



Mathachusetts

Official Newsletter of MASSMATE

Massachusetts Mathematics Association of Teacher Educators

Affiliate of the Association of Mathematics Teacher Educators

Spring 2012

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Message from the President : Paula Sennett Maintaining High Cognitive Demand

First, we on the MassMATE Board want to send many thanks to those of you who took the time to attend our receptions at the Association of Teachers of Mathematics Conference in Rhode Island in November and the Joint Mathematics Meeting in Boston in January. It was wonderful to reconnect with old friends and make some new professional acquaintances.

I know that you, as I, are amazed at how fast the school year is progressing. I also know that though we are all busy with our respective jobs, we are also keeping a close eye on the developments surrounding the new Massachusetts Mathematics Curriculum Framework. Schools are beginning to make curriculum, materials, and instructional decisions based on what knowledge they are able to glean about timelines and assessment. As we prepare for our upcoming Symposium, we are acutely aware of the need for our members to have as much information as possible to see that our schools are implementing appropriate curriculum and instructional changes. As teacher leaders it is our responsibility to see that our mathematics programs address the appropriate content and the appropriate Guiding Principles. We also need to be sure that our teachers' instructional practices develop in their students the mathematical proficiencies required for students to be successful in their study and use of mathematics.

To do this, teachers will need to incorporate the Standards for Mathematical Practice into their lesson

planning and classroom practice. One of the ways to make this happen is to regularly utilize cognitively demanding mathematical tasks. We cannot develop students' abilities to "make sense of problems and persevere in solving them", "construct viable arguments and critique the reasoning of others", or "model with mathematics" if they are not regularly engaged in mathematical tasks which are rich and challenging. According to Quasar Model* there are four levels of Demand.

Lower Level Demand Tasks

Memorization:

- Task requires the recall of previously learned material. Or the committing of facts, formulas or definitions to memory.
- Task can not be solved using procedures because procedures do not exist or the time frame in which task is to be completed is too short to use a procedure.
- Tasks involve exact reproduction of previously seen material and what is Reproduced is clearly and directly stated.
- Task has no connect to concept or meaning that underlie the facts, rules, formula, or definition being learned or reproduced.

Special points of interest:

President's message.....	1
Upcoming MassMATE Conference.....	2
Colorblind in the Classroom: A preservice teacher's perspective	3
Contribute to Mathachusetts.....	3
Math Challenges	4
Membership Report.....	5
Advertising in Mathachusetts	5
Upcoming Conferences	5
Useful Links.....	6
Board of Directors	6
MassMATE Purposes & Goals	6

Check out our web-home!
www.MASSMATE.net



Webmaster: Katie Thompson
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Continued on Page 4





Massachusetts Mathematics
Association of Teacher Educators

and



MassMATE and Bridgewater State University announce our annual Symposium for Mathematics Teacher Educators

Teacher Leaders Making it Happen: Bringing the Guiding Principles and Standards for Mathematical Practice into Mathematics Classrooms

Keynote: Steve Leinwand

Principal Research Analyst at the American Institutes for Research and Past President of NCSM

May 23, 2012 8:00 a.m.—3:30 p.m.

Campus Center @ Bridgewater State University, Bridgewater, MA

As teacher educators, professional development providers, district math specialists, and consultants, our members are regularly involved in supporting teachers as they work to bring the Common Core State Standards alive in their classrooms and with their students. Through this symposium we will explore strategies and resources for supporting our teachers' work and recognizing excellence in the classrooms.

Please visit www.MassMATE.net for more information.

Registration Fee includes

- MassMATE Annual Membership
- Symposium Registration
 - Breakfast
 - Lunch

Registration:

Early Bird Deadline May 11th, 2012 \$50.00
Full Price Deadline May 18th, 2012 \$60.00

Sample Session Topics:

PreK-5, Grades 6-8, & Grades 9-12 Strands

- *Supporting and recognizing strategic use of technology in the classroom*
- *Helping teachers transition to the new Standards for Mathematical Practices*
- *Recognizing effective implementation of Standards for Mathematical Practices*

Higher Education Faculty Strand

- *Preparing pre-service teachers for the world of Common Core Standards*
- *Incorporating Mathematical practices into pre-service teacher education*
- *Mathematical Knowledge for Teaching? What the pre-service teachers need in addition to the Mathematics content*

Colorblind in the Classroom

A Preservice Teacher's Perspective



Submitted by Genna Drooker

Vivian Paley's book, *White Teacher*, identifies being "colorblind" as a teacher's intentional lack of consideration for a student's skin color. For me, however, skin color is only one dimension of colorblindness. Being "colorblind" in the classroom, in my opinion, means that the teacher makes an effort to not only ignore a student's skin color, but also ethnicity, race, culture, and basically anything about his or her background. Essentially, the teacher views all students as being the same as far as their identity is concerned. I do not agree that teachers should be colorblind.

I would like to begin my discussion of this topic by highlighting the takeaway message of a faculty meeting at Paley's predominantly white public school: "more than ever we must take care to ignore color. We must only look at behavior, and since a black child will be more prominent in a white classroom, we must bend over backward to see no color, hear no color, speak no color" (p. 7). This demonstrated how teachers often try to be "colorblind" for fear of being discriminatory or stereotyping. However, I have a strong aversion to the idea that educators should 'see, hear and speak no color.' Not being colorblind doesn't mean that teachers are going to single out the black students for their misbehavior more often than they would white students. Instead, it means not intentionally ignoring or overlooking racial and ethnic differences. By being colorblind, teachers are neglecting to consider diversity in the classroom and are essentially closing their eyes to the experiences of their students.

Paying attention to a student's race is a critical part of being an extraordinary teacher. I feel that as an educator it is incredibly important to try not to be "colorblind" in the classroom and to be cognizant of the diversity of students. It is crucial to recognize and understand that students do come from different backgrounds and that these factors influence who they are and how they think about things.

In order to be an effective educator and make students feel comfortable in the classroom, teachers must take time to learn about the cultural experiences of their students and, in effect, use these experiences as a foundation for teaching. Moreover, being colorblind may contribute to a student's loss of identity. Ultimately, not addressing issues in the classroom related to differences in color and other aspects of a student's background can actually do more harm than good. As Paley points out, "[her] silence communicated the impression that there might be something wrong about being black" (123).

Lastly, if educators do choose to be "colorblind" in their classroom, they risk viewing equity as a process as opposed to an outcome. Equity is when teachers create opportunities that enable every student to realize his or her full potential. As educators, we must create an environment where all students can succeed; this may require differentiating instruction in our classrooms. . By failing to recognize student differences, teachers who are "colorblind," create a *process* that is identical for all students, regardless of students' cultural differences. Therefore, it is critical that teachers pay close attention to students' racial, ethnic, and cultural experiences in order to create an equitable learning environment where all students have equal access to the curriculum and the opportunity to succeed. For all of the aforementioned reasons, I strongly believe that educators must strive to the best of their ability not to be "colorblind" in the classroom and to embrace the diversity of their students.

References:

Paley, V.G. (2000). *White Teacher*. Cambridge, MA: Harvard University Press.

Genna Drooker is a Master's student of mathematics education at Boston University. She is an Noyce Scholar and is looking forward to a fulfilling career teaching mathematics in urban middle schools.

Contribute to Mathachusetts



We value our member's thoughts and contributions! Please consider writing an article for *Mathachusetts*.

Also, let us know of any noteworthy events, projects, or programs occurring in your district or school, so that we may consider including it in *Mathachusetts* or on our website!

Please contact Alejandra Salinas at newsletter@MassMATE.net with your submissions.

Math Challenges for Preservice Teachers!

Geometry:

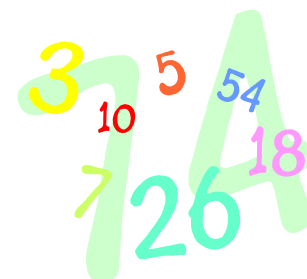
The “design a can” contest challenges you to find the radius and height of a can that uses the least aluminum (surface area) but holds 1/2 liter of liquid. Recall that 1/2 liter is equivalent to 500 cubic centimeters. Give the dimensions of your entry in the contest and its surface area and volume.

Operations with Fractions:

A story problem begins with: *Eva has 5 cubic feet of potting soil to use for potting plants.*

- Incorporate this information in a story problem that could be solved using $5 \div \frac{1}{3} = N$
- Incorporate this information in a story problem that could be solved using $5 \times \frac{1}{3} = N$

Submit your or your students' answers and explanations to Newsletter@MassMATE.net and have a chance of being published in the next edition of *Mathachusetts*!



Message from the President Continued...

Procedures without Connections:

- Task is algorithmic. Use of procedures either is specifically stated or its use is evident based on prior instruction, experience, or placement of task.
- Task leaves little ambiguity about what needs to be done and how to do it.
- No connection or explanation of the concept is needed.
- Task focuses on producing correct answers rather than developing mathematical understanding.

Higher Level Demand Tasks

Procedures with Connections:

- Task requires use of procedures to develop deeper understanding of the concept.
- Task suggests pathways to follow that are broad general procedures rather than algorithms that are opaque with respect to underlying concepts.
- Tasks are usually represented in multiple ways (e.g. visual diagrams, manipulatives, symbols, problem situations)
- Connections among the representations builds meaning to concept.
- Tasks requires some thinking, although using a procedure it can not be followed mindlessly. Students need to engage in conceptual ideas to successfully complete the task.

Doing Math

- Task requires access of relevant knowledge, self-reflection on actions, exploring concepts, processes and relationships in non-algorithmic activity.
- Task demands self-monitoring or self-regulation of thinking.
- Task requires analysis of constraints that may limit possible solution strategies and solutions.
- Task is unpredictable due to nature of solution process required.

Regularly incorporating Higher Level Demand tasks does not mean abandoning memorization and procedures. These definitely have a place in mathematics education. However, a steady diet of Lower Level Demand tasks gives students a limited understanding of what mathematics is and how to use it. It is our role as teacher leaders to help teachers recognize and effectively utilize higher level demand tasks. Creating and locating these types of problems will become easier as more state wide and national organizations develop materials to assist teachers in addressing the Standards for Mathematical Practice. The Illustrative Mathematics Project (www.illustrativemathematics.org) is one of the places to look for such tasks and the National Council of Supervisors of Mathematics and the Association of Mathematics Teacher Educators sites are also potential resources

Please be sure to register for our Symposium at Bridgewater State University on May 23, 2012. The theme is “Teacher Leaders Making it Happen: Bringing the Guiding Principles and Standards for Mathematical Practice into the Mathematics Classroom.” We look forward to seeing you there.



*The Quasar Project: Mathematical Tasks Framework (adapted from Stein, Grover, & Henningsen, 1996)

Membership Report

Submitted by Membership Chair, Stan Dick



At our last reporting we had about 230 members. Typically, there is little membership activity outside of those joining at conference time, but since our last report we have gained a few new members who joined through the MassMATE website, and lost a very few whose memberships have expired. We remain at a membership level of approximately 230 members. However, we have already started receiving registrations for the 2012 conference, and are hopeful that we will increase our membership once again this year. While it is a remarkable achievement to increase membership in such a difficult economy, we believe the success MassMATE has enjoyed is due to the relevancy and timeliness of our newsletters and conferences topics, the excellent speakers we have been able to attract at our symposia, our ability to keep conference fees at an affordable level, and the determination of our members, and the entire mathematics teaching community, to stay informed about the latest developments in their fields.

Advertising in Mathachusetts

Mathachusetts will be publishing advertisements related to Mathematics Education. For more information, formats, fee schedules, and to obtain an application, please contact us at sponsor@MassMATE.net

Please note that by publishing an advertisement, MassMATE does not imply endorsement of the advertised product or the company.

Upcoming Conferences

- ‡ 2012 Math Recovery Conference
 May 2-4, 2012
 St. Louis, MO
www.conference.mathrecovery.org
- ‡ NCSM Leadership Academy
 National Council of Supervisors of Mathematics
 June 25-27, 2012
 Pittsburgh, PA
www.MathEdLeadership.org
- ‡ 6ECM
 6th European Congress of Mathematics
 July 2-7, 2012
 Krakow, Poland
www.6ECM.pl/
- ‡ MAA MathFest 2012
 Mathematics Association of America
 August 2-4, 2012
 Madison, WI
www.MAA.org
- ‡ ATE's Summer Conference
 Association of Teacher Educators
 August 3-7, 2012
 Boston, MA
www.ATE1.org
- ‡ NCTM Regional Meeting
 National Council of Teachers of Mathematics
 October 24-26, 2012
 Hartford, CT
www.NCTM.org/regionals.aspx
- ‡ 2013 Joint Mathematics Meetings
 January 9-12, 2013
 San Diego, CA
www.maa.org/meetings/jmm.org
- ‡ AMTE 2013 Conference
 Association of Mathematics Teacher Educators
 January 24-26, 2013
 Orlando, FL
www.AMTE.net
- ‡ MCA 2013
 Mathematical Congress of the Americas
 August 5-9, 2013
 Guanajuato, Mexico
www.MCA2013.oeg



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MASSMATE's Purposes and Goals


The Massachusetts Mathematics Association of Teacher Educators (MassMATE) is a nonprofit organization whose purpose is to provide a forum for mathematics teacher educators to communicate with each other and collaborate with other groups interested in the teaching of mathematics in the state of Massachusetts. Specifically, the goals of MassMATE are to:


- promote **leadership** among mathematics teacher educators;
- serve as a **forum** for ideas and resources in mathematics teacher education;
- encourage **research** related to mathematics teacher education;
- promote quality **undergraduate** and **graduate** programs in mathematics education;
- encourage and support professional development programs for **in-service** teachers;
- encourage and support professional development programs for **postsecondary faculty** involved in mathematics education;
- facilitate **communication and collaboration** among **professionals** involved in mathematics education and mathematics teacher education at all levels;
- facilitate **communication and collaboration** among members of educational **administrative** units, such as departments of mathematics and departments of education;
- coordinate activities and work collaboratively with **other associations** and organizations concerned with the preparation and professional development of mathematics teachers;
- work cooperatively with the **federal and state** agencies to enhance the mathematical, pedagogical, and clinical **preparation of teachers** of mathematics at all levels with respect to criteria for credentialing and licensing teachers in Massachusetts.




Share these with a colleague and have them join MassMATE today!


Useful Links:


 Massachusetts Mathematics Association of Teacher Educators (MassMATE)
www.MassMATE.net


 Association of Mathematics Teacher Educators (AMTE)
www.AMTE.net

 Association of Teachers of Mathematics in Massachusetts (ATMIM)
www.ATMIM.org


 National Council of Supervisors in Mathematics (NCSM)
www.mathedleadership.org


 National Council of Teachers of Mathematics (NCTM)
www.NCTM.org

 Massachusetts Department of Elementary and Secondary Education Professional Development
www.doe.mass.edu/pd

 National Council on Teacher Quality (NCTQ)
www.NCTQ.org

 MathForum
www.MathForum.org

 Association of Teachers of Mathematics of New England (ATMNE) www.ATMNE.org

 Triangle Coalition for Science and Technology Education
Triangle Coalition Electronic Bulletin (TCEB)
www.triangle-coalition.org