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# PCSM NEWSLETTER

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Leaders in Mathematics Education

January 2008

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PENNSYLVANIA COUNCIL OF SUPERVISORS OF MATHEMATICS

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## PRESIDENT'S MESSAGE

### *From the President*

- Jane Wilburne

As the new President of the Pennsylvania Council of Supervisors of Mathematics, I am thrilled to take this opportunity to wish everyone a Happy New Year and wish you the best for a productive, healthy, and interesting one. Our positions as mathematics educators and mathematics leaders are constantly challenged in today's academic environment with the pressures to meet AYP and increase student achievement. The findings from the National Mathematics Advisory Panel are to be released at the end of February and should provide recommendations for topics such as: curriculum content, the professional development of mathematics teachers, pre-service training, research, and assessment practices. The panel's recommendations may impact our role as an organization responsible for supporting mathematics education leadership at the school, district, college/university, state, province, and national levels. This is an important time to be involved in mathematics education and to connect with other mathematics leaders across the Commonwealth.

**Please check the date on the mailing label of the newsletter. If the date is 2008 (08) or earlier, it is time to renew your membership. Save money by renewing for three years. If each of us signs up a new member, our membership will double!**

My first task is to thank Mary Foley for her outstanding leadership as the President of PCSM for the past six years. Her organizational skills and her ability to get things done were vital to keeping the organization strong and productive. I know I will lean on her for advice and support as I take on this important role. Thanks, Mary, for all your hard work and dedication to PCSM!

The 30<sup>th</sup> Annual PCSM meeting was a great success. Approximately 78 members attended the events held in conjunction with the Pennsylvania Council of Teachers of Mathematics Annual Conference in Valley Forge, PA in November 2007. The executive director of NCTM, Jim Rubillo, presented "The Dialogue on Curricular Coherence: NCTM's Focal Points, the National Math Panel & Policy Directions." Janie Zimmer, Eastern Director of the National Council of Supervisors of Mathematics, shared "NCSM Projects and Position Papers." Jim Bohan, Director of

### **In this Issue:**

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PVAAS discussed, "Presentation of the Standards Aligned System." Everyone appreciated the timely and valuable information presented, and the conference goers enjoyed much lively discussion.

Of course, the meeting would not have been a success without the support of the book publishers and their representatives who are always so pleasant to work with. McDougal Littell/Houghton Mifflin provided breakfast, Prentice Hall the coffee break, and Scott Foresman the luncheon. Portfolios from Macmillan/McGraw Hill, and pens and bags from Harcourt were given to each attendee.

We have some new things planned for the upcoming year, so watch your mail. The PCSM listserv is up and running thanks to the work of Janie Zimmer. Some professional development materials have been purchased for your use and will be sent to the current updated members. Also, keep next year's date marked on your calendars: November 6, 2008 at Split Rock in the Poconos. The meeting is sure to be an exciting one.

Looking forward to working with everyone and moving mathematics education in the right direction!

Jane Wilburne  
[Jmw41@psu.edu](mailto:Jmw41@psu.edu)

### *From the Editor*

- **Cathy Schloemer**

Being a leader in mathematics education, do you ever wonder if you have become too obsessed with mathematics education in general and with, well, just *numbers* in particular? I mean, for example, I realized a couple days ago that this is the 8<sup>th</sup> time I have put together a PCSM newsletter and that I hope to have it copied by January 18<sup>th</sup> – of, naturally, 2008. Why do I think of such things??

And then the part about being obsessed with mathematics education: do you ever sense that

you read 'way too many articles with titles like, "NAEP Reading and Math Scores Rise," "Bad Testing Drives Out Good Learning," and "Problem Solving Around the World: Summing Up the State of the Art"? And not only do you read 'way too many articles with these kinds of titles, but you actually enjoy doing so?

OK, maybe you are not as obsessed with this kind of thing as I am; and actually, if you're not, that's all right. Three times per year I cull through many tens of e-news reports (and a few paper sources too) to try to bring you the best of the best of current news in mathematics education that could make a difference to mathematics education leaders in Pennsylvania. This means you should be able to get away with reading less e-news yourselves! Of course, I also include news related directly to the PCSM organization, especially news about our excellent annual conference, membership, awards, and so on. My goal is to make the PCSM newsletter a good source of interesting and helpful information about the current state of mathematics education in general and about our organization in particular. The newsletter is here for you!

We are going to be trying something new with this issue. Although you will receive your paper copy of the newsletter, we are going to try sending an email copy as well, thanks to the generous efforts of Janie Zimmer, who has created a PCSM listserv. (Thank you, Janie!) An e-copy may make it easier for you to quickly check out electronic sources that are included in each newsletter, for example. We hope the email version of the newsletter is helpful and not just another piece of e-junk for you to delete.

Remember, this is your newsletter. Please send correspondence to me at:

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 P. O. Box 884  
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 724-465-7828  
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And, as ever, thank you, Chris Czapleski, for your continuing help as proofreader. I could not write this newsletter without your useful suggestions and your eagle eye for my mistakes!



**PCSM AWARDS**

Each year a call is placed in this newsletter for nominations for PCSM awards. The response may be defined as underwhelming. Perhaps there is a lack of clarity about eligibility, qualifications or previous recipients. Thanks to the able assistance of PCSM historian, Hank Field, a list of previous recipients is included in this issue. Please keep it for future reference.

The names of some awards seem to have mutated over the years. There are five named PCSM awards: Outstanding Contributions to PCSM, Outstanding Contributions to Mathematics Supervision, Distinguished Service to PCSM, PCSM Hall of Fame, and Past-President’s Award. The distinction between Distinguished Service and Outstanding Contributions to PCSM has been questioned.

Again, Hank has provided an historical perspective. The Outstanding Contributions award was designed to recognize on-going contributions of time and talent to the organization in a variety of ways, while the Distinguished Service award is granted for leading some significant task or event sponsored or promoted by PCSM.

Recipients of all awards, with the exception of Outstanding Contributions to Supervision, must be PCSM members. Official nominations are accepted only from PCSM members; however the member may furnish supporting documentation from others acquainted with the work of the nominee.

At the PCSM 2007 Meeting at Valley Forge, out-going President, Mary Foley, was presented with the Past President’s Plaque. Because of the change from spring to fall meetings, Mary in effect served an extended term as president and presided over three outstanding annual meetings.

Janie Zimmer was the recipient of the Outstanding Contributions to Supervision Award. She is a recognized leader in mathematics education who has provided years of support in her position at RBS and has advanced mathematics supervision in her role as NCSM Regional Director. In particular, Janie has made significant contributions to the planning of NCSM leadership academies.

**Each year when PCSM awards are presented at the Annual Meeting it is clear that recipients value the honor of being recognized by their peers. Please nominate a deserving colleague and give him/her a special moment at the PCSM 2008 meeting. A nomination form is included with this newsletter.**

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**The National Mathematics  
Advisory Panel Due to Present  
Report**

**By Janie Zimmer, Eastern 2 NCSM  
Representative**

After 20 months of examining research, engaging in discussion, and struggling to come to consensus, President Bush’s National Mathematics Advisory Panel (NMP) plans to present its report to the President and Secretary Spellings by February 28, 2008. The report covers a broad range of topics with five major Task Groups focusing on conceptual knowledge and skills, learning processes, instructional practices, teachers and teacher education, and evaluation. Three additional Subcommittees focused on standards of evidence, instructional materials, and a

survey of Algebra I teachers. In addition to the over all NMP Report, each Task Group and Subcommittee produced a more detailed report that will be available separately.

Students' success in mathematics, and algebra specifically, hinges largely on students mastering a focused, clearly defined set of mathematics topics in the PreK-8 grades, the Panel concludes. What students learn and when they learn it is critical in preparing students to be successful in Algebra. The NMP Report also defines the core topics that must be a part of an authentic Algebra course.

A large part of the Report spells out critical topics and concepts in mathematics that must be included in Pre-K through 8 mathematics instruction: fluency with whole numbers, fluency with fractions, and particular elements of geometry and measurement. The Panel suggests benchmarks for state frameworks and school districts.

“Teachers are critical to students’ opportunities to learn,” the Report states. “Substantial differences in mathematics achievement of students are attributed to differences in teachers . . . the average difference in student achievement over the course of the school year between being assigned a top-quartile or a bottom-quartile teacher is 10 percentile points.”

To some, these findings may seem to be *astounding* – to others, they may seem to be *no-brainers!* But the research surrounding key elements of teacher pre-service education, professional development, and certification is sketchy, the Panel found, and more robust research needs to be done.

Issues surrounding equity are important. Equity was the main focus addressed by NSCM the many times that NSCM spoke to or wrote to the Panel. How can we assure equal access for *all students*, including those students who seem unmotivated, who have physical or learning disabilities, who are native speakers of other languages, who are economically challenged, or who have families unable to provide support? How do we motivate these students? How do we support them and help them to be successful?

The Instructional Practices Task Group addressed equity as much as the available research would allow. “Explicit instruction for LD students was found to improve students’ performance in word problem solving, computation, and transfer tasks,” the Report tells us. They go on to recommend that “students with learning disabilities and other students with learning problems receive some time each day when instruction is explicit

and direct . . . this need not – and probably should not – comprise all the mathematics instruction these students receive.”

Throughout the report, the Panel took consistent note of the President’s emphasis on the “best available scientific evidence” and set a high bar for admitting research results into consideration. Although the 19-member panel has reviewed an estimated 18,000 research documents and reports as part of its work, there were many matters of concern related to mathematics education for which the Panel found no research or insufficient research. Many times there were practices or issues that some considered including because they were just “self-evident.” But the question always came up: “Do we have strong research to support that?”

Many practices that *look like* they work, or that *seem like* they should work, or that many of us “*feel*” that they work, were not included as findings or recommendations because they have no strong research evidence behind them to show increased student achievement. Because of this, we may be surprised by recommendations that we may expect, but that may be missing from this report.

One such example of this is the model of the elementary mathematics specialist/lead teacher/coach. Many school districts throughout the country are using such models and are pleased with what they feel are positive outcomes. When the Panel looked at such models, however, they found “no high-quality research showing that the use of . . . these produces greater gains in students’ mathematics learning.” In this practice, as in many other practices, the Panel recommends that further research be done with “large enough samples of students, classrooms, teachers, and schools to identify reliable effects.”

We await this report for many NMP findings and recommendations that will be useful in our endeavors to strengthen our mathematics programs.

**For more information on the National Mathematics  
Advisory Panel visit  
<http://www.ed.gov/about/bdscmm/list/mathpanel/index.html>.**



## **MSU Study Says U.S. Math Teachers Poorly Prepared**

By Lori Higgins

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From the Detroit Free Press, Tuesday, December 11,

2007. See  
<http://www.freep.com/apps/pbcs.dll/article?AID=/20071211/NEWS06/71211040/0/BLOG19>

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 Full report is at [http://usteds.msu.edu/related\\_research.asp](http://usteds.msu.edu/related_research.asp)  
 -- scroll down and click on MT21Report to download the report to your computer.  
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An international study released this morning on the preparation of middle school math teachers in the U.S. and five other countries indicates that part of the cause for students' poor performance on the subject in those middle school grades likely is the result of their teachers' poor preparation.

The Mathematics Teaching in the 21st Century was released this morning in Washington by the Center for Research in Mathematics and Science Education at Michigan State University. It studied preparation programs in the U.S., Taiwan, South Korea, Bulgaria, Germany and Mexico.

Among the findings: mathematical knowledge among future teachers was highest in Taiwan and South Korea in all five areas of math - algebra, functions, number, geometry and statistics. The U.S. performance lagged behind, with scoring being anywhere from the middle of the six countries to almost three quarters of a standard deviation below the international means. Also, future teachers in Taiwan and South Korea reported taking far more courses that covered advanced math than future teachers in the U.S.

"Future teachers studied only 43 percent of the advanced topics compared to the 79 to 86 percent studied by Taiwanese and Korean future teachers," the report says. The study suggests that U.S. teacher preparation institutions focus more on the art of teaching, rather than on mathematical knowledge and math education, in preparing middle school math students.

(Shared by Jerry Becker 12/ 13/07: [jbecker@siu.edu](mailto:jbecker@siu.edu) )

  
**Summary of NAEP Results for Mathematics**  
**Source:** IES Newsflash - 25 September 2007  
**URL:** <http://nationsreportcard.gov>

"The Nation's Report Card: Mathematics 2007" reports national and state-level performance of fourth- and eighth-graders in mathematics. National data are compared to previous assessment results from 2005

and 1990.

Mathematics findings from 2007 include the following:

- \* Fourth- and eighth-graders scored higher than in all previous assessment years.
- \* White, Black, and Hispanic students at both grades (4th and 8th) demonstrated a better understanding of mathematics compared to all previous assessment years.
- \* The White-Black score gap narrowed at grade four when compared to 1990 and at grade 8 when compared to 2005.
- \* Fifteen states (14 states and Washington, DC) improved at both grades, with fourth-graders in an additional eight states, and eighth-graders in 11 states scoring higher.
- \* Although both males and females showed increases in 2007, male students scored 2 points higher on average than their female counterparts. The gap between the two groups in 2007 was not significantly different from the gaps in 2005 or 1990. Differences in performance between male and female students in 2007 varied somewhat when examined by content area. Male students scored slightly higher on average than female students in Number Properties and Operations, Measurement, Data Analysis and Probability, and Algebra. Females scored slightly higher than males on Geometry. For complete results and to download the report or view the press release held on September 25, visit <http://nationsreportcard.gov> Direct link to the math Report Card is available below:

"The Nation's Report Card: Mathematics 2007":  
<http://nces.ed.gov/nationsreportcard/pubs/main2007/2007494.asp>

(Shortened from COMET 8(23) – 27 Sept., 2007  
<http://comet.cmpso.org/> )



**PISA 2006 Results in Mathematics**  
 (Printed at the request of NCTM)

The 2006 Programme for International Student Assessment (PISA) results released on December 4 concentrated on science, with a brief update in the math literacy skills of 15-year-olds who are at an age when compulsory schooling ends in most countries. The 2003 PISA looked in detail at mathematics, and the 2009 assessment will again highlight mathematics. The PISA differs from other assessments by measuring students' knowledge in the context of everyday situations and their ability to take what they know and apply it to unfamiliar problems.

PISA is a program of the Organisation for Economic Cooperation and Development (OECD). The OECD is composed of 30 developed countries, which, together with 27 partner countries whose students took the 2006 test, make up 90 percent of the world economy. More than 400,000 students took the test in 2006, which has been given every three years since 2000.

PISA 2006 results ranked U.S. students 25th out of 30 OECD countries in mathematics. This ranking places them lower on average than their counterparts in the participating countries in both math literacy and problem solving. The difference between the U.S. mean score in 2003 (483) and 2006 (474) is not statistically significant. What has changed is that the performance of students in other countries is improving while U.S. students' performance remains static. The PISA mean for OECD countries was set in 2003 at 500 and is the benchmark against which mathematics performance is measured in PISA 2006.

Pushing this trend is that students in other countries are graduating and attending college at higher rates, while rates for U.S. students are declining in both.

In today's global environment, international comparisons are relevant because Americans are in competition with workers around the world. American businesses and economists are increasingly aware that the quality of U.S. workers will determine the future viability of the American economy.

In the 2006 PISA, mathematics was reduced to 120 minutes from 210 minutes given to the subject in 2003, providing an update rather than an in-depth analysis.

The information gathered from PISA 2006 supports the National Council of Teachers of Mathematics' philosophy that students who learn mathematics with understanding are better prepared to solve problems that they may face in real-life situations than students who have not fully grasped mathematics concepts.

### Talking Points for PISA

\*In 2006, U.S. students earned a lower average score in mathematics literacy and problem solving than students in OECD countries. U.S. students had a mean score of 474 while the OECD average was 498 points. The difference between the U.S. mean score in 2003 (483) and 2006 is not statistically significant.

\* The U.S. had a below-average proportion of top performers, with only 7.7 percent of 15-year-olds reaching at least level 5 on the mathematics scale,

compared to an average 13 percent for the other OECD countries. These higher achievers are the most likely to pursue careers in science or math.

\* The percentage of U.S. students performing at low proficiency levels was higher than the average for students of OECD member countries. Twenty-eight percent of U.S. students demonstrated very low proficiency in math, performing at levels that can limit an individual's ability to participate in society and the labor market.

\* In 35 of the 57 countries participating, male students outperformed female students. In the United States, males outperformed females at level 4 and above. Data detailing the differences can be found in the results for PISA 2003 and will again be provided in the PISA 2009.

### What else can we learn from PISA?

Institutional tracking is closely related to socioeconomic background in its impact on student performance. The earlier students were tracked, the stronger the impact of socio-economic background on performance. Schools that placed students by ability for all subjects had lower student performance, on average, than schools that did not.

An adequate supply of teachers and educational resources across countries are associated with positive student outcomes, but these effects level out after taking socioeconomic background into account, since students from more advantaged socioeconomic backgrounds tend to get access to more resources.

The most important benchmark for U.S. students is how they compare to students in other countries as we are in a global economy.

### Additional Information

PISA Web site: [www.pisa.oecd.org](http://www.pisa.oecd.org)

<<http://www.pisa.oecd.org/>>

US Web site: [www.nces.ed.gov/surveys/PISA/index.asp](http://www.nces.ed.gov/surveys/PISA/index.asp)

Sample items:

[www.nces.ed.gov/surveys/PISA/Items.asp?SectionID=2](http://www.nces.ed.gov/surveys/PISA/Items.asp?SectionID=2)

### What can U.S. math teachers do with the PISA information?

PISA has collected a variety of background information on 15-year-olds. Teachers may be interested in the student questionnaire and responses posted at the PISA Web site.

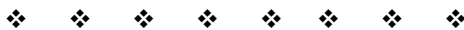
Although the PISA results for 2006 are focused on

science, much of what is said about students' socioeconomic status, gender, race/ethnicity, and expectations holds true for students of mathematics.

PISA results also provide information on immigrant status and student performance and the role parents can play in raising student performance and moderating the impact of socioeconomic background.

Particularly relevant for teachers is the information on school management and the involvement of stakeholders in decision making and its effect on student performance.

Details and selected items in mathematics from PISA 2006 can be viewed in the PISA 2006 Science Competencies for Tomorrow's World, Volume 1: Analysis, beginning on page 304. Teachers might find it useful to give the items to their students and to discuss the students' solutions.



**Focus on Curriculum**

Are you wrestling with designing and developing a mathematics curriculum? NCTM is here to help you in two new ways: first, by publishing a new book, *Perspectives on the Design and Development of School Mathematics Curricula* edited by Christian Hirsch; and, second, by posting a series of research briefs at [www.nctm.org/researchbriefs.aspx](http://www.nctm.org/researchbriefs.aspx). (Look under "Curriculum" on the opening page.) The clips and briefs address:

Selecting the Right Curriculum  
("What research says on curriculum selection")

Producing Gains in Students' Learning  
("Do standards-based curricula boost students' performance?")

Most Highly Rated Mathematics Curricula  
("How organizations rate curricula differently")

Also, for a more detailed description of Hirsch's book, continue reading below:

Two large-scale mathematics curriculum development efforts have occurred in the last half century. The first was embodied in the work of projects like the University of Illinois Committee on School Mathematics (UICSM) and the School Mathematics Study Group (MSG) that resulted in the "New Math" of the 1960s. The second

began in the early 1990s and resulted in the materials that are the subject of a new book, *Perspectives on the Design and Development of School Mathematics Curricula*, edited by Chris Hirsch, Western Michigan University and published by the National Council of Teachers of Mathematics (see:

<http://my.nctm.org/ebusiness/ProductCatalog/product.aspx?ID=13233>)

Prepared in conjunction with the Center for the Study of Mathematics Curriculum (CSMC) and with support from the National Science Foundation, *Perspectives on the Design and Development of School Mathematics Curricula* offers multiple perspectives on the design and development of Standards-based curricula by fifteen comprehensive curriculum development projects. The majority of this work was stimulated by the publication of the 1989 NCTM *Curriculum and Evaluation Standards for School Mathematics*. The book represents more than fifteen years of work on the part of teams of mathematics curriculum developers in designing, developing, testing, and revising innovative curriculum materials for grades K-12. The resulting mathematics curricula represent an approach to mathematics teaching and learning that is qualitatively different from conventional practice in content, priorities, organization, and approaches.

This volume provides perspectives on the design principles that guided the work of these curriculum projects as well as insights into the challenges they faced and the barriers to success. It provides useful guidance to mathematics coordinators and teachers providing curriculum leadership at the state, district, and building level; classroom teachers who may be using these curricula or want to understand more about research-based curricula; and current and future curriculum developers and users. It documents an important historical period of mathematics curriculum development in school mathematics in the United States.

(As shared by Jerry Becker 9/16/07)



**Snippets: News You Can Use**

**(1) "Ladies" or "Loudies"?**

**Abstract** of an article: "Ladies" or "Loudies"? by Edward W. Morris [Ohio University]: in *Youth and Society*, 2007, Volume 38, Number 4, pp. 490-515. See <http://yas.sagepub.com/cgi/content/abstract/38/4/490> . Full article can be downloaded at the given website or at <http://yas.sagepub.com/cgi/reprint/38/4/490>

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"Ladies" or "Loudies"?

Perceptions and Experiences of Black Girls in Classrooms  
By Edward W. Morris [Ohio University]

Although much scholarship has focused on the schooling experiences of African American boys, this article demonstrates that African American girls encounter unique educational perceptions and obstacles. Black girls in a predominately minority school performed well academically, but educators often questioned their manners and behavior. Some tried to mold many of these girls into "ladies," which entailed curbing behavior perceived as "loud" and assertive. This article advances theories of intersectionality by showing how race and class shape perceptions of femininity for Black girls, and how the encouragement of more traditionally feminine behavior could ultimately limit their academic potential.

As shared by Jerry Becker, 8/27/07

## (2) Bad Testing Drives Out Good Learning

Article in *Teacher Magazine*, Wednesday, October 10, 2007. See [http://www.teachermagazine.org/tm/articles/2007/10/10/07tln\\_cody\\_web.h19.html](http://www.teachermagazine.org/tm/articles/2007/10/10/07tln_cody_web.h19.html)

Anthony Cody offers a compelling argument why testing performed in service of NCLB can promote achievement of lower-level thinking skills, reduce classroom emphasis on higher-order thinking, and create environments where students do not achieve to their potential. He also offers some solutions to this troubling problem.

## (3) Heard the One About the 600,000 Chinese Engineers?

Article in the Washington Post, Sunday May 21, 2006, p. B 3. See <http://www.washingtonpost.com/wp-dyn/content/article/2006/05/19/AR2006051901760.html>

You have probably read the numbers in some article about our failing educational system or heard about them in some talk about a "gathering storm": In 2004, the number of engineers produced by China, India, and the U.S. (respectively) were supposedly 600,000, 350,000 and 70,000. In this article, Gerald Bracey offers convincing arguments that many of China's "engineers" would be more like what we would call "technicians," for example. He also quotes numbers from a Duke University study that found that the U.S. produces more engineers per million people than any other country, and that we have no shortage of engineers. Read this provocative article

and spread the word that those 600,000 Chinese engineers are not out there!

## (4) Problem Solving Around the World: Summing Up the State of the Art

Source: Alan Schoenfeld - UC, Berkeley -

[alans@berkeley.edu](mailto:alans@berkeley.edu)

URL (ZDM): <http://tinyurl.com/33tb9z>

URL (Special Issue): <http://tinyurl.com/34fvpr>

If you would like to read about the teaching of problem solving in a variety of countries all over the world, this veritable cornucopia of articles is for you! (Go to the "Special Issue" address listed above.)

## (5) "Study Questions U.S. Shortfall in Math, Science"

by Sheila Riley

Source: *EE Times* - 6 November 2007

URL:

<http://www.eetimes.com/showArticle.jhtml?articleID=202803135>

URL (Report):

[http://www.urban.org/UploadedPDF/411562\\_Salzman\\_Science.pdf](http://www.urban.org/UploadedPDF/411562_Salzman_Science.pdf)

Sheila Riley questions just how inadequately we are preparing our students and suggests that scores on "flawed" standardized tests may not show much about our international standing either educationally or economically. Read the whole article for some interesting perspectives.

## (6) Mastery of Early Mathematics Skills Predicts Future Mathematics and Reading Achievement

Source: Northwestern University

URL:

<http://www.northwestern.edu/newscenter/stories/2007/11/duncan.html>

URL (Journal Article):

<http://www.apa.org/journals/releases/dev4361428.pdf>

A recent study finds that kindergartners who begin school with basic mathematical and literacy concepts already in place outperform their peers, even if the kindergartners have social or emotional problems. Beginning school with these basic competencies, in fact, is the single biggest predictor of later academic success.

## Upcoming Conferences and Events:

**NCTM Annual Conference**

“Becoming Certain about Uncertainty”

April 9-12, 2008

Salt Lake City, Utah

[www.nctm.org/meetings/](http://www.nctm.org/meetings/)

**NCTM Regional Conferences**

October 12-17, 2008

Cleveland, Ohio

[www.nctm.org/meetings/](http://www.nctm.org/meetings/)

**PCSM Annual Conference**

November 6, 2008

Split Rock Resort, Poconos

(Registration forms in August newsletter)

**PCTM 57<sup>th</sup> Annual Conference**

November 5-7, 2008

Split Rock Resort, Poconos

For more information visit: [www.pctm.org](http://www.pctm.org).

**ICME (International Congress on Mathematical Education) -11**

July 6-13, 2008

Monterrey Mexico

(See <http://www.icme11.org> for general information or <http://tsg.icme11.org/> for information about individual study groups that will meet at the conference.)

**T<sup>3</sup> International Conference 2008**

February 29 through March 2, 2008

Dallas, Texas

<http://education.ti.com/go/t3dallas>

**Algebra through Function Academy**

June 22 - 27, 2008

Duck, North Carolina

A Function Approach:

Teaching algebra from a function approach requires the use of function and function behaviors to teach concepts and skills such as factoring, equation solving, arithmetic operations on polynomials, systems of equations, inequalities, properties of inequalities, definitions, concept of asymptotic behavior, absolute value, slope, laws of exponents, etc. Using unique materials, we will reorder the algebra content and use function concepts to develop understanding of, interest in, and long-term memory of traditional algebraic ideas. We will capitalize on cognitive processes of associations, pattern building, attention, visualizations, meaning, the enriched teaching environment, distributed learning, and priming. We will model how to teach algebra through a function approach with graphing calculators, and demonstrate why they are crucial to teaching and learning. At the Algebra through Function Academy we will use the TI-84 Plus SE, CBL2, CBR2, and Vernier EasyLink, as tools of choice when teaching algebra.

Instructors will be Debbie Crocker, Appalachian State University; & Ed Laughbaum, The Ohio State University. The location of the Academy is on the Outer Banks of North Carolina near the village of Duck at the Army Field Research Facility (FRF) <http://www.frf.usace.army.mil/>. The classroom is adjacent to the beach.

For registration information, please find the form at <http://www.math.ohio-state.edu/~elaughba/> Other information regarding the function approach can be found here as well. Registrations are limited to 35 people. For further information, please email Ed Laughbaum

[<elaughba@math.ohio-state.edu>](mailto:elaughba@math.ohio-state.edu).

**The Center for the Study of Mathematics Curriculum (CSMC) International Conference:**

"Future Curricular Trends in School Algebra and Geometry"  
May 2-4, 2008

The Field Museum in downtown Chicago and on The University of Chicago campus

<http://www.mathcurriculumcenter.org/conferences.php>

**The Mathematics Education into the 21st Century Project and the University of Applied Sciences in Dresden 10th International Conference**

"Models in Developing Mathematics Education"  
September 11-17, 2009  
Dresden, Saxony, Germany  
[http://math.unipa.it/~grim/21\\_project/21\\_project\\_Dresden\\_2009.pdf](http://math.unipa.it/~grim/21_project/21_project_Dresden_2009.pdf)

For all further conference details and updates, please email Alan Rogerson:  
[arogerson@inetia.pl](mailto:arogerson@inetia.pl)

## ELECTRONIC RESOURCES

**Using Technology and Problem Solving to Build Algebraic Reasoning** (an online workshop for 5th - 9th grade teachers)

Three workshops, funded by NSF, are still available in 2007-08:

- Workshop 8: March 3 - April 12 *applications open February 1*
- Workshop 9: April 21 - May 31 *applications open March 21*
- Workshop 10: June 9 - July 19 *applications open May 9*

Go to

[http://mathforum.org/nsdl\\_mathtech/online/dates.html](http://mathforum.org/nsdl_mathtech/online/dates.html)

### TI Middle Grades

<http://timiddlegrades.com/>

Texas Instruments has created a website of online resources specifically for middle grades educators to help students achieve success in the classroom.

Features of the site include:

- Classroom-ready math for your lesson plans
- Professional development and TI technology training opportunities
- Helpful tutorials for the TI-73 Explorer and TI-84 Plus family of graphing calculators

Sign up today to have weekly math activities delivered straight to your email inbox. Each activity provides detailed, step-by-step instructions including graphing calculator screen shots. All activities are aligned with NCTM and state standards. Activities are archived weekly and available online to view and use at any time.

(Source: Math Forum Internet News, No. 12.35 (August 31, 2007))

### TI Algebra and TI Geometry

<http://www.tialgebra.com/> and  
<http://www.tigeometry.com/>

Sign up to receive weekly activity email alerts, periodic emails about product upgrades, free activity materials, and other communications from Texas Instruments on their two new sites -- TI Algebra and TI Geometry. Activities for the new TI-Nspire(TM) and the TI-Nspire with TI-84 Plus keypad will be added each week.

Both sites include links to:

- Activities
- Activities Archive
- Student Success
- Training
- Email Alerts
- Bookmarks
- Free Posters

(Source: Math Forum Internet News No. 12.39 (28 Sep 07))

## Virtual manipulatives

Check out:

<http://nlvm.usu.edu/en/nav/vlibrary.html>

## Online Newsletter for Elementary School Mathematics Teachers

**Source:** Sandra Sincek - Elementary Mathematics Project Specialist, San Diego County Office of Education - [ssincek@sdcoe.net](mailto:ssincek@sdcoe.net)

**URL:**

<http://www.sdcoe.net/lret2/math/?loc=news>

The Mathematics Unit of the San Diego County Office of Education produces an informative newsletter that is available online at the above Web site. The current issue is available for download from

[http://www.sdcoe.net/lret2/math/pdf/K-12\\_Math\\_News\\_Fall\\_07.pdf](http://www.sdcoe.net/lret2/math/pdf/K-12_Math_News_Fall_07.pdf)

Articles included in this issue include the following:

- "Building Capacity through the Adoption Process"
- "Teaching Math to English Learners: Can Research Help?" by Dr. Suzanne Irujo
- "Assessment Corner [Formative Assessment]" by Bruce Arnold

- "Spotlight on Higher Ed [Pathway to Algebra: Teaching the Meaning of the Equal Sign]" by Dr. Rong-Ji Chen

- "If My Students Only Knew Fractions!" by Cathy Williams

Additional mathematics-related information is also available on the Mathematics Unit Web site at [www.sdcoe.net/lret/math/](http://www.sdcoe.net/lret/math/)

(Source: COMET 8(24), 4 Oct 07)

## Math Worksheets from PedagoNet

<http://www.pedagonet.com/quickies/mathworksheets.htm>

PedagoNet is a Canadian site offering free resources for primary teachers, including:

- Build your own worksheets
- Pre-made worksheets for Grades 1, 2, 3, and 4
- Flashcards for Grades 1, 2, and 3

(Source: Math Forum Internet News 12.44 ( 2 Nov 07))

## The Exponential Curve - Dan Greene

<http://exponentialcurve.blogspot.com/>

A blog by Dan Greene, a math teacher at Downtown College Prep charter high school (San Jose, California), where the students "... are primarily Latino, are far below grade level in their math and reading skills, and will be the first in their families to go to college. We refer to our students as being on an exponential learning curve: the average level in math of our incoming freshmen is 5th grade, and we need to get them to a 12th grade level in 4 short years."

Greene describes the purpose of his blog, which dates back to June, 2006, as helping "generate and share ideas for teaching high school math concepts to students whose skills are below grade level."

- Posts have included Next Lesson: Rational Functions
- I'm more afraid of the midterm than they are...
- NCTM standards vs. California Algebra standards?
- Next Lesson: The Hidden Dangers of Simplifying

Yours is not to reason why...just invert and multiply!

Source: Math Forum Internet News No. 12.39 (28 Sep 07)

### Math Songs

Check out:

<http://SongsforTeaching.com/>

And more songs:

<http://www.science-groove.org/MASSIVE/> The Math and Science Song Information, Viewable Everywhere (MASSIVE) database contains information on over 2500 science and math songs. Some of the songs are suitable for 2nd graders while others might only appeal to tenured professors.

MASSIVE is maintained by Greg Crowther, University of Washington, Science Groove, and the Science Songwriters' Association. MASSIVE is part of the National Science Foundation's National Science Digital Library (NSDL).

(Source: Math Forum Internet News 12.45 (9 Nov 07))

(For more about songs in mathematics, read:

The Washington Times, Tuesday, October 23, 2007. See <http://www.washingtonpost.com/wp-dyn/content/article/2007/10/22/AR2007102202243.html?hpid=moreheadlines>

### Science [and Math] Cartoons Plus

<http://www.sciencecartoonsplus.com/galmath2.htm>

Sidney Harris' website displays dozens of his one-panel, black-and-white cartoons about mathematicians and mathematics. Harris has contributed "I think you should be more explicit here in step two ..." to The New Yorker and other publications. Browse his funny drawings on other topics, including science.

(Source: Math Forum Internet News 12.49 (7 Dec 07))

### Teacher Professional Development Sourcebook

The publisher of *Education Week* has launched a new biannual resource guide for teacher professional development. The first issue of the *Teacher Professional Development Sourcebook* focuses on the role of teacher collaborative work in improving instruction, and includes research overviews, data on current practices and requirements, a professional development calendar, and an exclusive directory of more than 200 K-12 professional development products and services. Visit [www.teachersourcebook.org](http://www.teachersourcebook.org)

### Special Issue of *Educational Leadership* on Mathematics Education

**Source:** Association for Supervision and Curriculum Development

**URL:** <http://tinyurl.com/2bo3mn>

The theme of the November 2007 issue of *Educational Leadership* is "Making Math Count." Links to abstracts of this issue's articles (see below for titles/authors) are available at the

above Web site. In addition, articles indicated

below with an asterisk (\*) may be downloaded free of charge.

\* "Speaking of Math" by Marge Scherer (Editor-in-Chief of *Educational Leadership*) (Listen online at [http://shop.ascd.org/mp3/el\\_november2007.mp3](http://shop.ascd.org/mp3/el_november2007.mp3))

\* "How Mathematics Counts" by Lynn Arthur Steen  
What will it take for students--and adults--to really understand mathematics?

\* "Nine Ways to Catch Kids Up" by Marilyn Burns  
Essential strategies for boosting students' foundational knowledge.

\* "What's Right About Looking at What's Wrong?" by Deborah Schifter  
Examining errors is not just for grading purposes.  
"Singapore Math: Simple or Complex?" by John Hoven and Barry Garelick  
The slogan for Singapore Math is "simple explanations for hard concepts."

"Learning from Singapore Math" by Steven Leinwand and Alan L. Ginsburg  
Lessons about focus versus fragmentation and alignment versus coverage.

\* "Do We Need National Standards with Teeth?" by Zalman Usiskin  
A single set of national standards ensures neither high student performance nor a healthy economy, this author asserts.

"Mathematics and Cognition" by Arthur Hyde  
How to adapt reading strategies to teach mathematics.

\* "Why Aren't More Minorities Taking Advanced Math?" by Erica N. Walker

Ways to help black and Latino students succeed in higher-level math courses.

\* "What We Can Do About Achievement Disparities" by Sarah Theule Lubienski  
To reduce achievement gaps, schools need to help students move beyond the belief that math is memorization.

"When Students Choose the Challenge" by David Suarez  
Tasks that are at just the right level of difficulty make learning interesting.

\* "From Arithmetic to Algebra" by Leanne R. Ketterlin-Geller, Kathleen Jungjohann, David J. Chard and Scott Baker  
A taste of algebra in elementary school helps students develop abstract reasoning.

\* "Attitude Adjustments" by Lesa M. Covington Clarkson, Gay Fawcett, Elaine Shannon-Smith and Nancy T. Goldman  
From using graphing calculators to reinforcing math at the zoo, educators share ways to boost the confidence of mathematics students.

(Source: COMET 8(31), 2 Dec 07)



*Minutes from the November PCSM meetings will appear in the May newsletter.*