reality. In faculty rooms across America, hypercriticism of the nation's educators is beginning to meet its match. Teachers are losing patience with demanding but unsupportive parents who blame everyone but themselves for Johnny's tepid performance. Judging by what they do rather than the lip service they offer, many of today's parents plainly put their own needs, and especially their careers, ahead of their children. While some of that is understandable, particularly in households where merely keeping food on the table is a dicey proposition, the unpleasant consequence is a void schools cannot fill. Equally frustrating are the worthy but increasing intrusions—lessons in everything from AIDS awareness to self-esteem to handgun safety—that a too busy society now expects its schools to impart. "We've asked schools to do too much," laments Brown University education expert Theodore Sizer. "Teachers aren't parents."

To the schools we consign our most prized possessions: our children and our tax dollars. But many of the nation's 45 million schoolchildren are woefully unprepared for each day's work. Some days it seems that fewer kids come to school hungry because their parents are poor than come tired because parents let them watch television too late. Teachers' efforts to boost achievement must navigate a flood tide of societal changes—high numbers of broken homes and working parents, to name two—that reduce the amount of influence kids get from authority figures at home. "What we used to call 'teaching' is now morning-to-night service to families," says Louise Sundin, president of the Minnesota Federation of Teachers. "Some days it looks like nobody else is helping."

ILLUSTRATIONS BY ROLLIN McGRAIL

The parents most driven professionally can be the least helpful at school. Many behave as though the school exists for their child alone; a particularly annoying subspecies of the self-absorbed pulls kids out of class for family vacations *and* asks teachers to prepare a week's lessons, presumably to be administered by the ski patrol. Connecticut educator Peter Buttenheim reserves the term "designer parents" for a growing, affluent cadre obsessed by the end product of education rather than the process. Designers typically suspect that *their* children's needs aren't being met, and treat even bright and enthusiastic teachers much as they would an unproven auto mechanic.

"Affluenza," as it is known in the trade, takes many forms. Veteran teachers, faced with a generation of passive learners weaned on television, say too many parents have lost their good sense or their spine. New Haven teacher Wendy Wells says her well-heeled and media-savvy students display plenty of surface sophistication, but lack critical powers of observation and the desire to study things in depth. "We don't teach as much because kids don't come with the same work ethic," she says. "Homework isn't done because the family went to the 'Ice Capades'."



E PARENTS?

Changes in family life have distanced parents from schools. Parents' lives are so hectic that schools often can't find them when problems arise; one mother informed a suburban Chicago school that she didn't give her unlisted telephone number to *anyone*. With so many parents working, one third of all elementary students return to empty homes. Home life is so closely tied to school performance that 70 percent of elementary principals now keep formal records of each child's family structure. (Fully 97 percent of the National Association of Elementary School Principals think children from single-parent homes pay a price academically.)

For many teachers, the dysfunctional family is more than an abstract term. Some kids reach kindergarten without having been read to or even talked to, and can interact with other children only by hitting them. Schools nationwide try to educate students who disappear for weeks without explanation; of the 26 seventh graders in one Los Angeles music-appreciation class, only four showed up regularly last year. And in drug-education classes, teachers often wonder who's teaching whom. "They say, 'I went to my uncle's house and they were measuring drugs on the scales'," says Helene Sapadin of New Haven, Conn. "Here we are saying that drugs are bad, and we're talking about their *families*."

When parents can't or won't convey crucial information to their children, legislatures and

Fathers and mothers blame everyone but themselves for Johnny's tepid academic performance

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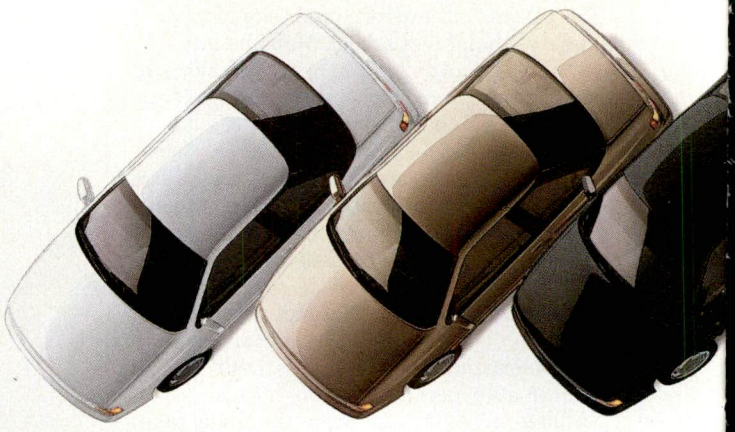

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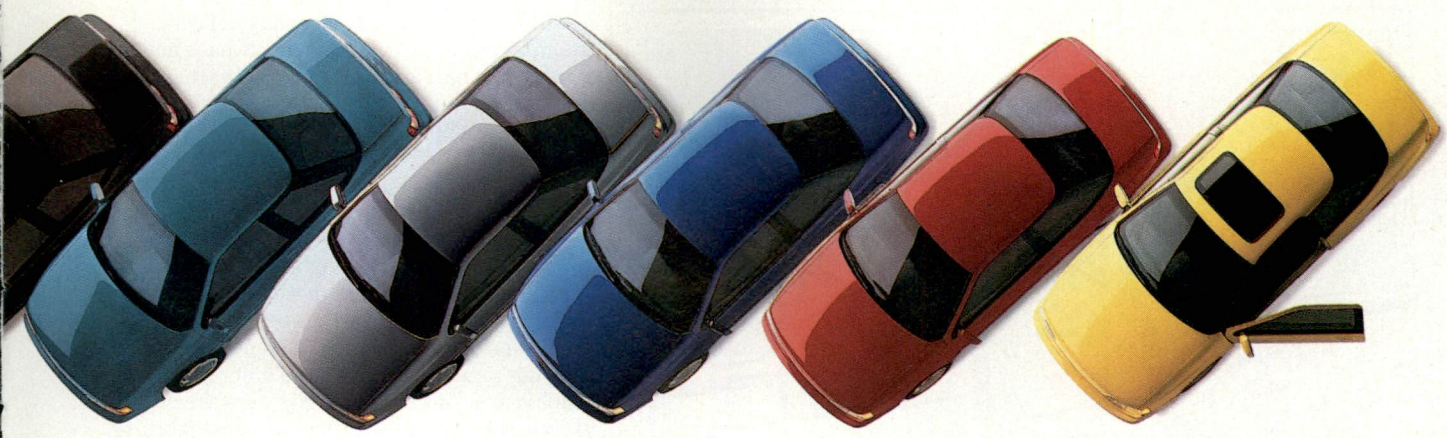

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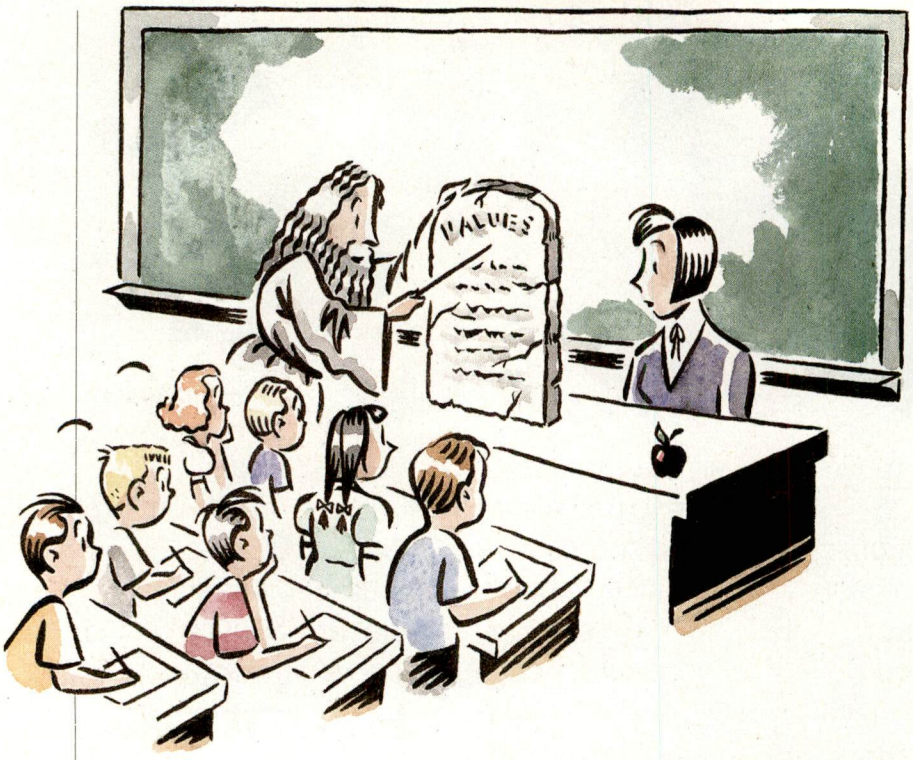

Ward Cleaver, Phone Home

Parents are pressed for time

73% of mothers with school-age children work outside the home. Nearly one fourth of all children under age 18 live with a single parent, and only 7% of school-age children live in a two-parent household where there is only one wage earner.

So schools teach the new facts of life

According to one survey, almost all elementary schools (95%) teach drug education, and more than half start teaching it in kindergarten. Most (72%) teach sex education.

SOURCES: BUREAU OF LABOR STATISTICS; NATIONAL ASSOCIATION OF ELEMENTARY SCHOOL PRINCIPALS

school boards rush to the rescue. Allan Vann, author of a book on bloated school curricula, likens the process to pouring water into an already filled glass. "Name *one* subject that's been *dropped* from elementary schools in the 1980s," grumped a recent newsletter from the principals' association. "Now, think about the subjects that have been *added:* AIDS, sex- and drug-abuse education, hygiene, family-life training, nutrition and fitness, environmental education, conflict resolution . . ." The list will never be inclusive. "Who's against bike safety?" asks Bruce Berndt, president of the Chicago Principals' Association. "But how much time should we spend on something like that?"

The most common argument for the swollen nonacademic curriculum is that if schools don't impart these often crucial lessons, no one else will. Consider the burden of teachers at Miami Beach Senior High School, who must acculturate a student body of 2,100 students of 67 nationalities. Principal Daniel Tosado says there is no other institution to help poor immigrant students and their families. But some educators say that misses the larger point. If south Florida mobilized church groups, nationality associations or elderly volunteers to help families with language training and social-service referrals, couldn't Tosado's staff devote more time to the classwork students will need if they're to achieve their dreams of a better life?

If teachers feel overwhelmed, many parents feel unwelcome. For too long some schools made parents feel like intruders. "We restricted conferences to certain days and we didn't welcome parents into classes," says Bob Chase, vice president of the National Education Association. "The barriers were unspoken but they suggested that we were the professionals." Moreover, the popularity of teacher-bashing during the 1970s and early 1980s made teachers nationwide feel defensive; undoubtedly many deflected their discomfort back at parents. Chase now thinks such barriers are falling. "Teachers are reaching out," he says. "We need the community's help."

Too often, though, both parents and teachers recite the timeworn mantra—"Parents and schools must work together"—and then blunder along separately. If any group should be capable of closing the gap it's the Parent Teacher Association. And PTA national president Ann Lynch is trying to set an agenda for a different demographic age. One example: chapters are urged to divide the old monthly meetings into morning, evening and weekend sessions so every working parent can participate. "We're hoping schools that say, 'We want parental involvement' will back that up with outreach programs," she says. "Too many parents don't have relationships with schools until there's a problem."

Terrel Bell, a former U.S. Education secretary, suggests a more formal approach: he would have every state require annual, written agreements between parents and schools as a precondition for enrollment. Among other things, parents would warrant that each child will get a good night's sleep, arrive at school on time and have a place at home to study. "This would impress on many parents their obligation," says Bell. "You get the service free but you have to make the commitment." In experiments around the nation, the San Francisco-based Quality Education Project has found that merely asking parents to sign pledges similar to Bell's proposed contract makes them feel far more accountable for their children's schoolwork. Indianapolis educators use a different approach: they search out parents at major employers for lunchtime workshops on such topics as helping a child learn to read. Minneapolis offers Success by 6, an amalgam of business, labor, government, health and education initiatives to help parents nurture the skills their kids will need to flourish in the early grades.

Many educators say there is no tactful way to impress on parents how much impact their priorities have on their children—and how important it is that they get involved at school. When academic or behavior problems arise, teachers routinely rearrange their professional lives to schedule special meetings at times convenient for parents. Not enough parents, they say, ever offer to do the same.

In the end, we've decided as a culture that education is too important to be left just to the educators, and that parenting is too important to be left solely to the parents. Those axioms, as a practical matter, lead to shared power and shared responsibilities. They can be a prescription for resentment and neglect—or an opportunity to raise a child successfully. For the moment, teachers would prefer to emphasize the latter. Heed us, they're crying. Help us. Help us help your children.

With KAREN SPRINGEN *in Chicago,* PATRICK ROGERS *in New York,* LESLIE BARNES *in San Francisco and* PETER KATEL *in Miami*

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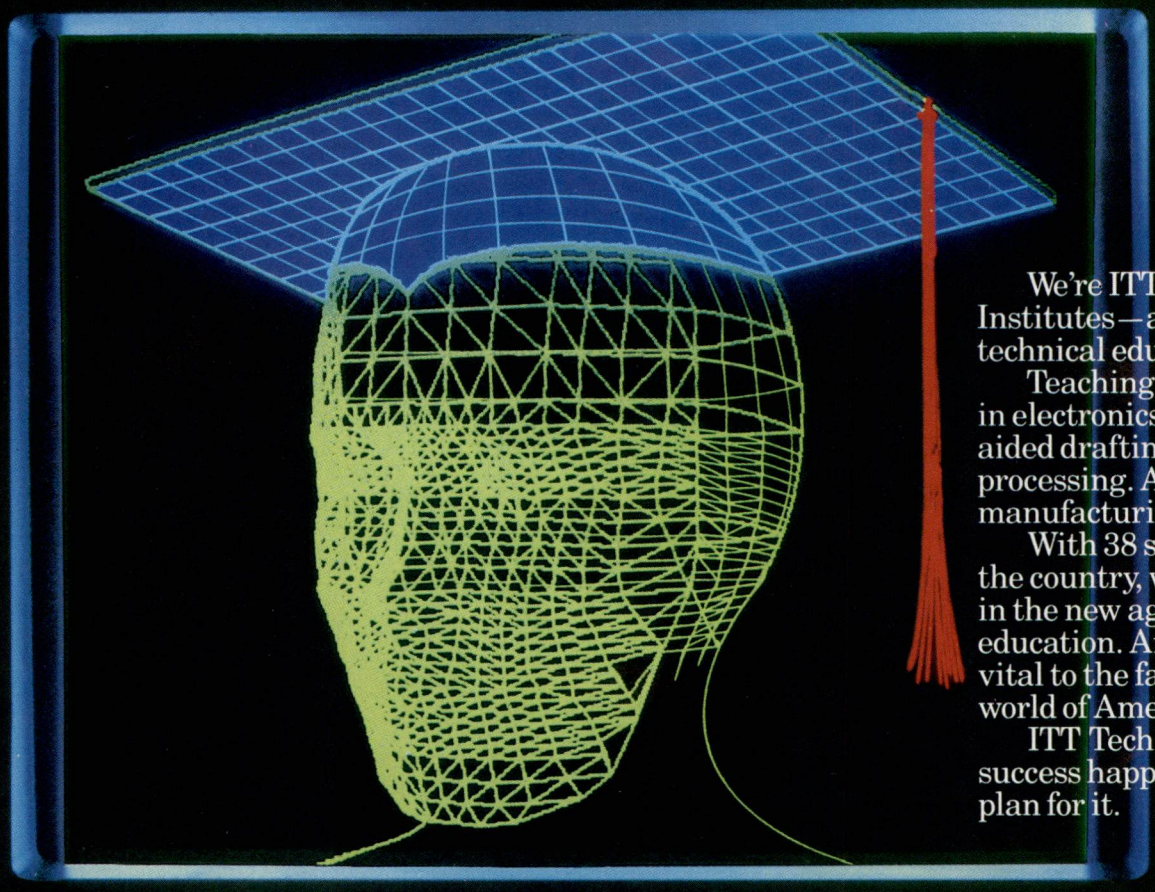

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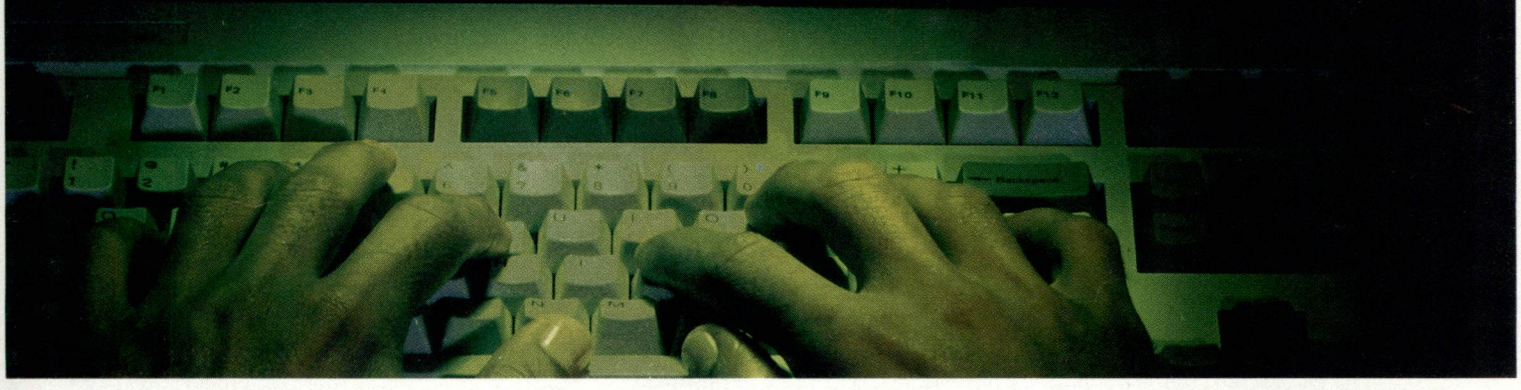


ITT

Building people's dreams

A MOTHER'S T

PHILIP GOULD

In a New Orleans housing project, a HIPPY tutor brings Susie Kiel's family a healthy dose of stimulation

Helping both generations is the program's point. Parents can gain as much as their children.

BY NINA DARNTON

The C.J. Peete Housing Development in New Orleans is hardly an ideal spot for learning. It was 98 degrees out and Susie Kiel's tiny, dark apartment was sticky and uncomfortable. In a cramped living room dominated by a bulky sofa, a television was playing loudly, tuned to a soap opera. A beetle scurried across the floor. But 4-year-old Willie Kiel wasn't distracted. He was sitting with his mother on the sofa, his brow furrowed in concentration. "Which circle is different?" his mother asked, pointing to rows of shapes on a work sheet. Willie hesitated, his arm hovering above the page, and almost imperceptibly his mother gently nudged his hand in the right direction. "That one," Willie exclaimed, pointing triumphantly to a circle with stripes inside it. His mother beamed.

That moment marked an accomplishment for both of them. Willie had learned a new concept—one that will help him when he goes back to his preschool class at the Thomy Lafon Elementary School across the street. And, equally important, his mother taught it to him. That mother-child dynamic lies at the heart of an Israeli-designed preschool-education program for disadvantaged children that has slowly been making headway in the United States since its introduction here in 1984. By sending tutors into the homes to show parents how to teach their children, HIPPY (Home Instruction Program for Preschool Youngsters) tries to give poor children the kind of developmental stimulation a middle-class home would provide.

HIPPY is one of many "parenting" programs that have sprung up around the country aimed at helping parents raise their children. But this program, which began in Tulsa, Okla., and has spread to 33 sites in 13 states, goes beyond showing parents how to stop a temper tantrum. It tries to teach, through a rigorous, step-by-step-schedule, how to stimulate a mind and position a child to succeed in school.

The New Orleans program, which started in

OUCH

1987, is typical. It hires mothers from the community as tutors, trains them and sends them into their neighbors' homes every other week for 30 weeks. Tutors show the parents—usually mothers in single-parent households—how to work with their preschool children. First they role-play. The tutor acts as the mother; the real mother plays the child. Together they work through packets of prepared lessons and storybooks. Then the mothers work directly with their kids and their progress is charted during home visits. On alternate weeks, the mothers meet as a group with the tutor. The program is offered for two years, starting with 4-year-olds in preschool and continuing through kindergarten.

Because the mothers often had negative experiences with education—many are dropouts—their own self-esteem is low. They usually don't believe they have anything valuable to teach their children and expect all learning to take place at school. "This program puts the parents back in the driver's seat," says Michael Honoré, a coordinator of early-childhood programs for the New Orleans Public Schools. "It's a common perception that project moms are negligent," Honoré says. "They're not. They just need a vehicle to help them help their kids. Once they have that, it makes them feel good and it helps them, too."

Helping both generations is the program's point. Mothers can gain as much as their children do. Susie Kiel, for example, who was unemployed and poorly educated, went to vocational school after her eldest child completed the HIPPY program. "It just made me feel good about things," she says.

At first, the New Orleans program targeted children who were not in preschool, on the theory that they would have the greatest need. But that didn't work. Parents weren't motivated enough to participate and the dropout rate soared to 51 percent. Honoré says the program works best while a child is in school because the efforts of the mothers can be directly reinforced by the teachers. "How did your boy get so good at telling stories?" a teacher might ask. "And then that mom will throw her shoulders back and say 'Well, it's HIPPY'," says Honoré. "It's the best advertisement we have." Last year, 125 New Orleans families were enrolled in HIPPY. The dropout rate fell to 4 percent.

HIPPY began in Israel as an effort to help children of poor immigrants from Africa and Asia. Officials suspected that some sort of preschool supplement was necessary, but were divided as to whether it should take place at home with the mother or in a class with a teacher. Research funded by the U.S.-based National Council of Jewish Women showed that the kids who worked with their mothers did best. In her book, "Success Begins at Home," Avima D. Lombard, who devised HIPPY, also claims similar improvement in the mothers studied. Many went back to school.

Impressed with the results, the NCJW wanted to bring the program to the United States. The first program was sponsored by a local chapter in Tulsa, Okla., in 1984, quickly followed by Miami in 1985. By chance, Hillary Clinton, wife of Gov. Bill Clinton of Arkansas, was in Miami as local newspapers announced the new program. She brought some clippings home to show her husband. The Clintons became enthusiastic supporters of the program, helping to sponsor and gain funding for programs throughout the state. Nineteen of the 33 HIPPY programs in the United States are currently in Arkansas.

Today, HIPPY International, based in Israel, operates like a sort of social-service franchise. "We set up contractual relationships with every site, setting the parameters of the program and charging fees for instructional materials and training," says Miriam Westheimer, national director of HIPPY USA. (It costs $6,500 to start a local HIPPY program; fees decline in subsequent years.) HIPPY USA pays a licensing fee to HIPPY International in Israel, where, until this year, all HIPPY coordinators went to be trained. Lombard travels from country to country explaining the program and trying to ensure quality control. HIPPY USA also sends staff members to visit every site and help as problems arise. The organization is nonprofit and fees go toward costs and research.

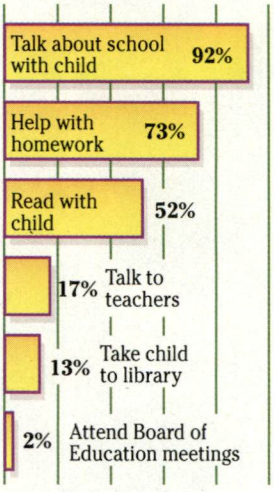
The program, of course, is not without problems. There's the scramble for funding that afflicts all social-service projects and a demand for new programs that HIPPY can't quite meet. But for now, the top priority, says Westheimer, is to revamp some of the material to make it more appropriate for American kids. "It's mostly the stories," Westheimer says. "Most are universal, but some are specific to Israel." Honoré points out that one of the stories takes place in Africa. A barefoot African child wanders through the jungle making friends with the animals. "For black people, trying to raise our children's self-esteem, that just reinforces the stereotype of Africa as primitive," she says. The American suggestions for new material will undoubtedly reflect such concerns, and are awaiting approval by HIPPY International. Revisions from teachers in the field are welcome—they were important to the early development of HIPPY in Israel, too.

In the meantime, there are plenty of reasons to celebrate. Twelve new programs are already slated to open next year. Willie Kiel just graduated from the preschool program for 4-year-olds. And his mother? She's finishing her course in "motel hospitality" and getting ready to look for a job as a housekeeper. ■

Quality Time

In one survey, mothers and fathers reported they were more likely to talk than act.

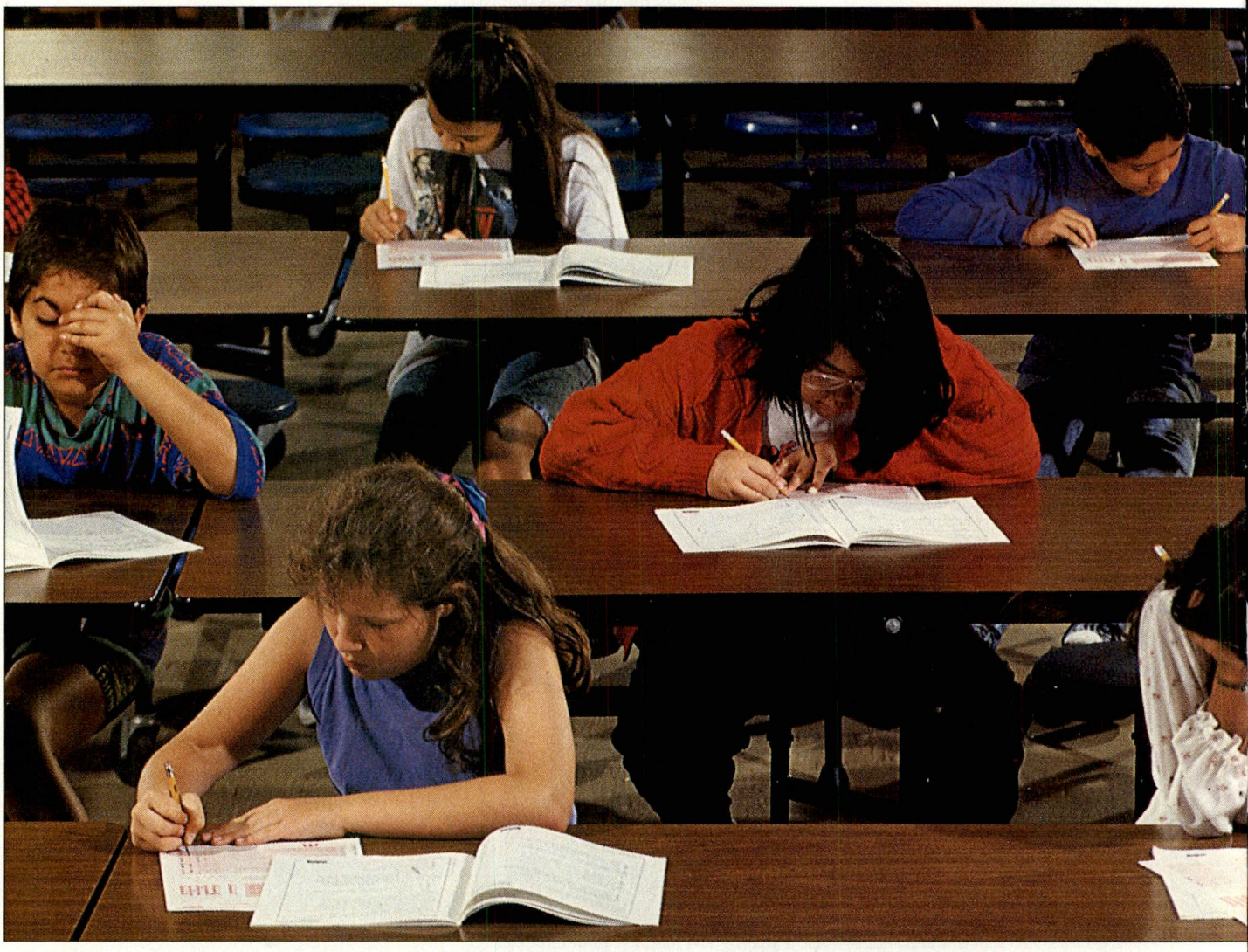
Parental Involvement



SOURCE: PTA/DODGE NATIONAL PARENT SURVEY

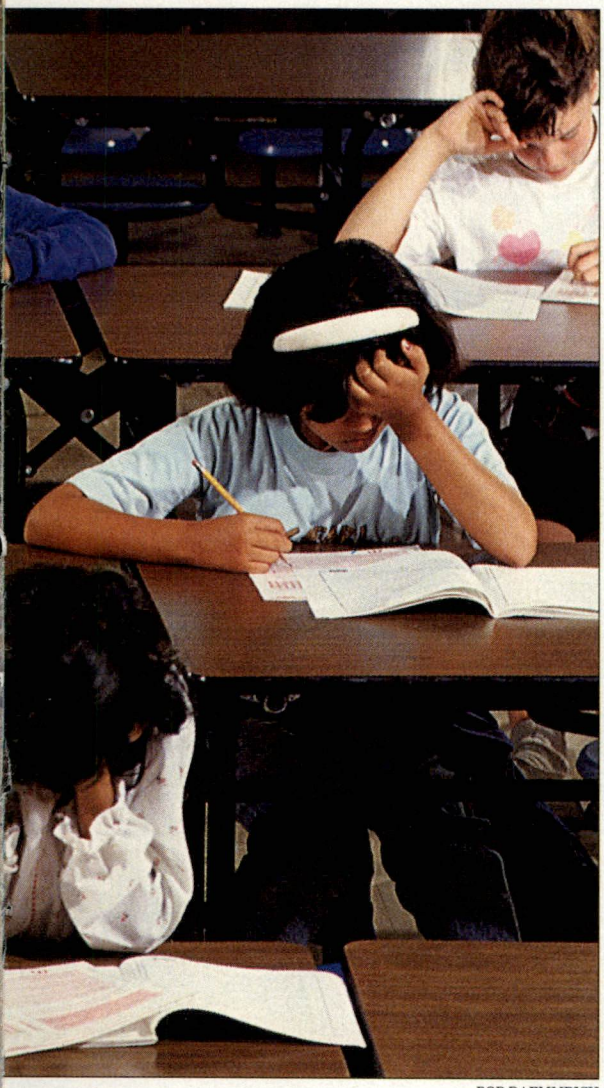
A CONSUMER'S GUIDE TO TESTING

By Tom Morganthau



Stripped of its jargon and arcane statistics—what's a "national stanine," anyway?—the computerized score sheet contained a painful surprise for Patricia, a Virginia divorcée. Her son, Fred, an eighth grader at a suburban junior high school, had scored at the 45th percentile in reading comprehension on a nationally used standardized test. The boy was mortified and his mother was worried. How could her child, a straight-A student, score so badly in such an important area of his schoolwork?

Welcome to the brave new world of accountability in public education—the widening use (and at least occasional misuse) of standardized achievement tests in thousands of schools and school districts from coast to coast. No other aspect of the national school-reform movement has generated so much heat and so little light—so much controversy among the experts, and so little genuine understanding on the part of the public. Achievement testing is frequently vilified as the source of all that is wrong with U.S. schools, and the tests themselves are routinely criticized as biased, mechanistic, dehumanizing and inimical to learning. There may be at least some justice to those criticisms, and there is no doubt that the testing industry is under increasing pressure to improve its products. But there is little doubt that standardized testing in some form is here to stay. The reason: there is no other way—no equally efficient, relatively objective method—to find out whether American schoolchildren are learning what society wants them to know.



BOB DAEMMRICH

Beyond that truism, virtually nothing about educational testing is simple. It is arguable, for example, that only a handful of mathematically adept adults truly understands the statistical methods on which standardized testing is based. Although many Americans have undoubtedly heard of the bell-shaped curve, how many know that it is a mathematical construct with its own rules and limitations as a means of depicting reality? How many know that the term "stanine" is a corruption of the phrase "standard nine," or that it refers to the division of any group into nine equal parts? And what about the "grade-equivalent" score, a time-honored staple of educational testing? "People think they know what grade equivalents are, but they don't," sighs Stephen L. Koffler of Educational Testing Service in Princeton, N.J. "I'd argue they shouldn't be used."

Viewed from the perspective of overburdened and anxious parents like Patricia, school testing is a jungle of obscure terminology and complicated numbers—and American educators, it seems fair to say, have generally done a lackluster job of making the data understandable. Koffler can help. At 41, he is director of test development and state services for the National Assessment of Educational Progress, a federally sponsored testing program run by ETS. His daughter, Jordana, 7, is entering second grade, and that fact tends to reinforce the consumerist dimension of her father's thinking.

What parents need now, Koffler says, is a primer on standardized testing. The primer is based on three common-sense rules: get actively involved with your child's education, don't be afraid to ask questions and remember that the scores are based on just "one test the child took on one morning in his or her life." To make "any decision on the basis of a single score," Koffler says, "in my opinion is simply not sound."

But standardized tests can provide useful information about a child's learning—provided that they are interpreted carefully, and provided that the results are used in conjunction with all other information about the child, including the child's own sense of how he or she is doing in school. In Koffler's view, that means parents should keep a portfolio of all pertinent records on a child's educational progress: report cards, teacher evaluations and test scores. He urges parents to confer with the teacher about test results, partly to ensure that the scores are meaningful, but even more to see what kinds of help the child may need. The most valuable aspect of test scores, he says, is that they can reveal "what I can be doing as a parent, and what the school should be doing, to help my child."

Turning scores into usable information is easier than it looks, but it takes a rudimentary knowledge of how standardized testing works. For starters, it is essential to grasp a basic distinc-

Though vilified, standardized tests are the fairest way to find out if students are learning

"I'D BE AN expert ON THIS BY NOW if I didn't have to take SO MANY naps."

SARAH BAGWELL, AGE 4, *Cardome Center, Georgetown, Kentucky*

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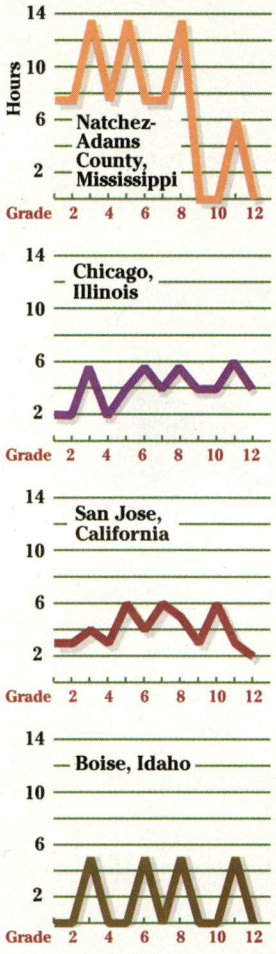
INVESTING IN THE INDIVIDUAL

A Land of Exams

Districts vary widely in their testing policies. But by many indications, standardized tests will play an even larger role in the future.

Hours of Standardized Testing by Grade



tion: the tests that Koffler wants parents to understand better are *achievement* tests—not IQ, aptitude or ability tests. Achievement tests measure what educators call "cognitive skills," the learned behaviors of reading, math and other subjects. They do not measure intelligence—and to Koffler, it is vital that parents and teachers alike avoid the destructive conclusion that a child who makes low scores cannot learn. *All* children can learn—and all children, even the best and brightest, have learning gaps that testing can help to identify.

Achievement tests have been in use in U.S. schools since the 1940s and they are nearly universal today: by some estimates, 127 million tests are given each year. But testing practices vary widely from district to district. In some schools, children are tested in every grade, while in others, children are tested at less frequent intervals. The tests serve two broad purposes in American education. They are used to help identify the learning problems of the individual child, and they are used to help school officials evaluate the effectiveness of the schools' instructional programs. But even the best standardized test is limited in two important ways: it measures only the sort of cognitive skills that educators deem important, and it is the prisoner of its own scoring system.

There are two different types of scoring systems in widespread use in U.S. public schools today. The first is known as "norm-referenced." Norm-referenced tests measure a child's achievement against a norm, or set of scores, established by a group of students thought to be typical of the nation as a whole.* The other type of test is known as "criterion-referenced." Criterion-referenced tests measure student achievement against a predetermined standard, or criterion, such as a specific set of eighth-grade reading skills. The tests used by New Jersey and other states to decide whether high-school seniors qualify for diplomas are criterion-referenced tests. Depending on state law and local policy, a school district may use either norm-referenced tests or criterion-referenced tests, or both. Policies on the release of test-score data also vary widely: in some districts, parents receive only the scores made by their own children, while other states and localities release grade-by-grade scores for every school. Koffler says most test results should be made public. If they are not—if school or school-district policy keeps the scores confidential—parents should contact school officials to ask why.

Norm-referenced tests are the more widely used and, because of the way they are scored, the more easily misinterpreted by laymen. They are designed to locate each child's performance on a bell-shaped curve whose midpoint, or median, is a statistical definition of the national average. Norm-referenced tests typically produce a smorgasbord of different numbers—stanines, quartiles, grade equivalents and percentiles—to express this basic comparison with the norming group. They also produce so-called "raw scores," which merely record the number of questions that the child answered correctly on each subsection of the test. A parent like Patricia is thus confronted by a report that combines raw scores, grade-equivalent scores, percentile scores and stanine scores for 13 different subtests—a potpourri of statistics whose diagnostic significance can be extremely difficult to grasp.

Koffler's advice is simple: ignore the esoteric statistics. He is particularly critical of grade-equivalent scores because they can lead parents to outlandish misunderstandings of their child's ability. Grade equivalents are usually reported as two numbers separated by a decimal point. The first number refers to the grade level and the second refers to the month of the school year. A score of "4.8" means the child is performing at a level roughly equal to that of an average fourth grader in the eighth month of the school year.

It is perfectly possible for children to make grade-equivalent scores that are wildly out of sync with their actual grade level, which is where many parental misunderstandings begin. Patricia's son, Fred, for example, scored "13.4" in math problem-solving. Taken at face value, that score suggests Fred can do math as well as a college freshman, which is certainly not the case: Fred has never taken algebra, geometry or calculus, and the test did not cover those subjects. Instead, his grade-equivalent score simply means Fred does eighth-grade math very well.

The most direct indication of a child's strengths and weaknesses are the answers that he or she gave on individual questions on each section of the test. These answers are usually available to school officials, and parents should ask to review them with the teacher. In general, test results should conform to all other indicators of the child's work in school. If they do not—if the test results indicate a previously unidentified problem area—there are three possibilities. First, the score could be an aberration: as Koffler says, kids sometimes have bad days, just as adults do. (That was the explanation in Fred's case.) Second, the test may cover subject matter that the school has not yet taught or has not emphasized; any mismatch between the test and the curriculum can lead to lower scores. And finally, the score may indeed indicate that the child is having problems with the subject matter.

Percentile scores compare a child with the national norming group or national average—but they are not percentages, they do not mean that the child got a grade of, say, 85 on the test. A percentile score of 85 means that the child's raw score was higher than 85 percent of the children in the norming group; a percentile score of 50 means that the child was "on the median," or exactly average, for his or her grade level.

Most parents are understandably curious to know how their child or their child's school compares with the national average. But the real value of a national comparison is that it provides at least a rough assurance that the school is teaching the same basic curriculum that most other schools in the nation use. (It also provides

* The most widely used norm-referenced tests are produced by a handful of big commercial publishing houses. The list includes tests such as the Iowa Tests of Basic Skills, the Metropolitan Achievement Tests, the California Achievement Tests and the Stanford Achievement Test, among others.

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Parents should ask for their child's answers—and the test results for the entire school

a measure of how well the school is teaching it.) The reason is simple: the content of standardized tests reflects the prevailing consensus among educators and testmakers about which skills are essential at each grade level. As a result, the fact that a school is at or above the national average is an indicator that its students are learning what most other kids are being taught. Koffler argues that parents should not be satisfied if school officials report only local percentiles or local norms, since that data offers no comparison with other school systems.

But test publishers typically offer a choice of norming groups. In addition to the standard national norm, school officials who buy commercial tests can choose among norming groups consisting of big-city schools, suburban schools or rural schools. The suburban norms are highest, while the urban norms are lowest, even though the questions on the test are exactly the same. In effect, publishers offer big-city school officials scoring systems that compare their kids with other big-city children, and they offer suburban schools norms set by suburban children. That practice—a variable standard for school achievement—is broadly supported by many educators, including Koffler.

What it means in practice is that parents should ask school officials which norming group was used in reporting the scores. They should also be aware that most of the widely used norm-referenced tests are aimed at the broad middle range of American schoolchildren. As a result, these tests do not accurately measure the achievement of children at both ends of the spectrum—the very low-scoring child and the very high-scoring child. Fred, for example, got the right answers on 113 out of 117 questions in math and placed in the 99th percentile nationally. It may well be that Fred is actually in the top 1 percent of all eighth graders in mathematics, but the test result doesn't necessarily prove it. As a practical matter, a norm-referenced score above the 95th percentile or below the 5th percentile is at least somewhat unreliable.

The trend toward test-based accountability also means many parents are now able to use school-by-school scores, along with district and statewide scores, to make better-informed judgments about the quality of public education. Achievement testing provides a valuable measure of instructional effectiveness, and it can reveal the strengths and weaknesses of a school program just as it reveals the strengths and weaknesses of an individual child. Koffler thinks that parents have a perfect right to review test data and that school officials should explain what the data mean. "There may be a reasonable explanation" for a decline in test scores, Koffler says, "but the explanation, reasonable or otherwise, ought to be part of the public reporting of how the school district was doing. School people shouldn't just release the scores and leave it to the parents to make their own interpretation."

Koffler says he would be concerned by any large year-to-year drop in a school's test scores, or by any systematic difference between math scores as compared with reading scores. Parents can also use scores from previous years to follow the learning progress of a "cohort," which is education jargon for a group of children moving from grade to grade in a school or school district. If, for example, a cohort's scores are above the national norm in second and third grade but drop off substantially in fourth grade, that, too, would be reason enough to ask questions, Koffler says.

School-by-school and district-by-district comparisons are intensely controversial with many educators, and critics charge that the rising emphasis on standardized testing has led to a national epidemic of "teaching to the test," to the deceptive use of test scores and in some cases to outright fraud by teachers and principals.

No one can say just how widespread these abuses really are. But educators and test experts are acutely aware that norm-referenced test results are vulnerable to a form of statistical fudging known as the "Lake Wobegone effect." (Lake Wobegone is Garrison Keillor's mythical town—the town "where all the children are above average.") In 1987, a physician named John Jacob Cannell found that 82 percent of a nationwide sample of more than 3,000 school districts, as well as 32 state departments of education, claimed to be above the national average on norm-referenced tests. Although Cannell's research was criticized by educators, a study commissioned by the U.S. Department of Education has broadly confirmed that norm-referenced test results have been inflated. The Lake Wobegone scandal is now forcing school officials everywhere to improve their testing practices, and Cannell has published a second study bluntly entitled "How Public Educators Cheat on Standardized Achievement Tests."

Koffler agrees that parents need to be aware of the many ways in which the validity of standardized tests can be compromised. A major cause of the Lake Wobegone effect, he says, was the use of outdated norms: today's students are being compared with schoolchildren a decade ago. Since the working life of a norm-referenced test is about 10 years, he says, parents should check to see that school officials are using an up-to-date edition of the test and that the questionnaires are kept secure. The other major cause of score inflation is teaching to the test, although Koffler argues that the notion has been misunderstood. If a school decides that a certain set of math or reading skills is the right goal, he says, teachers ought to teach those skills throughout the year: that's teaching *toward* the test, and it is a legitimate style of pedagogy. Teaching *to* the test, on the other hand, means coaching or drilling students in the specific assessment items or test questions—and that's cheating. What should parents do? Report it—to a school-board member, a district administrator or the state department of education.

The widening use of achievement tests is already bringing about a consumers' revolution in U.S. schooling. As Koffler says, parents should know as much about the meaning of test scores as all other aspects of their children's education. A school that won't cooperate may not be worthy of your trust or your child. ■

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SALUTES

DR. HENRY J. GASKINS

As he watched his son's friends playing basketball in his backyard for hours without losing their enthusiasm, Dr. Henry J. Gaskins said to himself: "If we can get that kind of fervor into the classroom, we can be successful."

The "we" includes Dr. Gaskins, a Library of Congress supervisor with a doctoral degree in education, and his wife Maryann, a consultant with the National Aeronautics and Space Administration. The parents of five children, all of whom have excelled academically, they began an after-school tutorial and enrichment program for minority students nine years ago.

Their split-level home in southeast Washington, D.C. doubles as the Freedom Youth Academy, a name selected by its students. For four hours every weeknight and all day Saturday, 80 students, ranging in age from kindergarten to college, receive one-on-one assistance from the Gaskinses, two adult volunteers and their academically-talented peers. Those who can afford it contribute $5 to cover the cost of school supplies.

Basing his classroom approach on memories of the constant support his schoolteacher mother gave her children, Dr. Gaskins wants his students to feel part of a close-knit family. "Everybody is there to help somebody else. We are all of one accord," says the 55-year-old Gaskins.

The academy's one-on-one approach reaches the gifted student as well as the underachiever. Having taught for 25 years himself ("I have always worked two jobs."), he understands public school problems. "Teachers with 35 to 40 students in a class must teach to the average student and must adhere to a curriculum schedule."

Just as good parents recognize the differences in each of their children, the Gaskinses try to assess each of their student's needs. Says Dr. Gaskins: "Students are individuals and, like most of us, have different learning styles and talents. You've got to recognize their styles and improve and maximize their talents to create continued growth."

The biggest problem for students stems from a lack of focus. The academy helps students set personal goals because, as Dr. Gaskins explains, "once they know where they want to go, learning can really begin." He delights in telling the story of an average, "unmotivated" student who came to the academy for three years and graduated as valedictorian of his high school class.

"I want my students to commit themselves to learning. If they are going to be successful in this society, they have to acquire an education, they have to do something with their lives," he says. To that end, he teaches what he calls the three R's: Respect, Responsibility and Restraint.

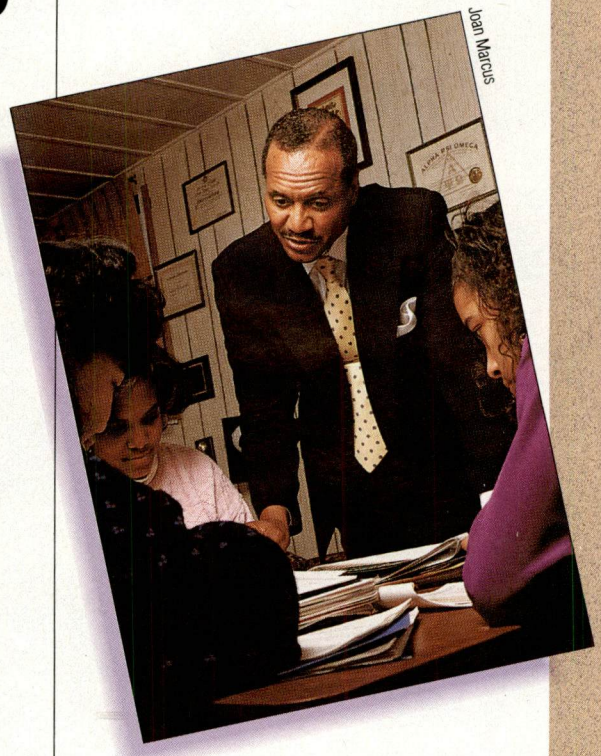
He and his staff seek to do what a supportive parent does by providing emotional and academic guidance in a peaceful atmosphere. Noting that his students' home life is often lacking in these areas, Dr. Gaskins is, at the same time, understanding: "Many of the parents are high school dropouts and simply can't help their children with their studies; and a single parent working two jobs is unable to help."

In addition to tutoring, the academy prepares students to qualify for scholarships and to take their college entrance exams. The extra hours of studying can make a big difference in a student's future. One football player came in search of help after he was offered a scholarship if he raised his Scholastic Aptitude Test (SAT) scores from 640 to 700. After six months of after-school training, his score rose to an impressive 1060.

The academy's reputation for success has traveled by word of mouth from parent to parent. During the summer, many send their children from as far away as Connecticut and North Carolina to stay with relatives so they can attend the program.

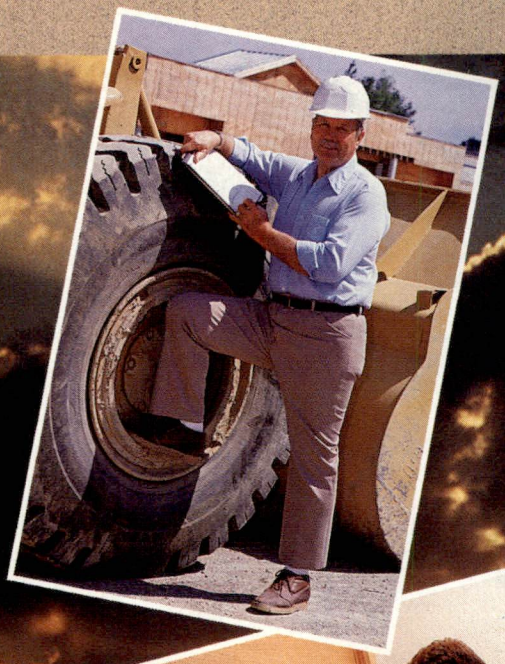
Dr. Gaskins, who recently accepted The President's Volunteer Action Award at a White House luncheon, has a dream. In it he sees scores of Freedom Academies around the country, all of them preparing students for the bigger learning arena, *life*.

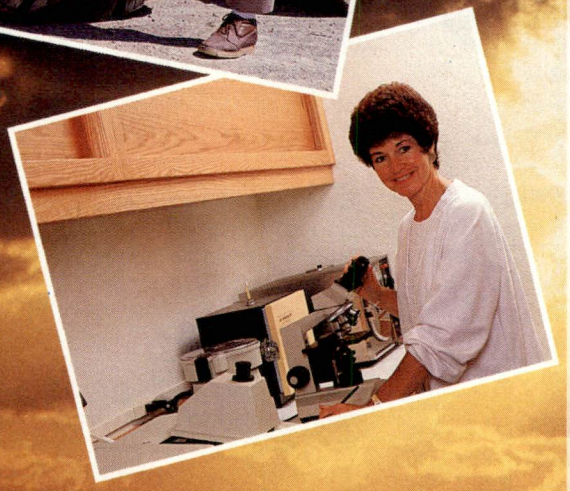
This is the twenty-fifth of an Amway-sponsored series on Americans who are quietly "making a difference."

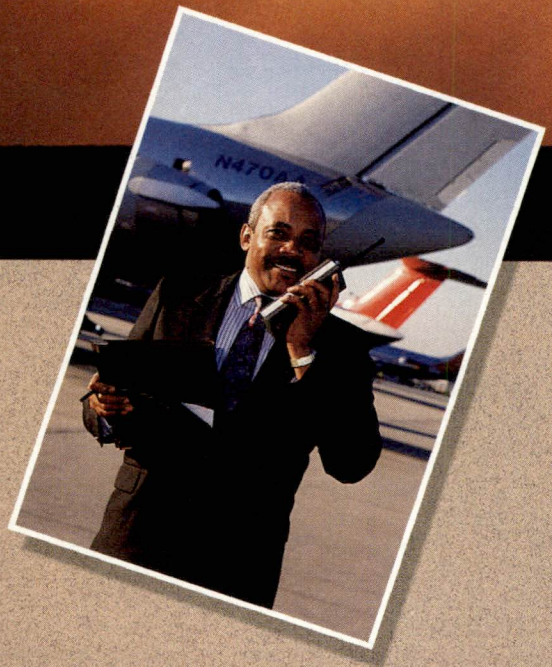


Joan Marcus

"Once they know where they want to go, learning can really begin."







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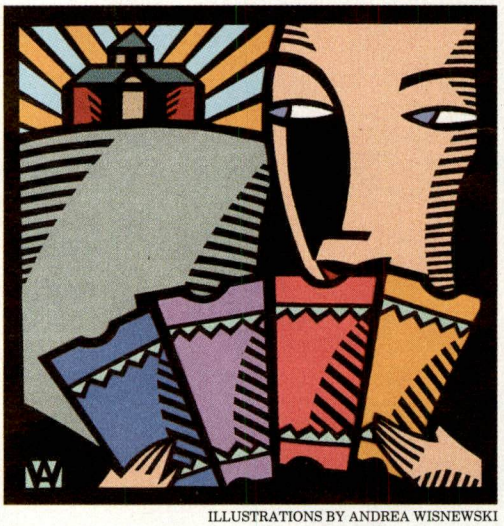


ILLUSTRATIONS BY ANDREA WISNEWSKI

By Tom Morganthau

Consider the nation's school crisis from the point of view of a man like Frank Newman, president of the Education Commission of the States. American educators, Newman says, "are like a bunch of zookeepers who went out and woke up all the lions and said, 'Hey, it's feeding time!' Now the lions are up and moving around, and we say, 'Oops, we were wrong—we still have an hour and a half to go'." And that, as Newman says, "is a bad time to be around the lion cage."

The lions are governors, legislators, the CEOs of major U.S. corporations—and George Bush, the education president. They have been roused by repeated warnings that U.S. public schools are in deep, deep trouble. It has been seven long years since a blue-chip federal panel reported that a "tide of mediocrity" had engulfed the nation's schools, and the lions are roaring for decisive action on education reform. Newman, who thinks the situation is "dangerous," is not alone in seeing the handwriting on the schoolhouse wall. "We are absolutely running out of time," says Ernest Boyer, president of the Carnegie Foundation for the Advancement of Teaching. "I am convinced that we have perhaps a decade—and I may be optimistic—to make school improvement the universal experience, and to have some confidence in the public mind that the system is working."

You can make the case, as Boyer does, that the top 20 to 25 percent of American public schools are still the best in the world. You can also argue, as Newman does, that the traditionbound U.S. education establishment has lately become much more open to reform. But the pace of change has been glacial, and proof that American children are learning more or learning better is very hard to find. It may be heartening that George Bush and the nation's governors, meeting in Charlottesville, Va., last year, vowed that U.S. schools will lead the world in science and mathematics by the year 2000. Even in that unlikely event, critics charge that the vast majority of American students still achieve only a superficial grasp of essential subject matter, and international comparisons tend to bear that gloomy contention out. On science and math tests, American high-school seniors score well below their counterparts from almost every other nation in the industrialized world. "U.S. educational policy over the past three decades has been a massive experiment that has tested whether spending more money . . . will result in better-educated students," writes John E. Chubb of the Brookings Institution. "The results are in. The experiment has failed."

That crushing verdict leads Chubb and many others to propose a truly radical prescription for

America's public schools—privatizing them. The most familiar variant of this idea is vouchers. Parents of school-age children would receive government scrip that could be "spent" on tuition at any school, public or private. Parents and children could then choose the kind of schooling they prefer, and the U.S. education system would gradually be reshaped by the composite force of consumer decisions. Voucher plans are nothing new in education, but they are increasingly popular among conservatives and other critics of the status quo. What has riveted the attention of mainstream educators like Newman and Boyer is the experimentation of two states, Wisconsin and Oregon, with privatization. In Oregon, a proposal to allow parents tax credits toward the cost of private-school tuition is on the ballot as a referendum item in this November's election. In Wisconsin, the state legislature has authorized a voucher-plan experiment for up to 1,000 low-income children in Milwaukee. The Milwaukee plan goes into effect this September—and it already has the explicit blessing of George Bush.

The education president delivered his endorsement of the Milwaukee voucher plan at a Wisconsin GOP gathering last spring. While this posture might seem to contradict his support for public-school reform, the White House is serenely confident that Bush can have it both ways. The president's chief domestic-policy adviser, Roger Porter, said that Bush believes expanded consumer choice is essential to bring about a "fundamental restructuring" of the nation's elementary- and secondary-school systems, which Porter described as "inflexible, noncompetitive and unaccountable." The president, Porter said, is not telling state and local officials how to change the system, only that the system needs to be changed. Asked if the administration believes school reform should include vouchers, Porter said only that he was "not suggesting the particular form [this] restructuring should take."

But vouchers are anathema to all who believe that education should be a public enterprise and a public trust. The state school superintendent of Wisconsin, Herbert Grover, accused Bush of "nuking" the public-school system—and Boyer, who is broadly supportive of the president's attempts to promote school reform, worries that voucher plans and other forms of privatization could erode taxpayer support for public education. "It's romantic to think you would be able to find an alternate system that would be excellent and evenly available to all," he says. "Whatever public-school system remained would be a disturbingly inadequate one primarily serving the least empowered people in the nation. The gap between the haves and have-nots will continue to increase." Bill Honig, state superintendent in California, denounces vouchers as "dangerous claptrap" comparable to deregulating the savings and loan industry. Worse yet, Honig maintains, vouchers have become popular at precisely the wrong moment—a time when educators in many areas of the country have begun to show that school reform can work after all.

The Elusive Diagnosis

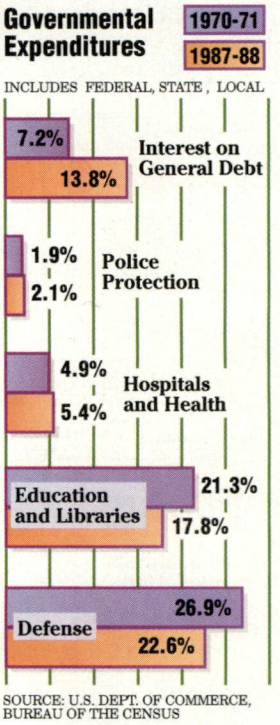
The hard part, for politicians, parents and taxpayers, is understanding just what it is about the American public-school system that seems to be broken. The past seven years have seen a variety of piecemeal reform proposals, all of which are based on different and sometimes conflicting notions of where The Problem lies. Take decentralization, long a favorite nostrum among reform-minded critics. By this theory, the dead hand of top-down administration has stifled good education; eliminate the bureaucrats and presto! Everything will get better. But New York City, where decentralization was adopted in 1970, is now trying to undo the squalid excesses—patronage, mismanagement, and even outright theft—of the decentralized system it installed. When it comes to school reform, as Boyer says, Americans seem addicted to "a kind of erratic lunging from one extreme to the other."

Many of America's education leaders have long recognized that The Problem is more complicated than that. In a system that includes 40.7 million students, 15,500 school districts, 83,000 schools and more than 4 million professional and paraprofessional workers, there are simple solutions and there are good solutions—but there are no good, simple solutions. What U.S. education needs now, Newman says, is a healthy dose of *perestroika*. That means goals, leadership and a strategy designed to push everyone in the system—students, teachers, administrators and parents—toward the necessity of deeper learning and deeper pedagogy. "Almost everyone would agree on a half-dozen priorities for school excellence," says Boyer. "What we need in the next phase is a way to make these priorities systemic, and to develop a strategy where they'll be found in *all* schools. That's where the school-reform movement now stands. If we don't find that strategy, the movement will lose its momentum."

The main ingredient of any reform strategy, as Boyer and many other educators know, is devising a feedback loop—some means of keeping track of the system's successes and

Dividing the Pot

Today's debt for yesterday's expenditures may prove very costly in the future.

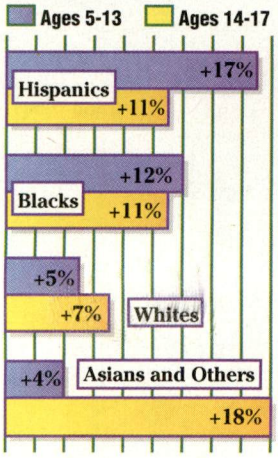


SOURCE: U.S. DEPT. OF COMMERCE, BUREAU OF THE CENSUS

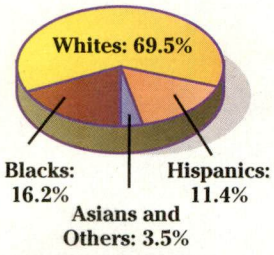
Changing Hues

The racial and ethnic makeup of schools is changing but whites remain a majority.

Population Increases, 1990-95

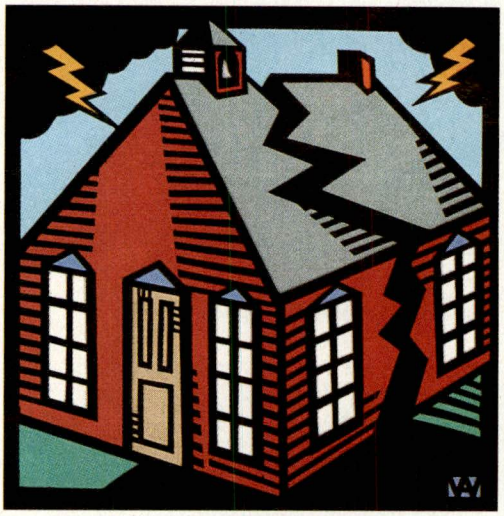


Percent of Student Population, 1995



PERCENTAGES DO NOT ADD UP TO 100% BECAUSE PERSONS OF ANY RACE MAY BE OF HISPANIC ORIGIN.
SOURCE: BUREAU OF THE CENSUS

failures, and then informing policymakers, the public and those within the system of the results. If there is hope for education reform in this country, it lies in this fact alone: over the past two decades, most educators have accepted the idea that the best way of evaluating the quality of American schools is by measuring their results.



Teach, Lead and Test

California's Honig is probably the most vocal proponent of public-school reform, and he is candid about the complexity of the task. The performance gap between U.S. kids and their peers in other countries is serious, he says, and closing it will require a significant upgrading of traditional American curricula. Like other defenders of the public system, however, Honig argues that much of the essential spadework on curriculum reform—in science, history and math, most notably—has already been done. In California and elsewhere, educators are following model science, history and math regimens that emphasize more challenging course content and more active learning by the student. The flip side is equally important: classroom teachers must de-emphasize lecture-style pedagogy, rote memorization and fact-oriented, textbook-driven course work.

The real task for school reformers, as Honig and Boyer say, is finding the best way to get the new pedagogy into hundreds of thousands of classrooms nationwide. That is a bureaucratic and managerial problem, and one that the public-school establishment has traditionally ignored or resolved by fiat—by issuing rules, curriculum and performance criteria, usually from the district office or the state department of education. The results at the school or classroom level, however, have been uneven at best, and that has led reformers like Honig and Joseph Fernandez, chancellor of New York City schools, to give teachers and principals a larger share of the system's decision-making power.

The jargon for this element of the reform agenda is "school-based management." (School-based management is an attempt to give more power to a principal and his faculty; it is unrelated to decentralization, which normally involves the creation of community school boards.) School-based management is an outgrowth of research showing that the key difference between good schools and bad schools is usually the principal's leadership ability. But the top-down tradition of public-school bureaucracies has turned too many principals into administrative paper-shufflers. The rise of teacher unionism, meanwhile, has made the relationship between principals, who are management, and faculty members more adversarial, and that has further weakened the cohesion of school staffs. School-based management can alleviate both problems, inducing principals to become more effective leaders and involving teachers in school decision-making.

The underlying goal is to get principals and teachers alike to take more responsibility for the educational life of the school—to be *accountable,* as professionals, for the well-being and growth of their students. But education is an enterprise whose most important products are intangible: knowledge, learned skills, the ability to reason. That is why accountability in public education is primarily based on achievement testing, and why many states and local school districts now have some form of test-based accountability system. Honig and many other education leaders see such accountability systems as a critical component of reform because testing would be the most effective way to determine whether the new pedagogy is making a difference. A federal testing program known as the National Assessment of Educational Progress, or NAEP, is the obvious tool for the job. Congress has long prohibited the release of NAEP scores on a state-by-state basis, and reformers want that to change. In 1988, Congress agreed to a pilot program that would allow state-by-state scores: 38 states are taking part in 1990. But the pilot program ends in 1992, and it is doubtful that Congress will extend it.

The Clock Is Running

The quest for improved accountability is now the primary battle of the school-reform movement nationwide. It is a complex, intensely political issue, and it already involves all the major players in public education: school boards, administrators, unions, governors, legislatures, Congress and the White House. If it is to succeed, it will require a national consensus on the goals of public education in America, and it will require specific standards for school achievement that educators and political officials can agree to. "For the first time, we're concerned about the national outcome," Boyer says. "We no longer believe that 83,000 schools, acting on their own, will make this a competitive nation. On the other hand, no one in the country wants the schools to be controlled from Washington, or even from the state capitals. So what we're trying to work out now is a unique balance between local control and national results."

Boyer, Honig and many other reformers believe all of this is manageable—but it will not happen unless the elected politicians who ultimately make education policy in this country are willing to seize the moment. The best way to do that, Boyer believes, is to create a national com-

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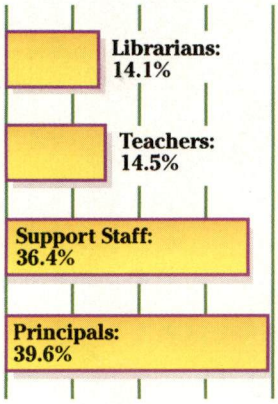
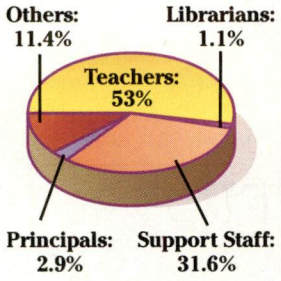
Percentage Increases of School Staff

1969-70 TO FALL 1988, TOTAL U.S.



Percent of Total Staff, 1988



SOURCE: U.S. DEPT. OF EDUCATION

mission to set achievement standards and monitor progress with some form of national testing program such as NAEP.

The White House and the National Governors' Association have been trying to do just that. But the process of forging political consensus has proved difficult, and there are still enormous obstacles to overcome. In July, after months of backstage wrangling, the NGA and Roger Porter, representing the president, agreed to form a "National Education Goals Panel" composed of six governors, four representatives of the Bush administration and four ranking House and Senate members, who would sit as nonvoting members. The panel's job would be to issue an annual "report card" to the nation that would be based in part on school test scores.

But the panel and its mission are highly unpopular on Capitol Hill. One reason for that hostility is the fact that the Bush administration has consistently attempted to shut Congress out of the reform debate. The other reason is that key members of the House and Senate have historically resisted the use of school test scores for accountability purposes. The reason is simple, and deeply political. Since test scores allow the public to make comparisons between "good" schools and "bad" schools, national scores could be used

to show that one state's public-school system is lagging behind another's. That's bad politics. The NGA is also concerned by the risks of political embarrassment. In a closed-door meeting, NGA members agreed that the goals panel would not compare states against one another, and that each state's test scores would be compared only to that state's performance in the past. There is an irony here: while politicians worry whether some states will be embarrassed, international comparisons show that other countries—Japan, for instance—make all the states look bad.

The goals panel can be fairly described as one of the stranger attempts at federal-state collaboration in modern times. It reports to no one, has no specified funding source and was created by a group (the NGA) that has no constitutional authority. Its structure reflects the Bush administration's distrust of Congress, the governors' distrust of Washington and the distrust between Republicans and Democrats. It is nothing like the prestigious national commission that Boyer had in mind—and the education establishment, which is already miffed by its exclusion from the Charlottesville summit, must have observed that it has been excluded from the panel as well.

Will the panel have the stature to do its job? No one knows. Will it prove to be the precursor to a more broadly based, congressionally mandated commission? Perhaps: Sen. Jeff Bingaman of New Mexico has filed such a bill and some members of the House are expressing cautious interest. But if the real task of any education commission is to push the nation's schools toward international parity by the end of the decade, time is running out rapidly indeed. The reformers, meanwhile, are increasingly skeptical that elected officials at any level of government have the gumption to do what needs to be done. "Bush could do it," Honig says. "He could pull people into a room and say, 'We've got to have accountability, let's work it out'." But the issues are "too complicated" for most politicians, Honig says, and unless there is quick progress on a national strategy, there will be "cynicism and distress among the educators" and a "missed opportunity" for the nation.

The politicized confusion is a powerful reminder of the reason why educators have traditionally mistrusted politicians. It could also serve as a pointed example for John Chubb and Terry M. Moe, whose recent book "Politics, Markets and America's Schools" *(The Brookings Institution, Washington, D.C.)* argues forcefully for replacing the nation's public-school system with entrepreneurial, market-oriented schooling. The real problem with public education, Chubb and Moe say, is democracy itself. "Under a system of democratic control, the public schools are governed by an enormous, far-flung constituency in which the interests of parents and students carry no special weight or status," they write. "[But] when markets prevail, parents and students are thrust onto center stage. . . ." Under attack from educators like Honig, Chubb and Moe have claimed they are not proposing privatization. But the market-driven schools they envision would be public in name only, and their real point is that the present system is incapable of meeting the nation's needs.

If they are right, and if privatization ultimately prevails, the nation may lose more than its public-school system. Despite the obvious difficulties of establishing a political consensus on school reform, public education will eventually respond to what is now believed to be the national interest: raising academic standards broadly and systematically, for all children. Privatization, on the other hand, would surely delay the attainment of that goal and might well make it impossible. If the idea of private-sector schooling is to reduce political control to a minimum, who would set national goals? Americans already have an education system that is manifestly resistant to change: why should they replace it with a nonsystem that is even less responsive to societal goals? These are serious questions for George Bush, for Congress and for the voters. How they are answered, over the next several years, will make a powerful difference to the nation in the 21st century. ■

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The Stingy Politics of HEAD START

If everyone adores Head Start why haven't George Bush and the Congress funded it fully?

BY STEVEN WALDMAN

Head Start has become the one Big Government social program everyone is allowed to like. It has been praised by George Bush, protected by Ronald Reagan, adored by Jimmy Carter; it was proudly fathered by Lyndon Johnson. Head Start puts poor 3- to 5-year-olds in preschool and hits all the right political buttons along the way. Who can object to a program that helps the most innocent (and adorable) of the poor, encourages preventive health care and gets parents more involved in their child's education?

Yet despite the universal adoration, only 48 percent of eligible children benefit from Head Start for even one year—and until this year no administration and no Congress has ever proposed fully funding it. Which leads to a difficult riddle: if the federal government so easily spends lots of money on stupid things, why hasn't it been able to spend enough on the one program that seems so meritorious?

Part of the answer lies in the program's origins and the special background of the man who helped create it in 1965. Sargent Shriver, the charismatic head of the War on Poverty under Johnson, had worked in the field of mental retardation with his wife, Eunice Kennedy, sister of John F. Kennedy. Shriver became convinced that if early intervention could work with retarded children it might also work for the economically disadvantaged. And to create the program he turned mostly to pediatricians and child psychologists—not public-school administrators. The result was a multidisciplinary approach that became a key to its ultimate success. Had it been set up as an extension of the public schools, Head Start might not have had the flexibility to emphasize parental involvement, health care and nutrition.

But being a community-based poverty effort instead of a school-based education program also had political costs. "If a program is run by a poverty agency for poor people it's not going to tap into the [middle class] power base" of school boards and PTAs, explains Jack Jennings, a staff member of the House Education and Labor Committee. Federal poverty programs, in fact, rarely fare as well in budget wars as those directed toward the middle class.

Head Start wasn't fully funded in the early years for another more obvious reason: professionals weren't sure it would work. At first, it served thousands of children for just eight weeks in the summer, severely limiting its impact. Program managers concluded that children benefit only noticeably from a full-year program—consisting of teaching, good meals and health care. "There was very little known about [stopping] poverty," Shriver says. Setting up a new program "was just like gambling in Las Vegas."

Some early signs weren't encouraging. A major study in 1969 by the Westinghouse Learning Corporation concluded that Head Start hadn't really improved the academic performance of disadvantaged children. Over the next few years bureaucratic skirmishes broke out, with policymakers in the federal education office arguing that the government shouldn't fund an early-education program without proven long-term benefits. But Caspar Weinberger, who was then secretary of Health, Education and Welfare, had become a fan of the program after visiting a few centers and concluding it provided a "substitute for what many homes lacked." Weinberger says the White House was too distracted by Watergate to question his department's budget.

By the mid-1970s evidence began accumulating that Head Start did increase the likelihood that a disadvantaged child would stay in school, seek preventive health care and avoid remedial classes. Later studies even said it reduced juvenile delinquency. Jimmy Carter, who became familiar with Head Start while on a local school board in Georgia, gave the program its biggest increases yet, hiking the budget almost 75 percent and adding 54,300 children to the rolls. Still, by the end of his term less than 30 percent of eligible kids participated in the program, even

JACQUES CHENET—NEWSWEEK

Youngsters who attend programs like the one at Cardinal Spellman Head Start Center in New York tend to stay in school longer

though the cost of enrolling all poor children would equal a few strategic bombers.

But just as the social-science consensus solidified, the political consensus evaporated. Reagan's antigovernment agenda left no room for major increases in federal education or poverty programs. For one year during his administration total Head Start funding actually declined. (The program was spared even sharper cuts because Weinberger, then the Defense secretary, came to Head Start's defense during a critical cabinet meeting in 1981.)

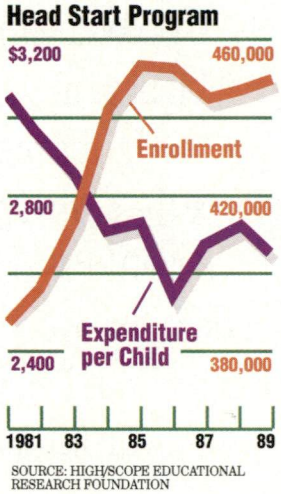
Key to Head Start's recent popularity has been support from the corporate world—which was noticeably absent during the previous 25 years. "The emphasis had been on [business's] rights without responsibility," says James Renier, CEO of Honeywell Corp., a major Head Start supporter. Now, he says, business leaders see "society coming down around us." Some executives have turned to Head Start in the belief that the economy will suffer without a much better educated work force. "The whole debate has shifted from what's good for children to how are we going to compete with the Japanese," says Edward Zigler, who helped create Head Start and is now a professor of psychology at Yale.

Now—incredible as it seems to Head Start veterans—the White House and Congress actually argue over who loves this program most. Bush's 1988 campaign proposal to boost Head Start triggered a budget bidding war that has already boosted funding by $317 million and enrollment by 97,500. This year Bush proposed adding $500 million—the largest single-year increase ever—which would allow 67 percent of 3- to 5-year-olds to get at least one year of Head Start before kindergarten. But Democrats say it doesn't go far enough because it helps many 4-year-olds but still leaves most 3-year-olds uncovered. Congress has pushed legislation to cover all needy children by hiking Head Start's budget to $7.6 billion by 1994—a fivefold increase. The bill does not specify where all that money will come from. The White House opposes that as "excessive" but hasn't said yet whether the president will veto the bill. "It's always been a Democratic program," says Zigler. "Bush pulled it to his bosom and the Democrats are pulling it back."

Zigler fears that Congress and the administration have become so obsessed with declaring the magic words "fully funded" that they'll neglect program quality. The Bush plan does little to raise the average staff salaries above $12,000 and the congressional plan would help only in the unlikely event that legislators actually appropriate the large sums of money they are now pledging. (In tough budget times Congress often "authorizes" one amount and then spends much less.) But given the staggering sizes of the proposals so far, Zigler is not complaining too much. Maybe, he says, this will turn out to be "one of the rare times politics is working in favor of children." Such moments, Zigler says, should be savored. ■

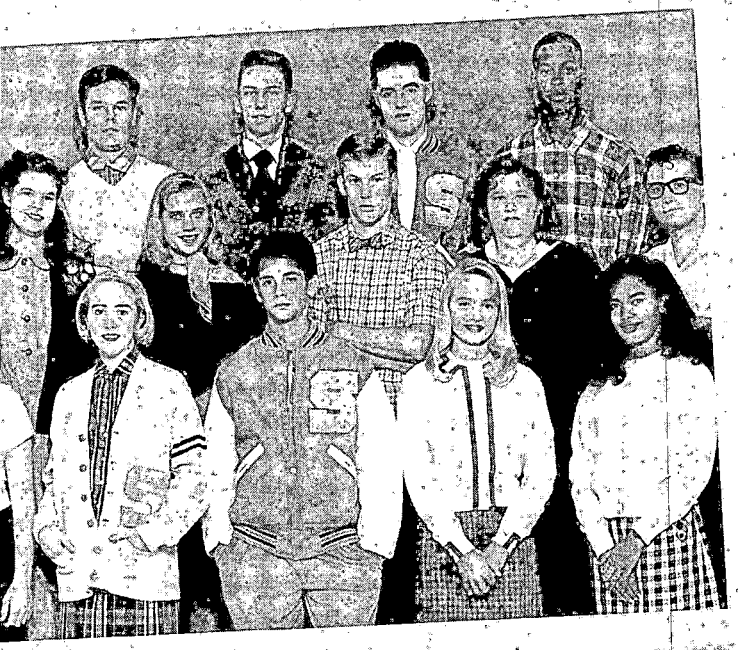
Shortchanged

Money for Head Start, as with other federal programs in the '80s, did not keep up with demand.



SOURCE: HIGH/SCOPE EDUCATIONAL RESEARCH FOUNDATION

Why the Class of '51 cares about the Class of '91.



It's simple. We know that without education, our children – and our country – cannot prosper. That's why AARP, the nonprofit association of Americans age 50 and over, is committed to the pursuit of excellence in education. For all ages.

That commitment is demonstrated daily by the thousands of AARP members who volunteer their time in schools across the country.

And by the member-volunteers who are helping other mid-life and older Americans achieve the self-respect and independence of literacy.

But AARP's commitment to education goes even further. We've been a strong advocate for education at both the state and federal levels since our founding 32 years ago by retired educator Ethel Percy Andrus.

If you're 50 or over and would like more information about AARP and our volunteer opportunities, just call the toll-free number.
Do it today. For our generation. And the next.

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WHO FOOTS THE BILL?

BOB DAEMMRICH

On the day Patricia graduated from high school, Demetrio Rodriguez earned the wages of perseverance

The only thing that can try a father's patience as much as a teenager is a lawsuit. For 22 years Demetrio Rodriguez and the determined parents of the Edgewood School District in San Antonio battled through the courts, trying to change the way in which Texas funds its public schools. In 1973, they reached the U.S. Supreme Court and came within one vote of fundamentally changing all of America's schools. They lost, but in a slightly different guise simply started over again in the courts of Texas.

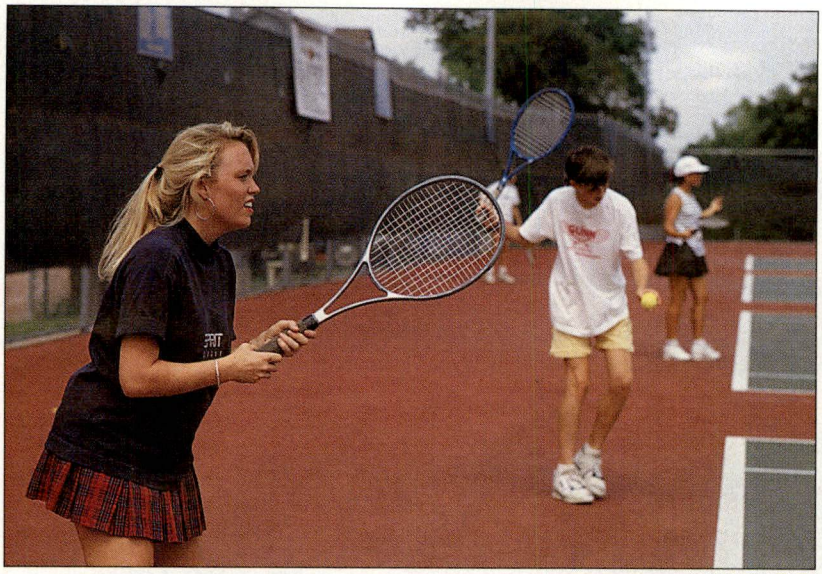
Last October they won a famous victory. The state Supreme Court ruled that the school funding for Edgewood was so inadequate and so unfair that it amounted to an unconstitutional denial of a child's right to an equal education. Then, nothing changed. Not until eight months later did the governor and state legislature finally agree on a new plan to help the state's sorriest schools. The change came too late for the Rodriguez household. The deal was cut on June 1, the same day that the last Rodriguez child, Patricia, was graduating from high school. It was a bittersweet moment for her father: "Maybe by the time my grandchildren go to school, they can take advantage of all we have fought for, for so long."

The operative phrase here is "so long." Over the last two decades, vast changes have been made in the way in which we pay for public schools. Ten state supreme courts—including Kentucky, New Jersey, Montana and Texas in the last 19 months alone—have forced their legislatures to remedy disparities between rich and poor districts. Thirteen cases are pending in other states, and lawyers are buckling on their armor in eight more. "The more states that fall, the more momentum," says Richard Salmon, education professor at Virginia Polytechnic Institute and State University. "Within the next decade, most states will have their systems ruled unconstitutional." The decisions will mean higher taxes, more taxes and more kinds of taxes. And in some cases it may force politicians to act as latter-day Robin Hoods, taking from richer school districts to help the poorer.

The balancing act is especially tough because it must be done state by state. Unlike many countries, the United States has always resisted any attempt to centralize education at the national level. The Rodriguez lawsuit began as a bold effort to set a national standard, at least for educational funding. The right to an

Over the last 20 years, vast changes have been made in the way in which we pay for schools

BY GINNY CARROLL



BOB DAEMMRICH

In affluent Alamo Heights, the schools have pools and tennis courts

The Rich Are Different

The list below shows the richest and the poorest communities (in order of wealth) in the United States with populations of more than 10,000. Their spending on education has far more to do with means than with needs.

Five Richest

COMMUNITY	SPENDING PER PUPIL
Winnetka, Ill.	**$8,308**
Hillsborough, Cal.	**$4,070**
Scarsdale, N.Y.	**$8,566**
Palm Beach, Fla.	**$4,443**
Lake Forest, Ill.	**$6,820**

Five Poorest

COMMUNITY	SPENDING PER PUPIL
Socorro, Texas	**$2,870**
Eagle Pass, Texas	**$3,333**
Donna, Texas	**$3,408**
Alamo, Texas	**$3,461**
Tallulah, La.	**$3,108**

SOURCE: CENSUS BUREAU AND STATE DEPARTMENTS OF EDUCATION

equal education, the argument went, was guaranteed by the federal Constitution. But in a landmark 1973 decision, by a bare 5-4 vote, the U.S. Supreme Court disagreed. With the federal route closed off, Rodriguez and plaintiffs in other suits turned to the courts and legislatures in their states.

Although legal authority for education rests with the states, historically, the bulk of money for public schools was raised through local property taxes. States abdicated much of the funding responsibility—and corresponding control—to local districts. That began to change in the wake of the civil-rights movement and the War on Poverty's focus on poor children. Parents in tax-poor districts like Edgewood began to sue for more money, and states took an increased interest in leveling the playing field.

The first wave of financing reform began in 1971 when California's Supreme Court declared unconstitutional its state's financing system. Throughout the decade, more than half the states changed their funding systems. And, by 1979, school districts were receiving more money from state aid than they raised locally. The increased state money came from higher taxes, either sales or income or both. As a rule, poorer districts received more state funds, but that didn't resolve the problem. Since a substantial amount of school financing—roughly 45 percent—is still generated locally, poorer districts can't keep up with wealthier areas. Edgewood, for example, with a high concentration of public housing and low property values, has a tax rate of about $1 per $100 property valuation while some oil-rich districts across Texas have a rate as cheap as eight cents—and still raise more for their schools.

In theory, at least, such disparities can be fixed by limiting the amount more affluent districts could spend. In the '70s, some communities reluctantly accepted the restrictions. Others didn't take kindly to the notion that they couldn't spend all they wanted on their children's education. "When government infringes on what people want to do, bright, creative people will figure out a way around it," says Forbis Jordan, education-finance expert at Arizona State University. Some communities have created private foundations to buy the niceties, from teacher aides to better computers. "If you move into some affluent suburbs around San Francisco, it is expected that you will make a substantial contribution to the school foundation," notes Jordan. And why not? It's conveniently tax-deductible. "They've raised school-fund raising to an art form."

The state efforts during the 1970s narrowed some of the gap between the districts. But before the plans could be fully funded in the early 1980s, attention shifted to education performance. "With the new concern for quality, people began to pay less attention to equality," notes Arthur Wise, president of the National Council for Accreditation of Teacher Education and a pioneer in the school-equity field. "Legislators began to slide back into their evil old ways. The object was to bring back money to each legislator's district. The wealthy again began to shoot ahead of the poor." Poorer districts were unable to grow much above minimum levels. Richer districts could spend well above the base amount. For example, the low in Illinois is $2,085 and the high $12,866.

The Texas Supreme Court noted last October that despite overall increases, the state's 100 wealthiest districts were spending an average of $7,233 per student while the 100 poorest districts were spending $2,978. In San Antonio, those statistics translate into Alamo Heights students learning on up-to-date computers while across town in Edgewood, pupils study computer science by "typing" on a keyboard sketched on paper. Patricia Rodriguez recalls trying to do classwork in an un-air-conditioned building in 98-degree heat. The richer district has swimming pools and tennis courts; at one Edgewood elementary school this spring, students played basketball with a plastic bucket for a goal.

James Vasquez, Edgewood's superintendent, can't envision a swimming pool in his future. His top priority is a better salary-and-benefits package to retain good teachers. Some of San Antonio's more affluent districts offer dental insurance and sabbaticals. By comparison, Edgewood pays $50 a month for teachers' hospital insurance, about one eighth the cost. "We recruit all over the country," says Vasquez. "A good teacher stays four or five years, until completely credentialed, then moves on. How can I blame them? They have families, too."

When complaints of similar disparities landed in the Kentucky Supreme Court's lap last year, the court responded aggressively, issuing by far the most sweeping of the 10 state rulings so far. Other courts have addressed school-financing systems alone. Kentucky declared the entire state education system unconstitutional. The General Assembly responded with an ambitious plan to inject $1.3 billion in additional money into schools by raising the sales tax from 5 percent to 6 percent and eliminating some deductions on state income-tax returns. The bill set a minimum spending level of $2,900 for all dis-

Another set of ratings PBS considers important.

You don't have to be in television to appreciate these numbers. Good grades and learning are something everybody cares about.

For more than two decades, Public Television has been providing kids and adults with a wide range of entertaining and educational programs. Like Sesame Street, Reading Rainbow, NOVA and The American Experience. As well as noncommercial educational programs that go to 29 million kids for use in the classroom. Every program encourages kids to have fun while they learn. And making learning fun is a very effective teaching aid.

Just ask their teachers. They'll tell you public television programs have a big impact on the early learning process. The kind of impact that translates into performance in school.

But primary education is just the beginning for PBS. Learning is a lifelong process. That's why we also offer literacy training and continuing professional education. And that's why colleges across the country give credit for watching PBS.

At PBS, we're committed to education in America.

This may not make us #1 in the Nielsen ratings, but it does make us #1 where it counts. In the classroom.

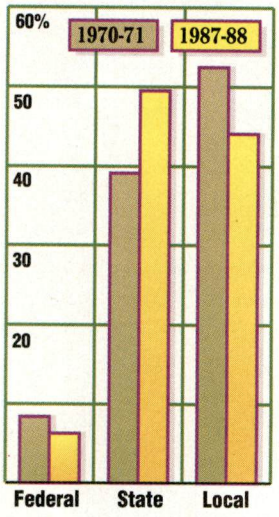
PBS

Committed to the educational power of television.

Deep Pockets

Most money for education aid is raised by states, with local districts a close second.

Source of School Funding



SOURCE: U.S. DEPT. OF EDUCATION

tricts—a $1,100 jump for the poorest districts. Most control of school operations was returned to local districts. In an effort to ensure accountability, Gov. Wallace Wilkinson championed a carrot-and-stick plan. Districts upgrading their performance and test scores will be rewarded. Those failing to improve will receive help from experts. If they still lag behind, the state may transfer students, dismiss teachers or close schools. Educators are closely watching Kentucky as a possible model for satisfying the competing demands of quality and equality.

In New Jersey, the state Supreme Court ruled last June that equal money was not necessarily equal opportunity; the state must be prepared to spend more on beleaguered districts because of their greater needs. Twenty-eight primarily urban districts with 25 percent of the state's students but with 71 percent of its minority students were singled out for special treatment. An attorney for the school districts called the victory important and unique because it recognized "the serious unmet needs of poor urban children."

The ruling boosted Democratic Gov. Jim Florio's radical school-reform scheme, proposed only days earlier. The plan not only injects money into low-income and middle-class districts but also gradually decreases the state aid affluent districts can receive. To finance it, Florio called for a 1 percent increase in the sales tax, applied to a broader range of goods and services. Sales taxes are considered the most regressive because of the impact on lower-income people. But Florio's plan cut both ways. It also doubled the income tax for the most affluent, single people with incomes above $75,000 a year and couples with incomes over $150,000. His plan, which also requires wealthy districts to help subsidize poorer ones, has been enormously controversial. Florio's popularity in polls has dropped sharply but he has stuck to his plan and is now actively defending it. "Like all good investments," runs his central theme, "these will take a little time."

The political battles have also been fierce in Texas, one of the few remaining states without an income tax, and likely to remain so in this election year. Retiring Gov. Bill Clements called four special legislative sessions to devise a new aid plan he could accept. At first, the Democratic-controlled legislature wanted to plow $1.2 billion into poor schools without penalizing the rich. Clements insisted on no new taxes, saying that any increase without fundamental reform would just be throwing good money after bad. After Clements vetoed two compromise packages, a court-appointed special master was poised to take control of the school system. Finally Clements and the legislature agreed to give $550 million to poorer schools next year by raising the sales tax a quarter of a cent and increasing "sin" taxes on tobacco and alcohol. The compromise satisfied nobody but allowed schools to begin

planning for the fall. The ink was scarcely dry when lawyers for the poorer districts asked the courts to force the legislature to draw a different long-term plan. Over the summer the courts allowed the plan to stand for one year but have not yet ruled on future requirements.

Some educators believe that the reforms compelled by this year's court rulings, while important, do not go far enough. Fred G. Burke, who was New Jersey's school superintendent when its lawsuit was filed, suggests that a national revenue collection and redistribution system may eventually be necessary. "Even more serious than the inequities being talked about today are those between Mississippi and Connecticut, between Alabama and Wyoming," he says. "People in New York have a legitimate interest in what happens to a child in Alabama because these children are not going to stay there. They're going to come to New York or go to California and be part of the work force. We're going to have to count on them to hold jobs." Federal funds account for only 6 percent of school budgets on average. The Bush administration opposes any expansion of that role.

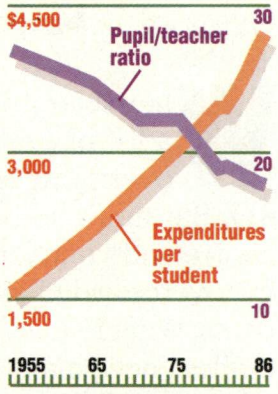
But Congressman Gus Hawkins of California, chairman of the House Education and Labor Committee, hopes to open a national debate this year on the equality issue. Hawkins has introduced a bill that would deny federal funds to any state with wide budget disparities between poor and rich districts. The legislation would require the U.S. secretary of Education to channel the dollars directly to poorer districts, bypassing the offending state. Another provision would require the secretary to try to correct disparities between state funding levels.

If such plans seem draconian, so be it, says Burke. He and other educators argue that extreme reforms are necessary to meet an extreme emergency. "We're in a period of enormous demographic change," he notes. "Somewhere early in the next century our minorities will become the majority of students in school. The real guts of this country's future has to come from them."

The nation has responded in past emergencies with whatever money was required, notes Charles Slater, Alamo Heights's superintendent. "We went and fought World War II when we were in a depression," he says. "How did we do that? One day people were in bread lines; the next, they were out building planes." When the war turned cold and an arms buildup was called for, "we managed to find the money." Such ideas may indeed have come too late for Demetrio Rodriguez's family. But on graduation day, ranking 21st out of a class of 210, Patricia Rodriguez echoed her father's mingled sadness and hope. She plans after college graduation to teach in the Edgewood school system. "Considering what we had to work with, I did the best I could," she said. "I know I missed some things. I hope my students won't have to." ■

Spending Money

In constant dollars, education expenditures have markedly increased over three decades.



SOURCE: U.S. DEPT. OF EDUCATION, NATL. CENTER FOR EDUCATION STATISTICS

State by STATE

When school doors open this fall around the country, educators face a list of problems as long and perplexing as a final in trig. The overriding issue in nearly every school district is finance (page 81). But more specifically, administrators are grappling with parental choice and voucher systems, curriculum revision, teacher accountability, overcrowded classrooms and the special problems of minority students. What follows is a state-by-state roundup of sticking points—some of them new, many of them familiar—and, in some cases, reforms that educators plan to institute in the months ahead:

BY JAMES N. BAKER

ALABAMA
The reform-driven Plan for Excellence has improved the curriculum, but 30 poor school districts are banding together to sue the state for funding inequities. Alabama ranks 45th in per pupil expenditures.

ALASKA
Because standardized test scores are disappointing, the legislature mandated "report cards"—from schools to taxpayers. Special targets are rural districts with many Native American students.

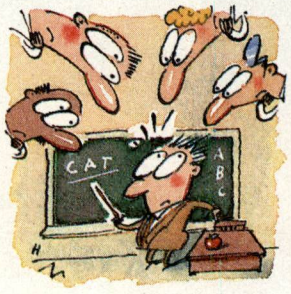
ARIZONA
Since many minority children start to fall behind from their first day in kindergarten, Arizona has designed a new program to prepare 4-year-olds for school. Its focus: basic English.

ARKANSAS
School reform is a hot-button issue in this year's governor's race. Incumbent Bill Clinton has made schools a top priority and initiated a number of reforms. But his GOP opponent points out that Arkansas still ranks near the bottom in many categories.

CALIFORNIA
Where will they find enough classrooms? Officials estimate that between 1990 and 1995 school enrollment in the nation's largest state will jump by 212,000 students—every year. Current enrollment: 4.8 million.

COLORADO
This year the legislature empowered Colorado parents to decide where their children will go to school, as long as the choice is within the family's home district. A voucher plan is on the drawing boards.

CONNECTICUT
The state's teachers—the second highest paid in the nation—face a tough new set of standards, including special training programs, comprehensive examinations and individual evaluations.



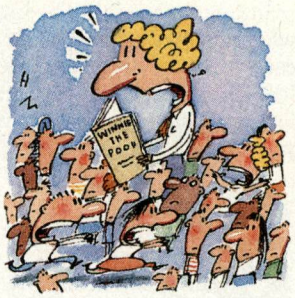
DELAWARE
In a move toward more school-based management, individual districts can now apply to the state for grants to restructure curriculum or administrative policies.

DISTRICT OF COLUMBIA
With a consistently high dropout rate, enrollment has been declining markedly, and the Board of Education may be forced to close or consolidate several schools.

FLORIDA
Like California, the students just keep rolling in—at an increase of 88,600 a year. The state needs 3,000 more classrooms; districts don't have the money.

GEORGIA
Hoping to curtail one of the nation's worst dropout rates, Georgia is investing $3.75 million in hiring counselors for elementary and middle schools.

HAWAII
Educators in the islands are phasing in school- and community-based management. By 1991, more than half of Hawaii's schools will be freer to hire staff, choose textbooks and determine curriculum.



IDAHO
To give more attention to beginners, the state wants to reduce class sizes in kindergarten through third grade. The targeted ratio: 18 students per teacher.

ILLINOIS
Chicago's schools have been called the nation's worst. This fall for the first full year, budget and curriculum control will shift to local councils of parents, teachers and community leaders.

INDIANA
For the second year, Indiana will distribute $10 million among schools that show improvement on state tests. Schools can use the money as they wish—except for athletics and teachers' salaries.

IOWA
Open enrollment, in which parents can send their children to any public school they choose, begins this fall. So far, less than 1 percent of Iowa's nearly half a million students have applied.

KANSAS
To boost math scores, Kansas has developed a seven-part program. It will encourage teachers to not just assign problems to be solved, but to prod students to discuss math.

KENTUCKY
The first day of school this fall marks the beginning of the state's sweeping school-finance reform program designed to breach the gap between rich and poor districts.

LOUISIANA
In a state that is extremely conservative but has a serious teen-pregnancy problem, the state legislature agreed to sex-education courses in grades 3 to 7—but only in New Orleans.

ILLUSTRATIONS BY HAL MAYFORTH

MAINE
Maine plans to experiment with a high-school schedule that's built around fewer but longer class periods devoted to interdisciplinary subject areas.

MARYLAND
At the state's expense, 116 teachers were sent back to school this summer to bone up on science and math. The state is also considering making kindergarten attendance mandatory.

MASSACHUSETTS
Officials hope to find funds to rescind some of the 9,000 pink slips teachers received last spring in a statewide budget crunch. A November ballot initiative could chop $2 billion more from the state budget.

MICHIGAN
Under an $18 million program that will be financed by special "technology" bonds, Michigan plans to put 8,000 computers in classrooms across the state this fall.

MINNESOTA
Could a state with a graduation rate of 91 percent really have problems? In fact, scores on college-entrance exams are slipping, forcing worried educators to look for solutions.

MISSISSIPPI
One of the nation's poorest states has an ambitious school-reform package ready to go, but the new policies are now stalled in squabbles over funding.

MISSOURI
As a substitute for separate remedial classes, Missouri is expanding its program in which slower students are left in regular classes but tutored by a consortium of teachers and parents to speed up their progress.

MONTANA
As in Alaska, educators in Montana plan to tackle the problem of Native American youngsters from the state's seven reservations who have an inordinately high dropout rate and rarely go to college.

NEBRASKA
To reach remote rural schools, the state is experimenting with special telephone lines to provide instruction in foreign languages and advanced math and science.

NEVADA
Educators have found the ranks of mentally and physically handicapped youngsters are growing; they're hard pressed to find effective programs to serve them.

NEW HAMPSHIRE
Thank goodness it's such a small state. A number of educators have the utopian idea of cutting the high-school dropout rate from 25 percent to zero.

NEW JERSEY
With an "academic bankruptcy" law on the books, the state has begun to take over local districts determined to have defaulted on their responsibility to educate students.

NEW MEXICO
The minority population in the schools has reached 52 percent, and New Mexico continues to expand its bilingual-instruction program.

NEW YORK
Since the state's rapidly growing minority population is a mix of blacks, Hispanics and Asians, educators plan to develop a multicultural social-studies curriculum.

NORTH CAROLINA
A bitter political battle over taxes has dealt a blow to North Carolina's nearly $1 billion, eight-year plan to beef up the teaching staff and overhaul the curriculum.

NORTH DAKOTA
With enrollment falling off, the state has been offering rural districts $20,000 incentive grants to develop resource-sharing programs among their schools.

OHIO
By some estimates, 14 percent of Cleveland students are promoted just because they are too old to repeat a grade. Educators want to create alternative programs for "overage" youngsters.

OKLAHOMA
A $223 million tax increase passed last spring means there will be fewer overcrowded classrooms this fall. And starting in 1992, Oklahoma will require a competency test for high-school graduation.

OREGON
Facing an overcrowding crisis in the next few years, Oregon is considering more portable buildings and putting some students on shifts. A proposal for a voucher plan will be on the ballot this fall.

PENNSYLVANIA
State officials want to find alternatives to standardized tests in reading and math and creative ways to meet the individual needs of preschoolers from all kinds of backgrounds.

RHODE ISLAND
The nation's smallest state plans to expand its "extra help" literacy program for youngsters in grade 4. The ambitious program includes peer coaching and team teaching.

SOUTH CAROLINA
Wanted: $1 billion. Existing buildings are in bad repair, and South Carolina will need new classrooms to keep up with an expected 10 percent population increase over the next 10 years.

SOUTH DAKOTA
Attention, Montana. A principal on the Lower Brule Indian Reservation has developed a five-point plan that seems to be keeping Native Americans in school.

TENNESSEE
Protesting that educational funding favors more affluent communities, more than half of Tennessee's 140 school districts are jointly suing the state to gain financial equity.

TEXAS
The eyes of Texas will be on the State Board of Education this fall. At issue: pressure from fundamentalists to water down science texts' references to evolution.

UTAH
School officials, concerned that high-school seniors not headed for college are ill equipped to find a job, hope to develop more vocational programs.

VERMONT
Vermont has developed an individual "portfolio" program, largely made up of long-term projects, to use for year-end student assessments in grades 4 and 8.

VIRGINIA
In order to enter public high school, students now have to pass a basic-skills test. They can take it as early as sixth grade, and, if they fail, repeat it through middle school.

WASHINGTON
Gov. Booth Gardner wants the legislature to vote enough funds to make preschool available to all the state's 15,000 disadvantaged 4-year-olds.

WEST VIRGINIA
This fall, school officials in one of the most economically troubled states hope to have four personal computers in every kindergarten and first-grade classroom.

WISCONSIN
Under the nation's first voucher plan, about 500 low-income students in Milwaukee will attend private, nonsectarian schools—and the state will pay participating schools $2,500 per student.

WYOMING
Starting this year, the state requires that students master 17 areas of knowledge from language arts to computer programming before they can graduate from high school.

A Bag of Possibles and Other Matters of the Mind

DAN LAMONT—MATRIX

BY ROBERT FULGHUM

1 Since my apotheosis as Captain Kindergarten, I have been a frequent guest in schools, most often invited by kindergartens and colleges. The environments differ only in scale. In the beginners' classroom and on the university campuses the same opportunities and facilities exist. Tools for reading and writing and scientific experimentation are there—books and paper, labs and workboxes—and those things necessary for the arts—paint, music, costumes, room to dance—likewise available. In kindergarten, however, the resources are in one room, with access for all. In college, the resources are in separate buildings, with limited availability. But the most radical difference is in the self-image of the students.

Ask kindergartners how many can draw—and all hands shoot up. Yes, of course we draw—all of us. What can you draw? Anything! How about a dog eating a firetruck in a jungle? Sure! How big you want it?

How many of you can sing? All hands. Of course we sing! What can you sing? Anything. What if you don't know the words? No problem, we can make them up. Let's sing! Now? Why not!

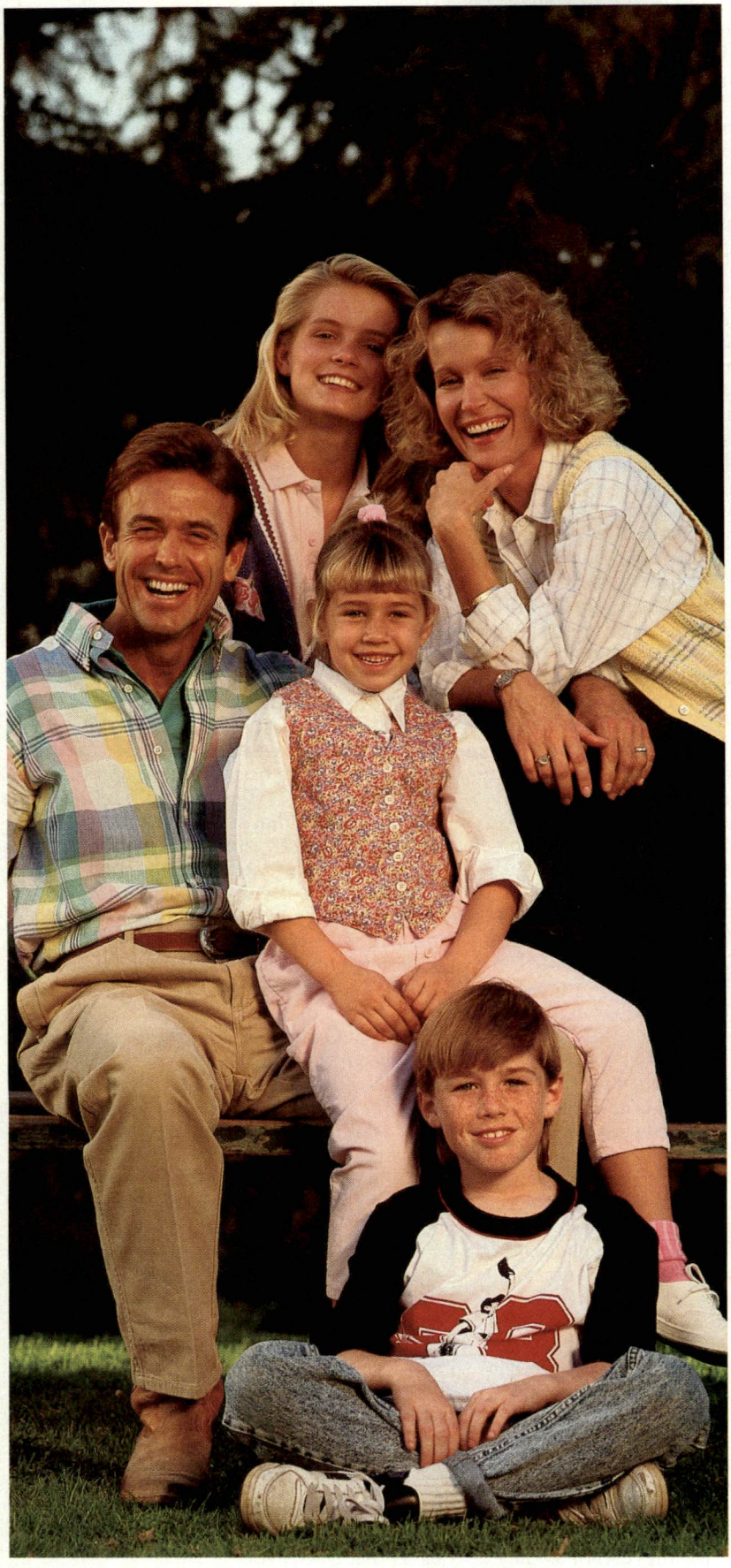
How many of you dance? Unanimous again. What kind of music do you like to dance to? Any kind! Let's dance! Now? Sure, why not?

Do you like to act in plays? Yes! Do you play musical instruments? Yes! Do you write poetry? Yes! Can you read and write and count? Soon! We're learning that stuff now.

Their answer is Yes! Again and again and again, Yes! The children are large, infinite and eager. Everything is possible.

Try those same questions on a college audi-

Discontent and ferment are signs that the fires of education are burning well



They're outwardly mobile, love music and drive a Ford JBL Audio System.

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AUDIO SYSTEMS

The Sound of Quality

Simply put, society puts its best foot forward in kindergarten and first grade

ence. Only a few of the students will raise their hands when asked if they draw or dance or sing or paint or act or play an instrument. Not infrequently, those who do raise their hands will want to qualify their responses—I only play piano, I only draw horses, I only dance to rock and roll, I only sing in the shower.

College students will tell you they do not have talent, are not majoring in art or have not done any of these things since about third grade. Or worse, that they are embarrassed for others to see them sing or dance or act.

What went wrong between kindergarten and college? What happened to Yes! of course I can?

2 As I write I am still feeling exuberant from an encounter with the cast of Richard Wagner's opera "Die Walküre." Last night I watched a stirring performance of this classic drama. This morning I sat onstage with the cast and discussed just how the production happens. I especially wanted to know how they went about learning their parts—what strategies they used to commit all to memory.

The members of the cast are students in kindergarten and first grade. They did indeed perform "Die Walküre"—words, music, dance, costumes, scenery, the works. Next year they will do "Siegfried"—already in production—as part of a run through the entire "Ring" cycle. And no, this is not a special school of the performing arts for gifted children. It's the Spruce Street School in Seattle, Wash.

They are performing Wagner because they are not yet old enough to know they cannot. And they understand the opera because they make up stories and songs just like it out of their own lives.

To answer the question, "How do children learn?", I did something schools never do: I asked children. Because they know. They have not been hanging in a closet somewhere for six years waiting for school to begin so they could learn. Half their mental capacity has developed before they come to the schoolhouse door. I repeat for emphasis—they know how to learn.

Brünnhilde, still wearing her helmet, explains that it works best for her if she learns her lines in small sections and then pays careful attention to the first three words of a section and then learns those. In case she needs prompting, just a word or two will set off a chain reaction in her mind. She also switches around and sings the talking words and talks the singing words, doing all of this while she moves around instead of sitting still. Siegfried and Wotan have other methods of their own. All seem to know. All have different ways.

The skeptical author is thinking maybe the children are just doing a trained-seal act—I mean Wagner is heavy stuff—surely they don't really get it. So I ask the young actress playing Brünnhilde to tell me how her character fits into the story. "Do you know about Little Red Riding Hood?" she asks. Yes. "Well it's kind of like that—there's trouble out there in the world for the girl and her grandmother and the wolf and everybody." And then, so I will understand better, she compared the role to that of Lady Macbeth. Yes. She knows about that, too. The school did "Macbeth" last fall. She also talks about "The Hobbit" and "Star Wars" and a radio play the class is writing that is a spoof on all this—"MacDude." "Do you understand?" she asks with concern. I do. And so does she.

(By the way, the only significant deviation from the script came at the very end of "Die Walküre," where Wotan is supposed to take his sleeping daughter in his arms and kiss her eyelids. No way. Art may have its standards, but no 7-year-old boy is going to kiss a girl on her eyelids or anywhere else. There are limits.)

3 We are sent to school to be civilized and socialized. Why? Because we believe that knowledge is better than ignorance and that what is good for the group and what is good for the individual are intertwined.

As a nation we have concluded that it is better for us all if all of us go to school.

Thomas Jefferson first proposed, in 1779 to the Virginia Legislature, that all children be educated at public expense, but it was not until well into the next century that such a plan was put into place, and even then without enthusiasm on the part of the public. The idea was resisted by a substantial part of the population—sometimes with armed force. As late as the 1880s the law had to be enforced in some towns by militia who marched children to school under guard.

In an aspiring nation in the age of the Industrial Revolution, it became a matter of political economy to have educated citizens.

We still believe that it is important to be sent out of the home into the world to be initiated into society. We call that ritual ground "School." And when we get there we are required to learn the rules and regulations of community, to acquire certain skills and to learn something of human values and the long history of the reaching for light and dignity.

Society puts its best foot forward in kindergarten and first grade.

4 Want to have an exciting conversation about education? Don't ask someone what they think of the schools. Never. Ask instead that they tell you about the best teacher they ever had. Ask instead that they tell you about the best learning experience they ever had. Ask them if they wish they could sing and dance and draw. Or ask what they are learning now or would like to learn soon. And ask them how they go about learning something. And then ask them if they were to design an educational system to support what they've just said, what would it be like.

5 There is no such thing as "the" human brain—no generic brain. What we know, how we know it, our strategies for learning and our idiosyncratic ways of being alive, differ significantly from person to person. The implications of this for education are almost overwhelming.

There are as many ways to learn something as there are learners.

There is no one way to be human.

IS AMERICA'S WORK FORCE BANKRUPT?

Many business leaders believe the answer to that question is a frightening "Yes". They perceive an absence of commitment, a lack of maturity and the inability to absorb training to be an alarming trend in much of today's youth.

But perception isn't necessarily reality. In fact, we would argue the reverse may be true if the work force in question were peopled with those who have served in the Army.

The Army enlists quality people.

The Army believes America's youth belong in school. Our recruiters are strong advocates for good study and high school completion. We believe it pays off.

Over 90 percent of new recruits are high school graduates. Over two thirds score above average on the Armed Forces Qualification Test, a standardized aptitude test.

Soldiers can then capitalize on the nation's largest technical training organization. With 18 major technical training complexes, the Army trains young adults in over 300 specialties, many that involve high-tech equipment and state of the art technology. It is a system that graduates over 180,000 men and women each year.

Transferrable skills.

Researchers of Ohio State University found that 50 percent of the people recently separated from the Army had transferred many of the skills acquired in the military to their civilian employment. This compares favorably to a 48 percent rate of transfer by graduates of business schools and vocational/technical colleges.

All soldiers, no matter what their speciality, develop traits such as maturity, self-discipline and motivation...key attributes that employers seek.

As a matter of fact, a survey of hundreds of employers, many from Fortune 500 companies, clearly shows they value the attributes soldiers develop in the Army and will hire young people who are reliable, disciplined and have responsible attitudes toward work.

Training that pays off.

A Temple University Center for Labor and Human Resources study, using data collected over 19 years, found that military service provides an economic advantage in civilian life.

A partnership with educators.

Financial benefits earned in the Army enable many to pursue college or further technical education. More than 400,000 are doing so today. In 1988, New York State residents, alone, received over $28 million in educational benefits through Army service.

It is incumbent upon business leaders, educators and all Americans to support Army recruiting. The Army will continue to recruit and train high-quality young men and women because they are key to maintaining America's defense. And the Army will continue to return to the civilian sector capable, mature, highly-motivated young people, ready to Be All They Can Be as part of America's work force.

There are as many ways to learn as there are learners. This makes the teacher's task impossible.

We achieve community with metaphors and consensus.

And this makes a teacher's task impossible.

Unless the teacher sees the task not as one of conveying prescribed information, but a way of empowering the student to continue doing what he came in the door doing pretty well—learning for himself. To do any less is to diminish his self-esteem.

6 As a teacher of drawing and painting and philosophy in a senior high school for 20 years, I offered a course the students called "drawing for turkeys." The prerequisites for the course, as described in the school catalog: "To qualify, you must think you have no talent or skill in drawing and wish otherwise, hoping that the art fairy will look you up someday. Further, you must be able to tie your shoelaces, write your name and be able to find your way to the studio regularly." The classes were always oversubscribed.

Every student learned to draw competently.

Because drawing is a matter of skill. Skills can be acquired with practice.

Because drawing is a matter of looking closely at something—carefully enough to translate what is seen three dimensionally into the language of two-dimensional line and shape and shadow.

To draw is to look. To look is to see. To see is to have vision. To have vision is to understand. To understand is to know. To know is to become. To become is to live.

And to the student who would acknowledge that she had acquired skills but still could not draw because she had no imagination, I would only say: "Tell me about your dreams at night." And she would—at length. And then I would ask, "Who is doing that inside your head?"

Now if drawing requires careful observation, the acquisition of skill, the application of visionary creative imagination—and that's exactly what graduate school, business, industry, government and these times need—then there is some reason to believe that the arts . . . etc. You take it from there.

After sharing this thinking with parents, they would say they wished they could do what their kids were doing in the drawing class (because they still half believed that all I had done was uncover their particular child's hidden talents). So I would say come on to class. And we had night school for parents. And all the parents (except one) learned to draw competently, taking their drawings home to put in that place of artistic honor—the refrigerator door. (As for the one failure, she taught me humility and pushed my teaching skills and her learning skills as far as possible in the process. She's a good photographer now, though. She sees very well.)

7 On the occasion of his graduation from engineering college this June (*cum laude,* thank you very much), I gave my number-two son a gift of a "possible bag."

The frontiersmen who first entered the American West were a long way from the resources of civilization for long periods of time. No matter what gear and supplies they started out with, they knew that sooner or later these would run out and they would have to rely on essentials. These essentials they called their "possibles"—with these items they could survive, even prevail, against all odds. In small leather bags strung around their necks they carried a brass case containing flint and steel and tinder to make fire. A knife on their belt, powder and shot and a gun completed their possibles.

But many survived when all these items were lost or stolen.

Because their real possibles were contained in a skin bag carried just behind their eyeballs. The lore of the wilderness won by experience, imagination, courage, dreams, self-confidence—these were what really armed them when all else failed.

I gave my son a replica of the frontiersmen's possibles bag to remind him of this spirit.

In a sheepskin sack I placed flint and steel and tinder that he might make his own fire when necessary; a Swiss Army knife—the biggest one with the most tools; a small lacquer box that contained a wishbone from a Thanksgiving turkey—my luck; a small, velvet pouch containing a tiny bronze statue of Buddha; a Cuban cigar in an aluminum tube; and a miniature bottle of Wild Turkey whisky in case he wants to bite a snake or vice versa. His engineering degree simply attests that he has come home from an adventure in the wilderness.

The possibles bag inside his head is what took him there, brought him back and sends him forth again and again and again.

8 I kept a journal during the years I taught. And in time I boiled my experience down into some one-line statements that became a personal litany to be said when school began and when school was not going well. You will have found some of these notions already expressed at length in the sections above; for emphasis, I restate them here:

Learning is taking place at all times in all circumstances for every person.

There are as many ways to learn something as there are people.

There is no one way to learn anything—learn how you learn—help the student do likewise.

There is nothing everyone must know.

All I have to do is accept the consequences of what I do not know.

There is no one way to be human.

Imagination is more important than information.

The quality of education depends more on what's going on at home than in the school. And more on what is going on in the student than what is going on in the teacher.

In learning, don't ask for food; ask for farming lessons. In teaching, vice versa.

If nobody learns as much as the teacher, then turn students into teachers.

Every student has something important to teach the teacher.

Discontent and ferment are signs the fires of education are burning well.

In education, look for trouble. If you can't find any, make some. ■


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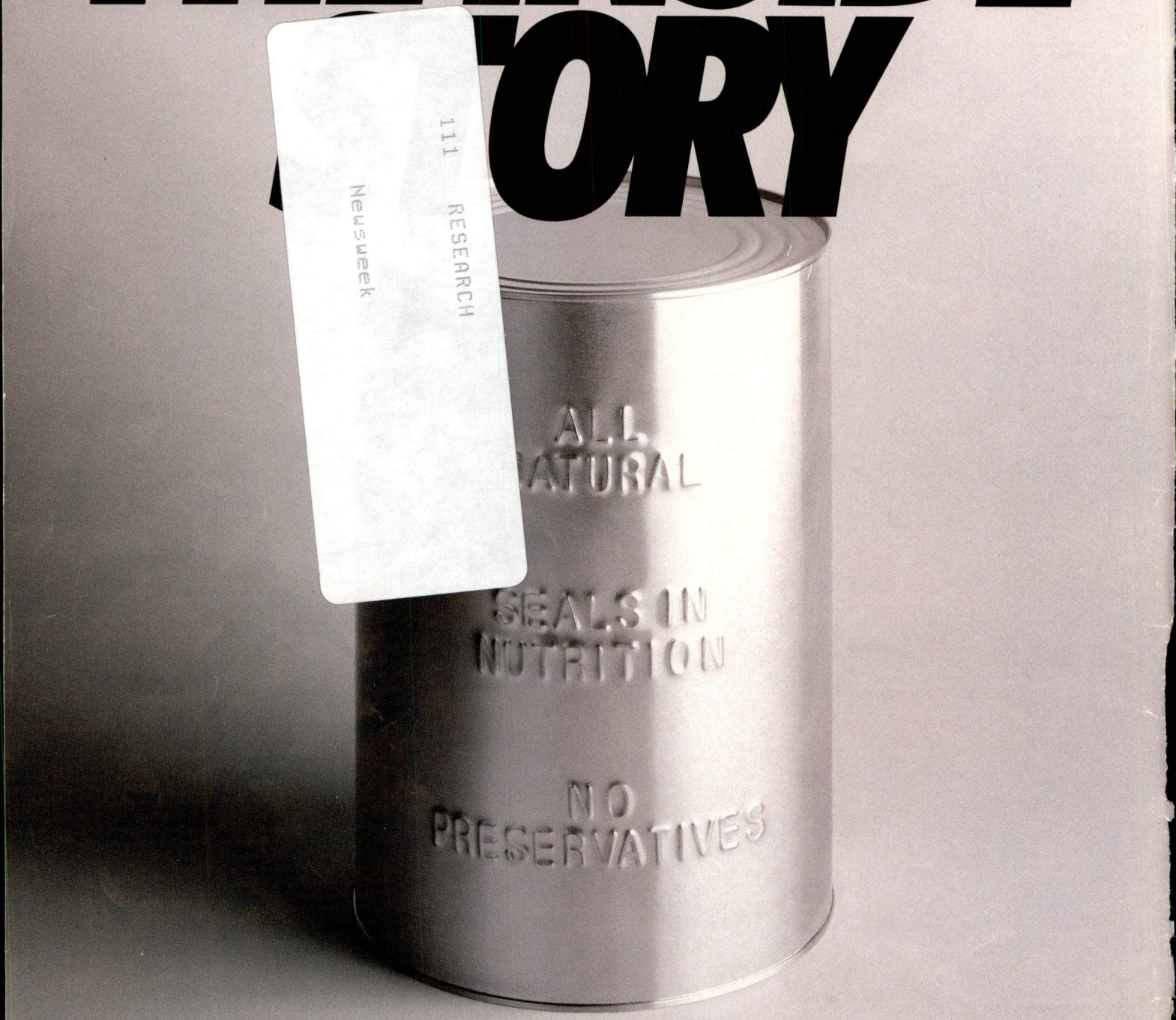
THE INSIDE STORY



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