

As a research mathematician who has spent the past six years at the National Science Foundation (NSF) working to improve mathematics and science education in our K-12 schools nationwide, I was surprised to read in pages of the *Wall Street Journal* that, in some quarters, the National Council of Teachers of Mathematics' (NCTM) standards are being disparaged as "fuzzy math," and the antithesis of clear thinking. (*President Clinton's Mandate for Fuzzy Math, Lynne V. Cheney, The Wall Street Journal, June 11, 1997.*)

The tone of that piece, and some of its inaccuracies, demonstrate the need to clarify what the standards are, and are not.

But first, I should note that, as a nation, we should be heartened by the recent strong showing made by U.S. fourth-graders on the Third International Mathematics and Science Study (TIMSS). Though not yet "First in the World," we are gaining rapidly.

The most comprehensive international assessment of its kind to date, TIMSS shows that U.S. nine-year-olds are grouped in a small cohort of nations ranked second in the world in science and sixth in the world in math. TIMSS also shows dramatic improvement in elementary math achievement since the last international test in 1991.

But neither I nor many of my colleagues find these results surprising. The U.S. ranking is a direct result of changes in math and science education that began in 1989, with the release of the NCTM *Content and Evaluation Standards*. This continues today at NSF and elsewhere with the development of instructional materials and teacher professional development programs based on the standards.

-More-

It is true that the standards contain no specific curriculums, instructional materials, examples of classroom practice, or assessments. That is because they aren't intended to. But they do provide a solid framework for schools and teachers of what children should know and be able to do in math at various grade levels.

The standards emphasize the need for students to master early the basic skills of addition, subtraction, multiplication, and division. The standards differ from "traditional" curriculums because they also insist that student should not be limited to learning only those "basic skills."

What the standards require is that all our children—not just those labeled the "best and brightest"-- should be provided with the opportunity to learn math--as opposed to solely rote arithmetic; to be able to apply what they've learned to solve problems they might well encounter in the world outside of classroom; and gain an understanding of math that survives after graduation, something that rote learning generally has not yet succeeded in doing.

The standards do encourage the use of calculators and computers, but not as a substitute for learning.

Just as many of us balance our checkbooks by hand, and use a calculator to check our work, so, too, can students use a calculator to check their work. Professional statisticians once computed such complex variables as coefficients of correlation by hand; none would do so today. The use of calculators requires a strong grasp of the 'basics' in.

order to estimate a correct answer and verify whether an answer is reasonable.

Skilled teachers know when to use calculators in classrooms and when not to; no one advocates the use of calculators to the exclusion of other methods.

But computation, while important, is only one aspect of mathematics. The real challenge in teaching meaningful math is to provide students with enough knowledge and skill so that they can reason, solve problems, and communicate their solutions to others.

Mathematicians think about a problem, devise partial solutions, talk with their colleagues, work some more, talk some more, and finally finish the solution and share it with others to be critiqued. This is collaborative work at its best, but in no way does it discount the individual who eventually solves the problem. In U.S. schools, math too often is synonymous with memorization, rather than thinking. We know from research that collaborative learning is one way of encouraging the active learning of all students. We know from business and industry that people need to be able to work in groups, share ideas, challenge each other, and build on each other's work.

The standards attempt to emulate this approach in the classroom. Part of the criticism of the standards, I believe, stems from the reality that adults tend to believe, whether they ought to or not, and no matter how long ago they graduated, that the way they were taught is the "right way to learn."

However, William Schmidt, an NSF-funded TIMSS researcher at Michigan State University who has written a comparison of eighth grade curriculums in the U.S. and abroad, points out that what makes the U.S. middle-school inferior to those of high-scoring nations is not that U.S. schools give short shrift to the basic computational skills, it's that what other countries consider "basic learning" involves far more than just elementary computation. Eighth-graders in Japan, Korea, and Singapore are studying elements of geometry and algebra, while their counterparts in the U.S. often don't get beyond basic arithmetic because the existing U.S. curriculum stresses endless repetition of these skills.

Since the NCTM Standards have begun to be adopted in U.S. schools, elementary school math lessons have not only begun more closely to approximate the methods of mathematicians, but also the ways in which high-performing nations teach math.

Meanwhile, we need to take note of something even more important; while U.S. fourth graders did well on TIMSS, there is a marked drop off in student performance on TIMSS at the eighth-grade level.

This dramatic difference in performance should tell us two things:

First that standards-based teaching has begun to make a difference in elementary school achievement scores that we see in the improved scores since 1991.

Second, that we need to now concentrate on vigorous implementation of quality math instruction in middle schools, because too few schools systems have done.

President Clinton is correct in centering attention on middle-school math, not just because it is a transition point to high school, but also because middle-school teachers need even more help to understand the mathematics and cognitive demands that mathematics requires at this level.

Learning mathematics to high standards by eighth grade is hard. So is teaching to achieve those standards. If, as Mr. Clinton has said, it takes a voluntary national test at the eighth- grade level to move this country's schools, teacher, parents, and students to work towards high standards then by all means we should devise one. But such a test should test not only arithmetic, but also higher-order mathematical skills such as reasoning and problem solving as well, at least to the same extent as the TIMSS test does.

Our teachers and students will need help to assure success on such a test. Rather than arguing over which approach to teaching math is better, or over the value of the NCTM standards, members of the public, especially those that see the value in competency in mathematics, should get behind the President's initiative

There is nothing fuzzy about math that goes beyond computation since the whole body of mathematical knowledge and research has gone far beyond simple calculation. I, for one, would never have earned a doctorate in math if the field were restricted to learning computational algorithms like adding, subtracting, multiplying, and dividing. I suffered through a school math program that over-used worksheets consisting of hundreds of "basic" problems, one just like the next and like the one before it.

I do not want that system for my children and grandchildren.

NSF is committed to funding the development of standards-based instructional materials, curriculums, and teacher professional development programs so that local school districts can help each of their students to become successful in math and, more importantly, to retain what they have learned so they can use it in their everyday lives.

Margaret B. Cozzens

Division Director, Elementary, Secondary, and Informal Education

42. The Salt Lake Tribune

06/01/97 Section: Nation-World; Page A17

Model School

Charter Schools Steer Clear of ElitismBy RICHARD WHITMIRE GANNETT
NEWS SERVICE

WASHINGTON — About half of all the students in the nation's 428 charter schools are minorities, a new report on charter schools released by the Education Department says.

Early critics of charter schools worried that the schools would become elitist institutions.

"The answer, quite clearly, is no," said Joe Nathan, author of the recent book, *Charter Schools*.

Charter schools — quasi-independent schools supported with public-school money — have an appeal to minority parents that voucher programs and magnet schools lack, Nathan said.

"Charter schools explicitly are not allowed to have admissions tests," said Nathan, director of the Center for School Change at the University of Minnesota.

Magnet schools, which usually have admissions tests, often end up enrolling a disproportionate number of white students.

One reason charter schools have become popular with low-income parents, said Nathan, is that they are not allowed to charge additional tuition. Children using vouchers to attend private schools usually have to pay additional tuition.

"Charter schools provide public-school choice," Education Secretary Richard Riley said as he released the report.

"Charter schools allow {parents} to get

involved at the grass-roots level and help them mold the school in the best interests of the students and the community."

Richard Farias, who runs the Raul Yzaguirre School for Success in Houston, oversees a school serving 100 seventh- and eighth-grade Latino children.

"There's a definite outcry on behalf of the minority population that the public-school system has failed too many of our students," said Farias. "Parents and families are looking for something better."

In Texas, as elsewhere in the country, charter schools have been encouraged as a means of offering alternative schools to children who fail in traditional public schools.

"When you look at high-risk youth, you are looking at minority students," said Farias.

To President Clinton, charter schools are a political compromise that allows him to advocate choice among public schools without betraying the teachers unions that helped re-elect him. The unions strongly oppose vouchers, which give public money to students attending private schools.

Clinton's new education budget calls for federal spending on charter schools to double to \$100 million in 1998.

Teachers unions have mixed attitudes about charter schools.

In state legislatures, the unions have fought to restrict charter-school legislation. On the local level, however, unions have

assisted in launching some charter schools.

For example, the Houston Federation of Teachers helped Farias launch his school.

Says Sandra Feldman, president of the American Federation of Teachers, "Charter schools are not magic bullets. . . . Merely setting people free to put together a school with few rules won't get anyone further down the road."

The Education Department report is part of a four-year analysis of charter schools. Follow-up reports will look at how charter-school students are faring academically compared to their counterparts in traditional public schools.

Considering the surge in the number of schools, the charter school experiment has been remarkably free of controversy, education experts agree: One school in Los Angeles, Edutrain, had its charter revoked for financial mismanagement, and the principal of the Marcus Garvey Public Charter School in Washington, D.C., was charged with assault in an incident involving a newspaper reporter.

The biggest problems with charter schools include a lack of start-up capital, cash-flow problems and handling the paperwork arising from lengthy regulations.

Some districts also find charter schools more expensive than expected because they draw private-school children and home-schooled children back into public schools. ■

43. The New Orleans Times-Picayune

06/01/97; Edition: THIRD; Section: METRO; Page B1

**N.O. SCIENCE SCHOOL GRADUATES THRILLED
TO BE PROOF OF THEORY**

By SARA SHIPLEY Staff writer

Joshua Jolla, 18, was admittedly a mediocre student when he began high school. "When I first started, I was making bad grades, C's and D's, sometimes an F," he said.

He wasn't the type of student you might expect to find at an advanced science and math academy stocked with high-tech lab equipment and staffed by professional scientists and mathematicians.

Then again, the New Orleans Science

& Mathematics High School isn't your average magnet school. The public school, partially financed by private grants, admits students based on their motivation, not their test scores.

The school, which graduated its first crop of seniors Friday, is testing its theory that average students can master math and science.

"In this country, we've subscribed to the principle that only the top 5 percent of kids are the ones who can become math and

science Ph.D.'s," said Colby "Skip" Dempsy, a Tulane University neurosurgery researcher who helped found the school. "This is for the 'second tier' of kids."

Jolla is thrilled to be a part of the pioneer class. By his senior year, he had made the A-B honor roll and built bridges in his pre-engineering class. When he enrolls at Xavier University next spring to study engineering, he'll be the first person in his family to go to college.

Department by about \$2.5 million over five years.

Though the results of a final federal audit have not been released, Endom said the government's lawyers have not indicated a change in their position.

The lawsuit was filed last year, but the government doesn't reveal a whistleblower lawsuit until it investigates the claims and decides whether to join the suit.

The U.S. Department of Justice has declined to join the suit, but that doesn't mean it disagrees with the allegations, said New Orleans attorney William Wessel, who represents Garibaldi and Samuel.

"They pretty much verified what these two gentlemen have uncovered," Wessel said.

But Endom reads the legal tea leaves a different way: "I would state the inference is otherwise," he said.

The attorney handling the audit for the government did not return calls seeking comment Friday.

Despite staying out of the lawsuit, the government has a stake in the battle.

If Garibaldi and Samuel win their lawsuit, the government would collect at least 70 percent of the judgment, Wessel said.

Under the federal whistleblower statute, the damages would amount to three times the sum the government lost, or \$18 million in this case, Wessel said.

He said the School Board also could be ordered to pay up to \$10,000 for each of the 300 "false bills" submitted to the government, for another \$3 million.

By law, Garibaldi and Samuel would be able to keep between 15 percent and 30 percent of the judgment, or \$3 million to \$6 million, Wessel said.

Holmes called the \$21 million damage claim "ridiculous." ■

40. The New Orleans Times-Picayune

05/31/97; Edition: KENNER; Section: METRO; Page B3

ST. BENILDE BOASTS A BLUE RIBBON

By ANAND VAISHNAV East Jefferson bureau

A year ago, administrators at St. Benilde School in Metairie began the arduous process of applying to be a Blue Ribbon School, a designation that would place it among the nation's top places of learning.

This week, their work paid off. St. Benilde was one of six schools in Louisiana and 262 schools in the country to win the prestigious Blue Ribbon from the U.S. Department of Education. Three schools in Orleans Parish, one in St. Bernard Parish and one in Caddo Parish also won the award.

Principal Cheryl Orillion, who has led the 670-student school for three years, attributes the award to the school's strong

Catholic tradition and parental involvement. The school was founded in 1968 by a group of nuns, she said.

"If you can imagine taking an academic institution and meshing it with a large extended family, that's St. Benilde," Orillion said. "It's a priority that children know their Catholic heritage and that they live it. That's the central focus."

The Blue Ribbon program has recognized more than 3,300 public and private schools since it began in 1982. Education Department officials examine the nominated schools' faculty, curriculum, student achievement, graduation rates and community involvement.

They also visit the school, pulling

students randomly from class to ask their opinion of the school and questioning parents and teachers. Some of St. Benilde's volunteers don't even have children at the school, administrators said.

"You don't ask children, parents, teachers, anybody in this school to help and are denied," Assistant Principal Linda Finley said. "They are so willing."

As soon as she found out St. Benilde had won the award, Orillion got on the public address system and read the letter. Cheers could be heard all over the school, but not for long.

"The whole school was screaming," Orillion said. "But like good St. Benilde children, they got very quiet." ■

41. Dayton Daily News

05/31/97; Edition: CITY; Section: METRO TODAY; Page 1B

EDUCATION - 2 AREA SCHOOLS WIN BLUE RIBBON

By Katherine Ullmer DAYTON DAILY NEWS

Two of 11 Blue Ribbon School Awards given to Ohio schools by the U.S. Department of Education this week went to schools in the Miami Valley.

The Centerville Kindergarten Village School and Fairbrook Elementary School in Beavercreek both received the award, given to schools for meeting local, state and national goals of excellence.

The Centerville school was cited for its

handling of all kindergarten classes, including special education students, for the district in one school. Fairbrook was recognized for conflict mediation, parental involvement and its inclusive educational program, according to Jim Vangrov, a spokesman for Rep. Tony Hall, D-Dayton, who visited the Centerville school Friday.

Pat Buckingham, the school's principal said, "We were excited about the award. You work hard and one day, someone says

what you're doing is very good."

Buckingham credits the "dedicated staff and wonderful community support" for the award.

Principal Linda Beaver at Fairbrook Elementary School said her staff and 650 students were thrilled with the award. The school tries to involve children in problem-solving and uses peer mediation for conflict resolution. "We also have a lot of parent involvement here," she said. ■

"I loved it," Jolla said. "To me, it was more individual help from teachers and more hands-on. You get to work with chemicals instead of just reading about it."

Not everyone in Jolla's class has been so successful. Of 115 students admitted to Science & Math's first freshman class four years ago, only 54 remained to collect certificates of completion. Many left because they didn't want to do the work, school leaders said, but officials hope more students in future classes will stay at it.

"We're still a work in progress," Principal Barbara MacPhee said.

The school was conceived in 1990 when Tulane pharmacology professor Paul Guth wrote a letter to the editor of *The Times-Picayune*, pleading for a school devoted to science and math. Dempsey, Southern University math professor Matthew Causey and dozens of other supporters joined forces to create the school.

The founders decided New Orleans didn't need another Benjamin Franklin High School, a magnet school that accepts only the top 5 percent of students. With the nation's math and science test scores consistently disappointing, they believed that average students desperately needed to be exposed to high-quality, lab-based science and math classes.

That's exactly the approach being called for by many national education leaders. When the United States scored below many industrialized nations on the Third International Mathematics and Science Study in 1996, the U.S. Department of Education said all students need more problem-solving experiences and less drill in the classroom.

Science & Math's 300 students spend their days doing experiments, and they're expected to complete one independent research project each year. All teachers have degrees in math or science, and many have work experience outside the classroom.

"The way they're saying it should be, we're doing it," said Kris Pottharst, director of the Advocates for Science and Mathematics Education Inc. The group raises about \$300,000 a year, mostly from private foundations and corporate donations for equipment, teacher training and other expenses not covered by the public school system. "Who'd guess where? Here in New Orleans," Pottharst said.

There are about three dozen science and math specialty schools in the United States, including the famed Bronx High School of Science in New York. But most, if not all, of those schools require entrance tests.

Science & Math admits New Orleans public and private high school students who are curious about science and math, and are willing to work. Students must have at least a 1.6 grade point average on a 4-point scale and three letters of recommendation, and they are interviewed before admission, MacPhee said.

Students attend their home high school half a day and Science & Math the other half, sometimes spending hours on public buses to get to the school's campus near Delgado Community College.

The public school system pays for teacher salaries and a few books, but Science & Math is responsible for the rest, including rent for the wing it occupies at Louisiana Technical College.

The school has students from every high school in the city, MacPhee said. The student body is 91 percent African-American, 5 percent white, and 4 percent Asian and Hispanic. Despite stereotypes that girls don't excel in technical subjects, 65 percent of the students are female.

Science & Math has all the problems of a normal city high school, including drug use, pregnancy and homelessness, MacPhee said. But the school's biggest challenge is teaching students academic skills they missed in lower grades.

"The habits they've acquired, the bad habits, are hard to break," said math teacher Tim Dilligan, who taught at Harvard before coming here. Dilligan said some students have lazy study habits or a lack of classroom social skills.

To make up for that, students are showered with tutoring opportunities after school, on weekends and during the summer. Those with low grades are required to get extra help.

Students have access to a full-time psychologist, plus occasional leadership-building activities such as challenge courses.

The school also provides opportunities to work in summer laboratories at such locations as the Audubon Zoo and Tulane University. Students went on a camping trip with the Sierra Club last year.

"You can't imagine this occurring at any other school," Dempsey said.

Such programs lend an air of enthusiasm to the school.

Sophomore Jamie Paul, 16, expertly dissected a cow's heart in class this year, explaining that the left ventricle is thicker because it pumps blood all the way to the feet. Paul, from Lawless High School, wants to become a nurse or a biology teacher.

"We actually touch hearts and frogs,"

she said. "I wish I could stay here all day."

Paul said she is an average student, spending four hours a night on homework to keep up. "After that, I'm in bed, with my notebook next to me," she said.

Valedictorian Christofer Ferguson, 19, said Science & Math was just as hard as Ben Franklin, his home high school, but in a different way. "It kind of prepared you to do your own research and learn to do things in different ways," he said.

Ferguson, who attended Montessori schools as a child, said he also learned from being exposed to a wide variety of students. "It was kind of an eye-opening experience for me," he said. "In a lot of ways, it just showed me that everyone needs to help everyone out."

Many students whose home schools aren't so rosy say they like Science & Math because it's clean, disciplined, and the teachers always have time for questions. They have equipment most schools would envy, and they get to keep white lab coats printed with their names.

Most students say Science & Math is fun, but it is hard work too. Besides studying more than most of their peers, students miss friends or pep rallies at their home schools. Some long for the simplicity of a one-school schedule.

"It's just a lot longer day," said freshman Danielle Wright, 14.

But all the hassles are worth it to Kennedy High School sophomore Shenica Lutchter, 16, who had an internship in the pediatric intensive care unit at Children's Hospital last year. She said it was an opportunity she would not have had otherwise.

Science & Math, she said, is "not as nerdy as it seems."

The school even accepts some students who aren't planning on a math or science career. Wright, for example, wants to be a lawyer, but she said attending the school will look good on her resume. "We just have more advantages here," she said. "I know I'll appreciate it in the long run."

Teaching students to think and to consider careers they never thought of before are all part of the plan.

"The same critical thinking skills apply whether you're a biologist or a lawyer or a business administrator," said biology teacher Rob Wallace, who recently had his students identify bacteria using a video microscope.

School administrators say the outlook seems good, but they're unwilling to render a verdict on the success of the school. For starters, MacPhee wants to strengthen the math program. Students tend to do better in science: 100 percent of graduating

seniors passed the science portion of the state-required graduation exam, but three did not pass the math part on their first try.

More than 65 percent of new graduates are going on to four-year colleges,

compared with about 40 percent for the state.

"This first class took a chance on us, because we were an unknown," Guth said. "We're proud, but I think we're going to be

prouder still."

For more information, contact the New Orleans Science & Mathematics High School at 483-4145. ■

44. Seattle Times

June 3, 1997

TOPS parents target class size

by Jolayne Houtz Seattle Times staff reporter

A debate over how to bring class sizes down at one of Seattle's top alternative schools has raised thorny questions about equity, elitism and entrepreneurship in public schools.

TOPS, The Option Program at Seward in Seattle's Eastlake neighborhood, also is wrestling with proposals to reduce its class sizes, including a controversial one that calls for some parents to charge themselves, in essence, a monthly tuition.

The discussion at TOPS has parents and teachers asking why state lawmakers aren't doing more to reduce student-teacher ratios in Washington state, which has some of the highest in the nation.

The original tuition proposal is opposed by TOPS teachers and many parents, and even its backers admit the idea is unlikely to go forward.

But the notion struck a nerve at the school, generating debate and a number of counter-proposals still under discussion.

Staff and parents now are considering at least six plans to reduce class sizes - everything from using AmeriCorps volunteers to asking librarians and other instructional staff to be in classrooms part of the day. The school will hold an all-school meeting tonight at 7 to discuss the proposals.

The debate started this spring when a group of kindergarten parents suggested charging themselves a monthly tuition to cut first-grade class sizes in half next fall, raising concerns about how far a public school could go in raising private funds to supplement basic education.

Craig Dawson is the parent of an incoming first-grader. The idea that his child will enter a class of about 28 students next fall prompted him to propose the controversial tuition plan, an extension of a similar program that brings class sizes down for TOPS kindergartners.

"The question is what's best for the kids and what product are you going to get at the end if you don't fund this," he said. "This is a way of making up a deficit where schools don't meet expectations."

Many parents pay for tutors and other academic extras, the plan's supporters note. "We want to privately invest in our children in the schools," said kindergarten parent Ronnimae Porras-Foye.

The idea led staff and some parents to worry about blurring the line between public and private schools.

"It is the primary purpose of public schools to promote social equity through education. . . . Attempts to bolster public programs with tuition interfere with the very essence of public education," according to a letter signed by the TOPS elementary staff in response to the tuition proposal.

Critics said the plan could hurt the school's diversity, both racial and economic. "I worry about who wouldn't choose TOPS thinking they would have to pay," kindergarten teacher Joan O'Connor said at a recent site council meeting.

Others worried about promoting a reputation TOPS has gained in the district for being elitist, a "private school within

the public schools."

O'Connor said reducing class sizes should be a statewide issue, not something addressed school by school. "The leadership of this district is letting the Legislature off the hook. . . . We've got to hold the state's feet to the fire."

The TOPS site council plans to vote later this month on how to proceed.

The discussion at TOPS is in keeping with the emphasis Superintendent John Stanford has placed on schools being more enterprising, said Joseph Olchefske, the district's chief financial officer.

Schools have some freedom in creating and paying for extra programs as long as parents aren't obligated to pay and those who don't pay aren't treated differently by their schools, he said.

Within those legal boundaries, schools are encouraged to raise funds privately, then make decisions within their communities about how to spend the money to enhance their programs, he said.

TOPS Principal Karen Kodama said she is trying to stay neutral, but the idea of smaller class sizes has universal appeal.

"Any educator you talk to is going to say, 'Yes, that's a good idea.' But the controversy is in how you fund it," she said.

Some of the ideas, such as using AmeriCorps volunteers, could be in place as soon as next fall if the site council approves. Others would require more work with the district and with state lawmakers. ■

11. USA Today

June 24, 1997

Public school teachers can help in church schools

WASHINGTON - The Supreme Court, in a significant shift away from its doctrine of strict separation of church and state, ruled Monday that public school teachers may provide remedial instruction inside private religious schools.

The 5-4 ruling also could open the door to other forms of public support of parochial schools short of direct subsidy of religious programs.

For the first time, said Barry Lynn of Americans United for Separation of Church and State, "taxpayers are paying for a public school teacher to teach in a religious school."

The ruling reverses a 12-year-old decision that said federal Title I funds, which provide for remedial education for all disadvantaged students, could not be used inside parochial schools.

The program helps 6.7 million children, including 173,000 who attend

private schools.

The 1985 ruling was viewed by many as the high-water mark in separation of church and state but has been criticized by a majority of the current court in recent years.

Since 1985, New York City has spent more than \$100 million on alternative methods of providing qualified parochial school students with remedial education. In some cases, public school teachers manned trailers and buses that were parked at curbside outside parochial schools. Students had to leave school to receive instruction in the trailers.

New York, joined by the Clinton administration, asked the court to overturn the original ruling.

"No longer will schoolchildren have to leave their school buildings in order to get the assistance they need," President Clinton said.

In an unexpected move, the court also

reversed an earlier ruling that struck down a broader Michigan program that offered "enrichment" classes for parochial school students.

That could signal a willingness to accept a range of aid to parochial schools, possibly including voucher programs that would allow parents to use taxpayer funds for parochial school tuition. Voucher programs are under legal challenge in Wisconsin and Ohio.

"It knocks the wind out of the sails of those who say vouchers are unconstitutional," says Michael McConnell of the University of Utah, lawyer for the Christian Legal Society.

But Elliot Minberg of People for the American Way says government funds still won't be allowed to be used for religious indoctrination. "It just puts the trailers inside the schools."

By Tony Mauro and Lori Sharn, USA TODAY

12. Morning Edition (NPR)

June 23, 1997

Teaching Math in Seattle

BOB EDWARDS, anchor A recent 26-nation study ranked American fourth-graders among the top students in science and math, but by the time the American fourth-graders reach eighth-grade, their scores in both subjects plummet. There's a variety of explanations for the drop-off, as well as a variety of attempts to improve student performance. School officials in Seattle, Washington, have made some profound changes to try to get at the problem. NPR's Claudio Sanchez reports.

CLAUDIO SANCHEZ, reporter Mr. Reeves' eighth-grade math class at George Washington Middle School in Seattle is anything but typical.

MR. REEVES, in class Now the next thing I'm going to have everyone focus on, and I'm going to come around and check, is I'm looking at the data that you have assembled and the work you have done for your circle graph.

SANCHEZ Reeves' lesson on

statistics and probability may not seem extraordinary, but it is. It's advanced Mathematics. Most junior highs and middle school students in this country don't do mathematics, they do simple arithmetic -- you know, subtraction, addition, division and multiplication. In fact, no one else around the world spends as much time -- eight years -- on arithmetic as Americans do. Everyone else moves on to mathematics -- algebra, geometry -- and they do so for good reason. Mathematics skills today are crucial in the world of work. Seattle realized this a few years ago and have decided to join the rest of the world. Mr. Reeves' students today do seem somewhat bored watching bean sprouts grow in a Petri dish, but gathering and organizing data and explaining growth rates with charts and graphs requires skills that these kids think really are important. In other words, you don't hear anyone say, "When am I ever going to

use this?"

FEMALE STUDENT We're learning quite a bit making all the graphs because my mom uses graphs everyday in her work and I may have to when I get older.

SANCHEZ, to student Why is it important to know how to make a graph?

FEMALE STUDENT For like, businesses, for like, tax rates and growth rates, for presentations. Like, you're an investor and you have to make a presentation to show how much profit you're getting and how much profit you're giving away to somebody else.

SANCHEZ The future is mathematics, says Allison Harris, the mathematics curriculum specialist for the Seattle Public Schools. The foundation, though, she says, is arithmetic.

ALLISON HARRIS, Seattle Public Schools Curriculum Specialist These guys have learned arithmetic -- how to add, subtract, multiply and divide -- to do it with very large numbers, to do it with

fractions, to do it with decimals. They've had that in school. But what the teachers are attempting to do is put that arithmetic in the context of mathematical applications of it in the real world.

SANCHEZ Changing the math curriculum, changing the instruction and changing the assessment or the types of tests kids take all at the same time with higher academic standards in place, has not been easy on anyone, especially teachers, says Mae Bond. Bond works with some of the district's most talented middle school math students.

MAE BOND, Seattle Public Schools There are teachers that say, "I just cannot cover nearly what I ought to cover. I am spread so thin." You have such a range in abilities, just a range in attitudes, you have such a range in all kinds of conditions that the teachers have to deal with in the teaching of thirty-plus students.

SANCHEZ Making sure that all students learn and that no one is left behind despite these conditions is the hard part, says Bond, which means Seattle must do more to remove the things that get in the way of learning, says Robert Feldner. Feldner, who's dean of the College of Education at the University of Rhode Island, is an expert on middle school reform.

ROBERT FELDNER, University of Rhode Island A lot of times people will say, "Well, we need to change instruction." Well, that's true, but you've got to change the nature of the schooling around instruction, to get that instruction to emerge. So, if you have a traditional junior high school and it's organized into 35-45 minute periods, the teachers don't work together. If they see 150 kids a day that they share with no other teachers, it's very hard to do deep and intensive instruction.

SANCHEZ Seattle's reform plan does call for team teaching, flexible class periods and retraining of teachers and administrators. But most people here say reform has got to be incremental and visible. That's why school officials here have created a laboratory where everyday

all of the pieces of reform are working in tandem and yielding results. This laboratory is in Jane Goetz's first and second grade classroom in Sacajewa Elementary School.

JANE GOETZ, teacher at Sacajewa Elementary School We separated computational arithmetic from mathematics, so have a fifty-minute to an hour math period every day in every classroom in this school. And then we have an additional 15-20 minutes some other time during the day where the kids practice mental math, arithmetic facts, review things they need to review and it's done separately.

SANCHEZ By reducing and then separating the time kids spend on arithmetic, Goetz can build on, rather than repeat, basic material.

GOETZ The students in my class, for example the second-graders, are fairly proficient with addition and subtraction facts up to eighteen.

SANCHEZ Single digit?

GOETZ Single digit. Also, double digits addition and subtraction. That also requires regrouping sometimes, it doesn't. 'Carrying and borrowing' is what we used to call it.

SANCHEZ No multiplication or division yet?

GOETZ Actually, they've been exposed to conceptual work in the division and multiplication because once again, if I as the primary teacher, don't begin to lay the foundation in a concrete way for multiplication and the first time they see it is in the third grade when they're supposed to memorize the multiplication facts, they're at a disadvantage already.

SANCHEZ One lingering question is will tests change to measure the new learning and instruction? Goetz says people are always going to look at test scores to decide how schools are doing.

GOETZ I think, we also need some other assessment tools to show how well our students are doing. And as a classroom teacher, I get more information when I ask my students to respond to that I've taught and I've hoped that they've learned.

SANCHEZ It's hard to say how much Seattle school officials will rely on test scores to decide whether their reforms are working or not. And it's not a given that higher test scores will mean improved funding for schools. After all, says Allison Harris, the school district's math specialist, Seattle has been forced to do more with less every year.

HARRIS You can do it with less money, but at what price? We have a stressed-out staff, we have people who are hanging on by their fingernails to their sanity in the classroom. It's not a healthy environment.

SANCHEZ It's recess time for Mrs. Goetz's second and first-graders. Half of the class chooses to stay behind to work on their math project - making graphs, which are not really very different from the graphs the eight-graders were making at Washington Middle School. In both cases, students are learning about statistics and probabilities, but instead of bean sprouts, these 6- to 8-year-olds did a survey at their school to find out what their favorite time of day was.

UNIDENTIFIED STUDENT to Mrs. Goetz's classroom Well, we asked the third-graders who likes morning best and then only two people raised their hands. And then we asked them again, who likes the afternoon and nineteen people raised their hands. And we asked them again and only one person liked the nighttime and then we came back down to the classroom.

GOETZ OK, well, thank very much for sharing that.

SANCHEZ The math scores and overall academic performance of Mrs. Goetz's students shot up dramatically this year. All of them tested in the top one-third in a national sample of kids their age. This is good news for math officials who see the new math curriculum as a blueprint for improvement in other areas and, more importantly, as a foundation for kids here who want to compare favorably, not just with top students around the nation, but around the world. I'm Claudio Sanchez reporting. ■

a \$2.7 million school-bond election. With the new millennium, the community will get a rebuilt elementary school and the town's first middle school.

"We're looking forward to having

some elbow room," said teacher Virginia Thompson. "We're hoping this will improve our student morale and we're real sure it's going to improve staff

morale. We can kind of buckle ourselves up and say, 'Well, all right we'll get by, we'll survive.' But you know it grinds away at your self-image." ■

33. San Diego Union-Tribune

May 31, 1997 Category: Local

Math game proves real plus for student from National City

By Mindy Stack

Teacher Patricia Hamaguchi feared that Lupe Arrendondo would end up in a gang if she didn't change her ways.

Lupe's brother, a gang member, was killed in a drive-by shooting in 1992, and Hamaguchi said the fifth-grader had been getting into trouble at school. Lupe said she thought about joining a gang but something stopped her: a math game called "24."

The premise was easy and Lupe got hooked.

"The first time I played it was cool," said Lupe, 10, who along with 80 other students began an after-school math club at El Toyon Elementary School in National City. It was led by Hamaguchi, who introduced her to the game.

"I didn't know nothing then," said Lupe. "Now I'm getting better and math is getting easier for me. It kept me from being in a gang." Lupe began practicing every afternoon, and Hamaguchi said the game helped keep her busy and out of trouble.

"She still has problems, but I have hope for her now," she said. "She needed to be turned on to something other than boys or she was going to be in big trouble."

Yesterday, Lupe joined 200 fourth-through eighth-graders from around the county at the Balboa Park Club to compete in the fourth annual Greater San Diego-Area Advanta 24 Challenge Championship Finals.

The game is simple. A "proctor" at each table of four students throws down a card with four numbers on each corner. The students must add, subtract, multiply or divide the numbers only once to get an

answer of 24. The student who taps on the table first must spit out the answer within 15 seconds.

For example, one card at the event had the numbers 1, 2, 10 and 12 in the corners. The answer the student gave was: $2+10=12$, $12+12=24$, $24 \times 1=24$.

As the rounds proceed, the numbers get higher and the game gets tougher.

Daniel Gutierrez from Encanto Elementary School in San Diego, who has been playing for two years, practiced a half-hour a day to get ready for yesterday's competition.

"It is fun to play and to compete," said Daniel, who didn't make it to the semifinals. "I like to find out who is better."

The game was introduced in 1988 by inventor Robert Sun, who says it has grown to reach more than 5 million children worldwide. There are now nine editions of the game including a platinum edition which includes fractions and algebra.

"San Diego has demonstrated that they have a high level of support for kids and mathematics. The kids are very sharp," said Sun, who is president and CEO of Suntex International Inc. and was at the championships encouraging the students.

The Greater San Diego-Area Advanta 24 Challenge Math Program can be found in more than 3,500 classrooms throughout the county. Rep. Randy "Duke" Cunningham, who helped bring the program here four years ago, and San Diego Charger Isaac Davis encouraged the students and helped pass out awards yesterday.

Only 48 students made it to the semifinal round. The cards were harder but the kids seemed even quicker. Lupe made it to the semifinals, and she couldn't believe she had made it that far.

Louise Vandling, the math specialist for Casitas Center for Technology, Science & Math in Vista, is a real fan of "24."

"The challenge is a fun game that makes students enjoy doing math," said Vandling. "It enforces the basic math skills, helps the children learn problem-solving skills and to look at patterns — something that we've been investigating lately."

At the final round only four students in each of the three categories were left. Everyone gathered around cheering the players on. Lupe watched from the sidelines with a sad look in her eyes, having been cut from the final round.

The round finished and the crowd applauded as the winners were announced; Brett Moodie from Carmel Del Mar Elementary School in San Diego in the fourth-and fifth-grade category, Barry Leung from Mesa Verde Middle School in San Diego for sixth grade, and Miller Tran from Mesa Verde won for seventh and eighth grade.

Lupe cheered the students as they received their trophies. Touching the medal around her neck for reaching the semifinals, she said she was going to practice and get ready for next year's championships. Lupe said she was sure she would win.

Mindy Stack is a Union-Tribune student intern. ■

approval.

The Legislature complied with Doran's order at first, giving schools more money and promising to pay 100 percent of education costs.

It also limited the amount of money a district could raise from local levies to 10 percent of most of what it receives in state and federal funds. The idea was to let districts buy some "frills" but minimize sizable gaps between rich and poor communities.

But as the new rules were being phased in, property-rich districts went to Olympia to change them. They resisted giving up money that they had grown accustomed to. Bellevue, for example, would have had to forgo \$15 million a year.

With Bellevue's assistant superintendent rewriting the rules and Seattle and other districts adding political pressure, the state's 10 percent cap on special levies was loosened to let districts raise more.

Today 91 of the state's 296 school districts, including Seattle and Bellevue, have grandfather clauses that allow them to collect even more than the current state cap of 24 percent.

The higher cap had been set to expire in 1998. But school officials, warning they would have to impose deep cuts if forced to roll back their levies, successfully lobbied the Legislature and Locke to make the 24 percent limit permanent.

Faced with growing class sizes and expenses, Issaquah says it needs every cent.

Situated on the hem of the Cascade Mountains, it's a community where many paychecks are rooted in laser discs, CD-ROMs and management-information networks. New homes on the Sammamish Plateau are being wired for fiber optics and high-powered computers. It's not uncommon to see students toting PowerBooks in their backpacks.

When it comes to standards for quality education, Issaquah views nearby communities like Bellevue, Mercer Island and Lake Washington as competitors. A rural town like Granger is hardly in the race.

"We've got people who say, 'Bellevue's got this program. Why don't you?'" said school board member Mike Bernard.

The question, he says, is often a veiled reference to the fact that some Issaquah families will switch school districts or place their children in private schools to get the highest-quality classes and

teachers.

Many parents and teachers see valuable benefits from their investments. This year, they lured away a nationally-recognized superintendent from a Kitsap County school district that has had trouble raising levies.

And Edfeldt ticks off the names of graduates who have gone on to work at Microsoft and local software companies, without even needing to stop in college along the way. One student enrolled in junior college but found he knew more than his instructors. So the school district hired him as a network technician. Later, they lost him to a private company where he's earning \$45,000 a year.

Alison Crum, a graduating senior, is convinced her training in Issaquah's Technology Information Program helped her get accepted at Stanford University. She's one of the student staffers who troubleshoot computer glitches and install software at an elementary school.

She's become so savvy on computers that her father, a research scientist at the University of Washington, "comes home and says, 'Oh, what did you learn today?' And then I show him."

In other states, disparity prompts lawsuits

Twenty-five states have been sued since 1989 over inadequate or inequitable school funding. In most cases, plaintiffs win court rulings or force legislative action.

Alaska was hit with a lawsuit 12 days ago from rural communities that say they aren't getting their fair share of construction money.

In Ohio, 500 out of 600 districts successfully sued, forcing the state to provide more money for poorer schools. The judge there cited the inability of rural schools to attract the same level of quality teachers, buy computers, upgrade buildings and develop curriculum comparable to that of their urban counterparts.

"Nobody expects everyone to spend the same thing. Some of it is local choice. Some of it is dependent on the needs of students, and that's all fairly accepted by the courts," said Mary Fulton, a policy analyst for the Education Commission of the States, a nonprofit research organization in Denver.

"If there's a wide variation in the wealth of the districts, then there's a problem," she said.

The majority of Washington's 296 districts spend a dollar amount close to the \$6,200-per-student average allocated by the state every year. And since most

state funding is based on student/teacher ratios and teacher-salary formulas, objectivity is built into the system, state officials say.

Senate Majority Leader Dan McDonald, R-Bellevue, says the current school-funding system works well because taxpayers prefer to approve money for schools they can see down the street, rather than have taxes raised by legislators they don't know in Olympia.

"Having people decide whether they're going to tax themselves is as fundamental as you get with Republican philosophy," he said. "You want to put decisions down to the people as close as possible."

But Democrats say the 1997 legislation giving school districts the green light to raise as much as one-quarter of their money from levies is proof that the state is shortchanging them on funds for basic education. Permission to raise more school levies also won't mean much for poorer districts that have higher-than-average tax rates.

Still, school advocates say winning approval to raise more levy money is the best compromise they can get.

With Initiative 601 in place - a voter-approved law that limits state spending - they aren't optimistic about winning more state money for schools. Even before those limits went into effect two years ago, state support had barely kept up with inflation during the past two decades. It is now falling behind it.

Frustrated by legislative inaction, Linda Harris, president of the Seattle School Board, said her district is researching the possibility of a lawsuit that would demand the state spend more on schools. The district is talking with the Washington Education Association, which represents teachers, and the state PTA, and will probably make a decision by the end of the year, Harris said.

Seattle is, on paper, one of the richest districts in the state, raising more than a third of its funds from levies, enough to generate \$7,300 a year per student. But, Harris said, numbers are deceiving. The district deals with many of the same poverty issues faced by Granger. She favors a funding system based less on teacher/student ratios and more on the learning needs of students.

"We need to work for children and not pit urban vs. suburban vs. rural, and that's where we've been for the last 20 years," Harris said.

Back in Granger, principals and teachers say they hold no grudge against Issaquah or other well-heeled districts.

They are celebrating voter approval of

35. Baltimore Sun

May 20, 1997

Agency shares secrets to math

Education: The shadowy NSA is taking a very visible role to help students decipher some of the finer points of mathematics.

By Howard Libit
SUN STAFF

For a government agency that refused to acknowledge its existence until a few years ago, the National Security Agency (NSA) is making itself well known these days in Maryland's schools.

NSA employees can be found in math classrooms throughout the Baltimore-Washington corridor. The agency supports summer institutes for math teachers and students. Pupils in dozens of Maryland schools use former NSA computers and equipment — with the top-secret files removed, of course.

"In just a few years, they've become an invaluable partner in mathematics education in Maryland," says Janie Zimmer, who oversees mathematics instruction in Howard County schools. "They've done a phenomenal job showing students the practical applications of mathematics."

Given that the agency's initials once were said to stand for "No Such Agency," the decision to assume a high-profile role in Maryland education didn't come easily — particularly because the idea was first considered in the late 1980s, before the Cold War ended.

"NSAers just didn't go out into the community," recalls John R. Pettit, director of the Fort Meade agency's Mathematics Education Partnership Program. "This was a decision that took a lot of soul-searching and a lot of discussion."

But as the nation's largest employer of mathematicians, "The agency was very concerned about the future of mathematics education," Pettit says.

National and international studies indicate that the math skills of American students trail those of students in many other countries, and "we are worried about that," he says.

It didn't hurt that the NSA was considering the idea at the same time Congress and the president were encouraging federal agencies to be more active in communities and education, he says.

What began in 1991 as an NSA working group on kindergarten through 12th-grade math education has grown into an extensive program that helps teachers design lesson plans, finds tutors to give students one-on-one support and even takes over entire schools for a day of lessons. All of the NSA employees are volunteers who are given time off from work.

In a math class at Severn Elementary School one recent afternoon, NSA computer programmer Mike Blasi showed fourth-graders about probability, using coins, dice and the board game "Monopoly" to illustrate chance and fractions.

"If you understand a little more about probability, you'll end up winning more games and

beating your friends more often," Blasi promised the Anne Arundel County 9-, 10- and 11-year-olds.

Blasi held their attention through three 45-minute lessons. "It was neat seeing someone who actually uses math," said fourth-grader Marla Muha, 10.

The lesson meshed perfectly with the instructional goals of the Maryland School Performance Assessment Program (MSPAP), the state's annual tests of schools' quality, said Maureen Maidhof, Severn Elementary's fourth-grade math teacher. Students were asked to work in teams to think through problems and write out their answers, like on the MSPAP.

"That's our main goal — to support the math programs of local school systems and the state," says Julie Dunbar, an NSA program analyst who is assigned to the math education project.

The NSA publishes a catalog of dozens of topics that its employees can teach.

They range from the most popular — an edible elementary lesson involving M&Ms, estimating and graphing — to those involving the real world — a high school lesson showing the mathematical model used to manage cleanup of the Exxon Valdez oil spill in Alaska.

In Howard County's Elkridge

Elementary School recently, more than a dozen such lessons were given during a full day of math instruction for the students.

As Dunbar introduced Elkridge kindergartners to glyphs — graphical illustrations of data common on the MSPAP — another NSA employee showed students how to use protractors to bisect lines.

"I think it's important to show the students why they need to learn math," says NSA mathematician Brad Garner. "They need to see that math has a lot of very practical applications."

During the 1995-1996 school year, NSA employees gave 770 talks at almost 150 schools, primarily in Anne Arundel, Howard and Prince George's counties. This school year, they're on pace to exceed that number, in part because the agency has been sending speakers to schools in Baltimore as well.

Apart from the speakers bureau, NSA employees are active in partnerships with about 80 schools throughout the area, as well as in Southern Pennsylvania.

At Arundel High School, NSA employees help students prepare for the high-level American High School Math Exam competition, assist in grading problems for calculus classes and tutor students who are struggling.

"They've helped us however they can," says Arundel High Principal William Myers. "Anything we've asked for, they've found a way."

In addition, NSA employees help sponsor math contests for Maryland students, a math- and science-oriented summer camp for students on the Eastern Shore and several teacher training institutes. Teachers at those institutes develop math lessons that are distributed to schools across the country.

"Math is still looked down on sometimes as being an abstract language, but when you can show students something involving cryptology, that's fascinating to them," says Donna Crabbe, a math facilitator with the Maryland State Department of Education. "It's the kind of thing that persuades them to keep

33. Miami Herald

May 20, 1997

Task force votes against school boundary

By GRACE LIM
Herald Staff Writer

A joint task force that includes Dade School Board members and county commissioners voted 5-4 Monday to recommend that the board abolish its no-build boundary in far West Dade.

The vote could be a boost for School Board member Manty Sabates Morse, who is sponsoring a proposal at Wednesday's board meeting to abolish the imaginary line, which was drawn seven years ago to discourage urban sprawl.

The school boundary line runs about a mile inside, or east of, the county's urban development boundary — the cutoff point for almost all new housing.

Board members drew the line with the intention to not build any schools west of it.

Since then, western schools have

become very overcrowded and the board itself has been reconstructed, with members now elected from districts.

"This line serves no purpose whatsoever for Dade County Public Schools," Sabates Morse said at Monday's meeting.

A compromise offered by Metro Commissioner Miguel Diaz de la Portilla was rejected, 6-3, by the group. He wanted to modify the line to allow some construction of schools, and give School Board members the right to purchase or accept donated land west of the boundary on a case-by-case basis.

"We're not going to get additional schools in West Kendall or South Dade or anywhere else in Dade County by eliminating the school development boundary line," he said. "That is a

myth."

Voting to recommend the line be abolished Monday were Sabates Morse, Jay Chernoff of the League of Cities, Andrew Dolkart of the Greater Miami Chamber of Commerce and Carl Durnberg of the United Teachers of Dade and Stanley B. Price, a zoning lawyer who represents the construction industry.

Opposing were Diaz de la Portilla and fellow Metro Commissioner Katy Sorenson, School Board member Renier Diaz de la Portilla, and Betty Noe of the PTA/Citizens Coalition for Public Schools.

"I see this recommendation as a reversal of management growth policies that so helped our overcrowding situation the last three or four years," said Renier Diaz de la Portilla. ■

34. Casper Star-Tribune

May 19, 1997

U S West helping schools obtain technology grant

CHEYENNE, Wyo. (AP) - U S West is helping Wyoming schools and libraries improve their chances at a share of \$2.25 billion in federal technology funding.

U S West - a regional Internet service provider - is providing technical help to groups interested in applying for the technology funds.

The Universal Service Education Fund helps students connect with the Internet, communication services and technology.

"Educators across the country will be moving fast to get these funds," explained Stan Bader, vice president of U S West Communications in Wyoming.

U S West held a statewide video conference with Wyoming educators and

library officials last week to discuss the types of services and funds available.

"We want to make certain that schools here get a running start with the information and resources they'll need to bring this funding home to help students," Bader said.

He said Wyoming's schools "should be second to none when it comes to understanding computers and how to search and retrieve vast amounts of information on the Internet."

The Federal Communications Commission recently decided to make \$1 billion available immediately and another \$1.25 billion available during the second half of the year.

In 1998, \$2 billion will be available

on a first-come, first-served basis, said Mike Ceballos, U S West's director of public policy. After that, \$250 million will be used to provide funding for schools and libraries that can demonstrate the highest degree of need.

Ceballos said the technology grants themselves - which are aimed at kindergarten through 12th grade students - do not have a maximum amount. But, he said, the grants can be used only for certain services.

As part of its "Connected Schools" program, U S West has offered to counsel districts interested in applying for the federal money.

The deadline for applications is July 1, Ceballos said. ■

math-science
of the agency
science courses. He hopes it will be easier than the months he spent juggling

high school work and his arduous lab research.

"I'm going to have fun in college," he said. "It will be a relief." ■

45. Associated Press

05-20 5:40a

Code-breaking spies give math lessons

FORT MEADE, Md. (AP) - The nation's largest employer of mathematicians - a spy agency - has been sending its experts into Maryland schools to help prepare the next generation of number wizards.

The National Security Agency couldn't just sit by as national and international studies showed the math skills of American students trailing those of students in many other countries, said John Pettit, director of the agency's Mathematics Education Partnership Program.

"The agency was very concerned about the future of mathematics education," Pettit said.

NSA employees, known for their ability to write and break code, gave 770 talks at almost 150 different schools during the 1995-1996 school year. This school year they are on pace to do more.

Although the transition from keeping secrets to giving instruction has been difficult, it hasn't stopped with visits.

Pupils in dozens of schools use former NSA computers and equipment, with all the cloak-and-dagger stuff removed.

"In just a few years, they've become

an invaluable partner in mathematics education in Maryland," said Janie Zimmer, who oversees mathematics instruction in Howard County schools. "They've done a phenomenal job showing students the practical applications of mathematics."

NSA employees who participate are volunteers given time off from work.

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"If you understand a little more about probability, you'll end up winning more games and beating your friends more often," Blasi promised the Anne Arundel County 9-, 10- and 11-year-olds. He held their attention through three 45-minute lessons.

"It was neat seeing someone who actually uses math," said fourth-grader

Marla Muha, 10.

The outreach began in 1991 as an NSA working group on kindergarten through 12th-grade math education. The program now helps teachers design lesson plans, finds tutors to give students one-on-one support and even takes over entire schools for a day of lessons.

"Math is still looked down on sometimes as being an abstract language, but when you can show students something involving cryptology, that's fascinating to them," said Donna Crabbe, a math facilitator with the Maryland State Department of Education. "It's the kind of thing that persuades them to keep learning math through high school and college."

The effort fits in well with the goals of the Maryland School Performance Assessment Program, the state's annual tests of schools' quality, said Maureen Maidhof, Severn Elementary's fourth-grade math teacher.

"That's our main goal to support the math programs of local school systems and the state," said Julie Dunbar, an NSA program analyst who is assigned to the math education project. ■

46. Associated Press

05-20 3:16a

Former cadets: Three of Citadel's four women put in 'Nazi' company

By BRUCE SMITH
Associated Press Writer

CHARLESTON, S.C. (AP) - Of the four women admitted to The Citadel last year, three were placed in a company where swastikas were displayed on T-shirts and other Nazi symbols were glorified, two former male cadets say.

In federal court documents filed Monday, Craig Belsole and Dan Eggars said Echo Company called itself the "Stalag" and members used the phrase "Echo Uber Alles," a variation of a German slogan.

Inside a metal file locker of the company, they claim, was a picture of a

young man giving a Nazi salute.

"The cadet chain of command in Echo Company has for many years provided leadership positions to cadets who proudly displayed Nazi symbols," said Belsole and Eggars, both former members of the company.

Two of the three women assigned to Echo Company later left the strict military college, claiming they had been fiercely hazed but they did not publicly mention Nazi emblems.

"I haven't seen a swastika," Citadel spokesman Terry Leedom said. "I believe I have been in every company in the place and I have never seen a swastika."

Until now, allegations surrounding The Citadel had involved brutal hazing and sexual harassment of female cadets.

Belsole and Eggars are in court to fight the school's request for all the information the two cadets gave to the FBI, which is investigating the hazing charges.

The former cadets said they provided the FBI with photos and videotapes of Nazi symbols at The Citadel, and tape recordings illustrating how college officials tried to retaliate against them for going public with their charges.

The school denied comment on the claims, but has said Belsole and Eggars

actually were disciplined for failing to report the hazing because neither came forward until after the issue surfaced last December. Both cadets graduated on Saturday.

The Citadel dropped its male-only admissions policy after a U.S. Supreme Court ruling that a similar policy at Virginia Military Institute was unconstitutional. In August 1995, Shannon Faulkner became the first woman to enroll. She dropped out after less than a week, citing stress and her isolation as the only woman in the corps.

The Citadel admitted four more women last year, but Jeanie Mentavlos and Kim Messer left in January amid highly publicized claims that they had

been hazed and harassed. They said their clothes were set afire with nail polish remover, cleanser was put on their heads and they were forced to stand in a closet while being shoved and kicked.

The college itself announced last month that one male cadet had been dismissed, three had resigned and 10 others were given lesser punishments for hazing the two female cadets. One male cadet was cleared.

The Citadel has accepted 27 women for this fall.

The two female cadets still at the college, Petra Lovetinska and Nancy Mace, completed their freshmen year without complaining of hazing.

It was Messer, Mentavlos and

Lovetinska who were assigned to Echo Company, the group vilified by Belsole and Eggars.

"There appears to be a tradition of Nazi symbols among some Citadel cadets, concentrated among cadets who The Citadel has chosen as officers and leaders," they said. "The Nazi symbols are treated as badges of honor and passed on from year to year."

The documents also claim some cadets wore T-shirts with red swastikas during the 1993-94 school year. In the 1995 and 1996 school yearbooks, the company calls itself the "Stalag" and in 1995 used the phrase "Echo Uber Alles."■

47. The Orlando Sentinel

May 20, 1997

Schools ready to log on for big discounts

By Brenda Hegedus

TALLAHASSEE BUREAU

TALLAHASSEE — Schools and libraries could get millions of dollars to improve their computer and Internet systems under a proposal approved by the Florida Public Service Commission.

The vote Monday clears the way for public and private schools and libraries to apply for discounts of up to 90 percent for Internet access, wiring and other telecommunications services. The discounts will start Jan. 1.

The program will be paid for through a \$2.2 billion federal fund aimed at ensuring that the nation's schools and libraries are wired for the Internet.

"This is going to help offset the telecommunications costs," said Susan Zellers, associate superintendent of technology services for the Orange County school district. "We could use the dollars to do other things, like buy computers."

Schools will qualify for discounts based on financial need, which is determined by the number of students enrolled in federal free or reduced-cost lunch programs. The more children enrolled, the larger the discount. Public

libraries will get discounts based on those received by the school districts in their counties.

Schools and libraries in Orange, Lake, Seminole and Volusia counties are eligible for 60 percent to 70 percent discounts. Those in Brevard County can apply for 50 percent to 60 percent discounts. Osceola County's rate was not available.

"Approximately 65 percent of Florida's schools will be eligible for deep discounts," Education Commissioner Frank Brogan said.

A school eligible for an 80 percent discount will save more than \$4,200 a year for Internet services, Brogan said.

The money that schools and libraries save because of the discounts can be used only for new computers, software and training.

School officials in Central Florida were still assessing the effect the program will have on their classrooms.

Orange County's school district has linked all of its 130 schools to the Internet, but 92 still lack the ability to

hook all of their classrooms together in a computer network. The federal fund could help with that project, Zellers said.

She didn't know the total amount that Orange County could save, but the district pays about \$600 on average to install a line, plus a \$106 monthly fee.

Schools and libraries can begin applying for the discounts July 1. The PSC has yet to decide who will handle the administration of the program, which will be funded by the telecommunication providers who will compete to provide the services.

Once an application is approved, it will be posted on the World Wide Web. Service providers will bid to serve that school or library. It is up to the school or the library to choose the best bid.

Marilyn Hoffman, director of community relations at the Orlando Public Library, said she is very excited about the potential savings.

"This discount will be a great help to us because our computers are always in use and are extremely popular," Hoffman said.■