

The problem with math instruction

If we struggle to understand why Johnny can't read, we may be even more confused about why Johnny does the above math problem and gets, as you see, the wrong answer.

Tuesday's latest marquee study of education had a catchy title: "Adding It Up: Helping Children Learn Mathematics."

The National Research Council panel spent 18 months poring over research. Its focus was on teaching K-8 children. Its 450 typescript pages of sleep-inducing committee-prose can appear to be maddeningly imprecise. Yet in the report are some fascinating pieces of information. One favorite:

Homework's been studied to death, but all the questions asked were about how *much* to assign. There is essentially no research on what kinds of work to assign –

what out-of-class work tends to help students learn. Teachers have been left to go with the book, or their gut, or experiment. No wonder Johnny gets the wrong answer.

The panel pokes holes in teacher training, notes that many teachers of math are math-phobic themselves, suggests more research. But its strongest recommendation will also be toughest for schools to implement:

Focus on coordination.

□ After decades of debate over whether to emphasize rote learning of math principles or exploration of concepts, the committee counsels avoiding the extremes.

□ Teachers need better ongoing training. They need math specialists in every elementary school, and they need to be encouraged to

Continued on Page 6

Why the rush for a plan?

Courts months, years from setting the rules; do we really want 2nd 'Showcase' disaster?

By ARAMINTA S. JOHNSTON

CMS Superintendent Dr. Eric Smith and representatives of the Charlotte business community are once again pressuring school board members toward decisions on pupil assignment.

The pressure, sources say, is coming not only from Smith, but also from the Chamber of Commerce and the business community, as well as the Education Foundation.

The Charlotte business community is the source of a substantial portion of the Education Foundation's funding.

The pressure comes despite the fact that the issue of pupil assignment will be before the courts for argument again in less than a month.

Attorney Luke Largess, who will argue the case before the Fourth Circuit Court of Appeals on behalf of the Swann plaintiffs, was surprised to hear the report.

"The court's stay [on board action] is still in effect. If the board tried to act, it would be violating the law," Largess said.

"I would hope that the board has learned its lesson. I would

Continued on Page 2

Why the rush for assignment plan?

Continued from Page 1

think that trying to move ahead now would be a public relations disaster for them," he added. "People don't want to get whipsawed again."

Just last month, Smith and his board found themselves in a legally and politically difficult situation when a three-judge panel of the Fourth Circuit Court of Appeals handed down a ruling different from the one Smith and some board members apparently expected.

For the preceding year Smith had strongly pressured his board to approve a pupil assignment plan that would satisfy District Court Judge Robert Potter's 1999 ruling that the Charlotte school system has eliminated all vestiges of segregation and could no longer take race into account in its operations.

Smith did so despite the fact that Potter's ruling had been stayed by the appeals court, and an appeals court panel, which had heard arguments in the case in June 2000, was expected to rule at any time on whether Potter's decision was legally correct.

Smith and some school board members apparently believed they could predict how the panel would rule. They were convinced that the ruling would uphold Potter's decision.

They were wrong.

The appeals court panel issued its ruling just days before parents were to begin making choices

about their children's school assignments for the coming year.

The board was forced to cancel the "Showcase of Schools" event the night before it was scheduled to take place because proceeding with the assignment plan that Smith had insisted on would have been illegal – contrary to the panel's decision.

On February 27, the full Court of Appeals will hear arguments in the case in Richmond.

The majority of judges on the court are conservatives, some extremely so. That fact has apparently convinced some Charlotteans that the court will quickly issue a ruling that will reinstate Potter's decision.

Attorney Largess cautions against such assumptions. "We can't read tea leaves. People shouldn't assume that we're going to lose," he said.

"It is not the case that a full court takes a case only when they're going to overrule a panel," he said. In the past year the full court affirmed a case after taking it en banc, he said.

"The court may well have taken the case solely because a majority of judges see constitutional issues in it, and it has previously reviewed cases involving constitutional questions when asked to do so."

Although the appeals court may rule within a month or two after it hears the February arguments, Largess warned against assuming that that will be the case. He pointed to other cases of a similar nature that the court has heard in recent years in which it took the judges over a year to reach agreement on a decision.

Even if the court does rule quickly, it is all but certain that there will be further legal maneuvering, including requests – which may or may not be granted – for a stay of the ruling by one party or another.

In addition, however the appeals court rules on any of these matters, it is also likely that their ruling will be appealed to the U.S. Supreme Court which, in turn, may or may not agree to hear the case.

Whether or not the appeals court grants a stay of its ruling and whether or not the Supreme Court agrees to hear the case, it is likely that at some point in the future it will be returned to federal district court in Charlotte for rehearing.

At this point it is impossible to predict when that might be or how long it might take for the district court to rule once it rehears the case.

Under the circumstances, Largess pointed out, it would seem dangerous for Smith and the school board to proceed until the case is decided.

That doesn't mean, of course, that Smith and the school board should not be planning. About a year ago, the board instructed Smith to plan around two possibilities: Potter's ruling being upheld, and for it being thrown out.

Only one plan emerged – the Showcase of Schools.

This time, maybe the best approach is to cool the rhetoric, show the public that work is underway on both a Plan A and Plan B, and then wait on the courts.

Educate! a newsletter of The Swann Fellowship

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The name: The Swann Fellowship was named for Darius and Vera Swann, who on behalf of their son James became the lead plaintiffs in Swann vs. Mecklenburg in the 1960s. Darius Swann was the first African American Presbyterian missionary ever assigned outside of Africa. His experiences in India led him to appreciate the value of an integrated society for human development.

The vision: As people of faith, our vision is that all children in the Charlotte-Mecklenburg School System will have excellent educational opportunities which are both equitable and integrated.

The background: Formed in 1997 out of several Charlotte religious congregations, the Fellowship focuses on being a witness to the value of diversity, and educating the public on public school issues as they relate to this and allied subjects. The Swann Fellowship is a nonprofit organization exempt under Section 501(c)(3) of the Internal Revenue Code 56-2106776.

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Fewer N.C. school dropouts, but look at how many there still are

Thursday's release of data on North Carolina dropouts for last school year brought good news for many school systems: Most systems were failing to do their job with fewer children.

But for the state as a whole, the picture is still bleak: 24,596 children last year in grades 7-12 walked out of school and gave up on their future.

State board Chairman Phil Kirk took the decline in dropouts, from 4.6% to 4.34%, as a sign that higher standards are not pushing kids out the door. Key portions of those standards won't take effect until this spring, but Kirk was upbeat: "I am pleased to see that more young people are making the wise choice and staying in school. That is the best choice they can make to become successful adults later on."

So how did North Carolina fail with 24,596 kids?

And why did Charlotte-Mecklenburg fail with 2,133 kids?

The chart at the right lists the appalling toll: Seven hundred kids west of Charlotte in Gaston County neither enrolled nor graduated nor moved to another education program. The statistics do not include students who left for home school, another system or were absent on inventory day. They don't count the dead. No, those counted are more likely just in dead-end jobs.

The educational establishment focuses on the grade 7-12 statistics: With a larger number of students in the base, the percentage of students who drop out becomes smallest that way.

But 92% of Charlotte-Mecklenburg's dropouts are leaving from high school. Statewide, it's 95%. So the really useful percentages are in the box at the left. Statewide, the dropout rate is 6.4%. It's 6.8% in CMS.

Two things worthy of note:

□ The state acknowledges that there is some double-counting of stu-

So many kids left behind		
Number of youth in grades 7-12 who dropped out in '99-'00		Percentage Rate
2,133	MECKLENBURG COUNTY	4.76
1,114	WAKE COUNTY	2.69
1,104	GUILFORD COUNTY	3.99
843	FORSYTH COUNTY	4.37
707	GASTON COUNTY	5.10
559	BUNCOMBE COUNTY	4.87
543	DURHAM COUNTY	4.25
393	NEW HANOVER COUNTY	3.95
344	UNION COUNTY	3.63
329	IREDELL-STATESVILLE	4.53
311	CABARRUS COUNTY	3.67
247	LINCOLN COUNTY	5.01
207	FRANKLIN COUNTY	6.12
83	ORANGE COUNTY	3.05
81	KANNAPOLIS CITY	4.30
76	ASHEVILLE CITY	3.99
60	MOORESVILLE CITY	3.32
32	CHAPEL HILL-CARRBORO	0.75

dents. A student who quits, comes back, then quits again is counted twice. But in the main, the numbers are for just one year. Two thousand quit this year, two thousand more will quit next year, etc. The REAL dropout rate, which is the number of, say six-graders who won't ultimately get a diploma, has bobbed around at the 25% level for many years. When the country was agricultural, that worked. Will it work in the high-tech Internet age?

□ The statewide average dropout rate masks wide variations among school systems. Our friends down the road in Wake manage a 4.14% rate while CMS is stuck at an above-state-average 6.8%.

Educators argue that CMS has more at-risk kids than Wake. Money's not the entire answer, but if it's true that Mecklenburg has more students with big needs, politicians should be looking at the willingness to commit local money to education.

And last time we looked, Wake was putting proportionately more of its community's wealth into education than Mecklenburg. Is there a connection?

High school dropouts, selected systems, '99-'00

	Percentage rate
Lincoln	7.61
Gaston	7.53
Buncombe	7.21
Iredell	6.91
Mecklenburg	6.82
NORTH CAROLINA	6.43
Forsyth	6.42
Kannapolis	6.20
Durham	6.08
Guilford	5.97
New Hanover	5.83
Asheville	5.60
Cabarrus	5.48
Union	5.41
Mooresville	4.86
Orange	4.73
Wake	4.14
Chapel Hill-Carrboro	1.15

Briefs

Catching Up: The Hartford Courant reports that its high schools have separated out ninth-graders from the rest of the students and have grouped students by ability to attack a 16.8% dropout rate. By starting reading work at as low as second-grade level, progress has been rapid, and dropouts last year dropped to 11.5%. As it changed curriculum, the system also overhauled its attendance oversight, and got teachers to meeting about individual students so their curriculum, and in some cases even their school hours, would make it easiest to reach them. The Courant said the program emphasizes reading because “youngsters who can’t read well get lost in their classes.”

www.ctnow.com

Busing By Choice: The Minneapolis schools have received about 300 applications for 500 seats set aside at magnet and suburban schools for low-income inner-city students who want to leave their neighborhood schools. The set-asides result from a settlement with the NAACP, which sued the state, saying inner-city schools failed to give all students the adequate education mandated by the state constitution. School officials told the Star Tribune it would be fall before they could judge parents’ reaction to the set-aside. The program also offers suburban parents places at inner-city magnet schools; the story gave no numbers on how many applications had been received.

www.startribune.com

Special Education: Pennsylvania’s state board of education has sent to legislators some revisions of special education regulations. Among them, according to the Pittsburgh Post-Gazette: turning caps on class size, now as low as 8 students per class, into

Public education: ‘It’s a Time for Hope’

Excerpts from a statement by the Davidson Ministerial Assn. distributed to North Mecklenburg-area congregations on Jan. 21:

"At this crucial point in history, we are concerned about our public schools, and the children who need them for learning and life. Despite the tensions, and perhaps because of the tensions, we are hopeful, and believe a bright day for education and our children is dawning....

Now is the time for citizenship. Our Founding Fathers assumed we would always be the kind of people to sacrifice private, selfish interests for the public good – or, rather, that our self-interest is best served when we work for the good of everyone else.

Now is the time for diversity. Diversity is not some ideal. Diversity is reality. Our county, and even our end of the county, is no longer homogeneous, but delightfully peopled by white and black, Hispanic and Asian, rich and poor. However school lines are drawn, we believe that our children, our families, and our churches and synagogues are the losers when we only interact with people who look like ourselves.

Now is the time for community. As people of God, we do not enjoy the possibility of ignoring those who are disadvantaged. In fact, as people of God we find our joy in zealous efforts on behalf of the disadvantaged. We are committed to equity, to the parity of which the court has spoken, that every child have an excellent education. Wherever lines wind up being drawn, we must cross all lines and ensure that all children, all facilities, are resourced.

Now is the time for the faith community to lead, to set the example for healing and compassion and morality, for a vision of God's good will for us all. Now is the time for hope."

“recommendations,” and prohibiting parents going to administrative hearings from being represented by lay advocates. Critics say the revisions use the cover of conforming state rules to federal law as a way to downgrade special education services.

www.post-gazette.com

Reading Failures: A lengthy Los Angeles Times investigation says half of California’s 651,000 special ed students are “learning disabled,” a label that all but means that they weren’t successfully taught to read. The story cites studies that the problems encountered by these students could have been reduced or eliminated by the basics of a phonics program. The number of learning disabilities began rising as the

state downplayed phonics instruction in the lower grades.

www.latimes.com

Class Size Dropping: The Philadelphia Inquirer annual report card on 167 area school districts found that one-third of Pennsylvania and one-quarter of New Jersey districts say their second-grade classes have dropped to 20 or fewer children. Camden (NJ) County’s Brooklawn district has reduced all lower grades to an average of 15. Says Superintendent John Kellmayer: “In the early grades, class size of about 17 is the magic number to produce gains in academic achievement that will hold over time.”

<http://news.philly.com>

Continued on Page 5

Briefs

Continued from Page 4

Training Undersubscribed: Major airlines and general aviation companies will be trying to hire thousands of airline mechanics for top-paying jobs this decade, but the Detroit Free Press found a training program at Western Michigan University's College of Aviation running at half capacity. Officials are looking at concentrating the four-year program into a two-year course of study to attract more students.
www.freep.com

Tables Turned: At Dorsey High in L.A., 300 English-speaking history students learned firsthand the perils facing non-English speakers in the U.S. in a most unusual way. The students were sent to the library, which for a day had been turned into booths representing a medical clinic, bank, post office, rental car agency, etc. Immigrant children operated the booths, and spoke only their native tongue as they processed the students for bank accounts, driver's licenses, etc. A Los Angeles Times reporter found Teama Hunter standing in a corner. "This is very confusing," she said. "It doesn't make any sense." Such sentiments hit home with El Salvadoran emigree Julian Recino, who lived in real life what Hunter and others were experiencing. "It feels bad," he said. "You don't know what to do. You don't know how to speak." History teacher James Berger has conducted the exercise for a decade.
www.latimes.com

Parent Fund-Raising: Andrew Stark explores the ethics of parents focusing on fund-raising that benefits only their own children's schools in an article in Dissent Magazine. Noting that many parents simply won't support fund-raisers if all schools benefit, Stark points to Portland, Ore. The district allows parents wide latitude in supplementing system

Sound off! for quality education

Your words in support of a quality, equitable, integrated education can help make the case for community support of Charlotte-Mecklenburg Schools. Pick up your pen! Or get your mouse in motion! Here's information on how to submit your letters to area media.

The Charlotte Post: By e-mail: thepost@clt.mindspring.com; by fax: 704-342-2160; by mail: Editor, The Charlotte Post, 1531 Camden Road, Charlotte, NC 28203-4783.

The Charlotte Observer: By e-mail: opinion@charlotteobserver.com; by fax: 704-358-5022; by mail: The Observer Forum, The Charlotte Observer, P.O. Box 30308, Charlotte, NC 28230-0308.

The Charlotte World: By e-mail: warren.smith@thecharlotteworld.com; by fax: 704-503-6691; by mail: 8701 Mallard Creek Road, Charlotte, NC 28262-9705.

The Leader: By e-mail: editor@leadernews.com; by fax: 704-347-0358; by mail: 800 E. Trade St., Charlotte, NC 28202-3014

Creative Loafing: By e-mail: charlotte@creativeloafing.com; by fax: 704-522-8088; by mail: P.O. Box 241988 Charlotte, NC 28224-1988.

Educate!: By e-mail: SwannFello@aol.com; by fax: 704-342-4550; by mail: 1510 E. 7th St. Charlotte, NC 28204-2410.

resources, even allowing them to raise money to pay for additional teachers at their kids' schools. But the system insists that a third of what they raise is shared with all schools.

www.dissent-magazine.org

Getting Ready: January's Community Building Initiative newsletter says they're in year one of a Leadership Development Initiative to "cultivate a network of community leaders on issues of racial and ethnic inclusion and equity." If you haven't heard much from CBI, it may be because year one, they say, is being devoted to "intentional work with CBI's own Leadership Team."

Class Size Studied: Wisconsin's effort to cut class sizes for low-income children to 15, now in its fourth year, is at the stage that studies are looking at teaching strategies that work best in the smaller classrooms, according to Education Week.

The successful classroom is structured. Teachers provide fre-

quent feedback. And when teachers have time with individual students, the time is best spent on basic skills. What works, said a University of Wisconsin research team, is rather unlike today's approaches of projects, problem-solving lessons and more freedom for the individual child.

Researchers also pointed to the need for more study of their tentative conclusion that kids get the most from small class size in first grade. Educational gains were less pronounced in small second-grade and third-grade classrooms.
www.edweek.com

Report Cards: Eighteen Boston elementary schools are testing a new report card strategy, the Boston Globe says. Instead of a single grade for reading, say, teachers note progress on the subskills that create effective reading. And two grades are given for each subject: one for achievement, the other for effort. "Teachers had difficulty grading students who tried hard but did poorly," the story said.
www.boston.com

The problem with math instruction

Continued from Page 1

stop working in isolation: They should plan assignments and teaching concepts together, sharing information on what works.

□ Piecemeal reform has left a mishmash. School systems should better coordinate curriculum, the instructional materials, testing, instruction, professional development and even how schools are organized to teach math.

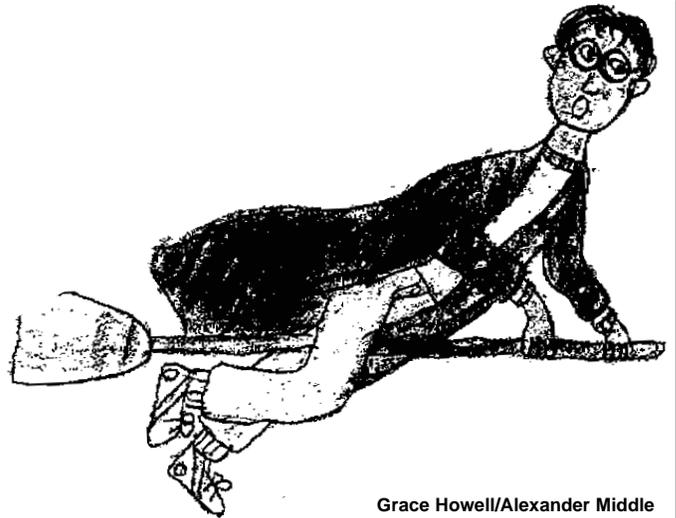
□ Learning in groups appears to be effective, though not in all social and cultural groups. Mixing the groups by ability benefits low achievers without holding back the high achievers, the panel says. But all groups fail unless some attention is paid to helping students learn how to learn in groups. Just pushing the tables together is not enough.

And there are nonacademic benefits: "Cooperative grouping arrangements promote friendships and positive social interaction among students who differ in achievement, gender, race, or ethnicity and they promote acceptance of handicapped students who have been placed in regular classes."

Parents watching their children progress through the times tables and on to algebra and calculus likely assume that the math teacher who excels is one who knows her subject well and knows how to teach. This report has much to say about both, but says there's simply no proof that a teacher's greater knowledge of math leads to a student's better learning of math.

It does say that a college major in math shows up in higher-performing students. But after a certain number of courses, classroom effectiveness fell. "Simply increasing the number of mathematics courses required of teachers is not likely to be successful," the panel concludes.

Instead, what the panel thinks



Grace Howell/Alexander Middle

Young Artists:

Take up your black pens and share with us what you see! Send a message to SwannFello@aol.com with your words, digital photographs and digital artwork. Mail paper submissions to The Swann Fellowship, 1510 E. 7th St., Charlotte, NC 28204-2410.

is needed is to see that a teacher's training – in the nuts and bolts of math and in how children learn – is not a process that can be completed in teacher training.

"Professional development beyond initial preparation is critical for developing proficiency in developing mathematics," the panel concludes. "However, such professional development requires the marshalling of substantial resources.

"One of the critical resources is time. If teachers are going to engage in inquiry, they need repeated opportunities to try out ideas and approaches with their students and continuing opportunities to discuss their experiences with specialists in mathematics, staff developers, and other teachers.

"These opportunities should not be limited to a period of a few weeks or months; instead, they should be part of the ongoing culture of professional practice.

"Through inquiry into teaching, teacher learning can become generative and teachers can continue to learn and grow as professionals."

Have a cookie!

□ *Jane has 24 cookies. She wants to put 6 cookies on each plate. How many plates will she need?*

□ *Jeremy has 24 cookies. He wants to put all the cookies on 6 plates. If he puts the same number of cookies on each plate, how many cookies will he put on each plate?*

These two problems correspond to the measurement and sharing models of division.... Young children using counters solve the first problem by putting 24 counters in piles of six counters each. They solve the second by partitioning the 24 counters into six groups.

In the first case, the answer is the number of groups; in the second, it is the number in each group.

Until the children are much older, they are not aware that, abstractly, the two solutions are equivalent. Teachers need to see the equivalence so that they can understand and anticipate the difficulties children may have with division.

– *Adding It Up: How Children Learn Mathematics*
National Research Council, 2001