Summary

Of the 19 participants, only nine filled out the pre-workshop survey. Because the response rate for the survey was so low and we don’t know how representative this sample was of the participants as a whole, the conclusions we can draw from the data are fairly limited.

Demographics: The survey respondents were for the most part experienced teachers. They had taught for an average of 11.4 years total (range 4 to 16 years) and for an average of 7.1 years (range 2 to 15 years) at their currently assigned level. Seven of the nine had a major or minor at the undergraduate or graduate level in math, math ed, or another STEM field; two had taken some post-secondary math courses but not majored or minored in a STEM field or math ed.

Likert Scale Items: The respondents had positive attitudes about math, and they were confident overall about their math teaching. They were split in terms of how much open-ended problem solving they said they do with their students, with four agreeing that they don’t spend much time working with their students on open-ended problems, four disagreeing, and one undecided.

Teaching Self-Assessment: Respondents were most confident about interacting with and relating to their students and about teaching required content. They were least confident about advanced content, challenging advanced students, incorporating problem solving, and covering all the required content while incorporating problem solving.

Participation in the Workshop: Respondents had heard about the workshop from colleagues, school administrators, leaders of the AIM Math Teachers’ Circle, and through AIM, as well as through MathCounts and the Asilomar conference. Common goals for their participation in Math Teachers’ Circle included learning new strategies or techniques and integrating problem solving into their curricula.
**Detailed Results: Demographics**

Numbers in parentheses represent the number of participants who gave the associated response.

**What is your highest level of education in math?**
Some post-secondary math (2)
Undergraduate math (3)
Undergraduate math ed (1)
Undergraduate other STEM field (3)
Graduate math, math ed, other STEM field (2)

**Current level of math taught**
Grades: 5th (1), 6th (2), 7th (6), 8th (5)
Subjects: Pre-algebra (4), Algebra I (7), Geometry (3), Algebra II (1), math competition team

**Number of years taught at current level**
Mean = 7.1 years (standard deviation = 4.8 years), range = 2 to 15 years

**Other math subjects taught**
Tutored Grade 2 through Calculus, Grade 4 (1 year), Math 7 (3 years), Math 8 (1 year), Pre-Algebra (2-5 years), Geometry (2-3 years), Advanced Algebra/Trig (1 year), integrated Algebra/Geometry/Trig (1 year)

**Other subjects taught**
reading, social studies, visual and performing arts, elementary science, science 7-9, earth science, English in Japan, HS math

**Total number of years taught**
Mean = 11.4 years (standard deviation = 5.1 years), range = 4 to 16 years
**Likert Scale Items**

The ratings were coded as follows:

No Rating (NR) = not included
Strongly Disagree (SD) = 1
Disagree (D) = 2
Undecided (U) = 3
Agree (A) = 4
Strongly Agree (SA) = 5

The mean, standard deviation, and distribution of the ratings for each item are given below.

**Attitudes and Beliefs about Math**

I enjoy teaching math.

<table>
<thead>
<tr>
<th>Mean (StDev)</th>
<th>Distribution (# of participants with each response)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.9 (0.3)</td>
<td>NR</td>
</tr>
<tr>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

Teaching math can be frustrating for me.

<table>
<thead>
<tr>
<th>Mean (StDev)</th>
<th>Distribution (# of participants with each response)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2 (0.8)</td>
<td>NR</td>
</tr>
<tr>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

My students enjoy math.

<table>
<thead>
<tr>
<th>Mean (StDev)</th>
<th>Distribution (# of participants with each response)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.9 (0.6)</td>
<td>NR</td>
</tr>
<tr>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

I do NOT think of math as fun.

<table>
<thead>
<tr>
<th>Mean (StDev)</th>
<th>Distribution (# of participants with each response)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.3 (0.5)</td>
<td>NR</td>
</tr>
<tr>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

**Self-Assessment of Math Skills and Abilities as a Math Teacher**

I usually feel confident about my own math skills.

<table>
<thead>
<tr>
<th>Mean (StDev)</th>
<th>Distribution (# of participants with each response)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.2 (0.4)</td>
<td>NR</td>
</tr>
<tr>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>
It is easy for me to turn students on to math.

<table>
<thead>
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<tbody>
<tr>
<td></td>
<td>NR</td>
</tr>
<tr>
<td>3.7 (0.7)</td>
<td>0</td>
</tr>
</tbody>
</table>

It bothers me when I do NOT know the answer to one of my students’ questions.

<table>
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<tbody>
<tr>
<td></td>
<td>NR</td>
</tr>
<tr>
<td>4.2 (1.0)</td>
<td>0</td>
</tr>
</tbody>
</table>

I do NOT feel confident about my ability to understand and work on math problems I have never seen before.

<table>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NR</td>
</tr>
<tr>
<td>2.2 (0.4)</td>
<td>0</td>
</tr>
</tbody>
</table>

**Pedagogy and Practice While Teaching Math**

I frequently try out new things in the classroom.

<table>
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<tbody>
<tr>
<td></td>
<td>NR</td>
</tr>
<tr>
<td>4.0 (0.5)</td>
<td>0</td>
</tr>
</tbody>
</table>

I do NOT spend much time working on open-ended problems with my students.

<table>
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<tr>
<td></td>
<td>NR</td>
</tr>
<tr>
<td>3.0 (1.0)</td>
<td>0</td>
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</table>

When teaching math, I encourage my students to ask questions.

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<tr>
<td></td>
<td>NR</td>
</tr>
<tr>
<td>4.4 (0.5)</td>
<td>0</td>
</tr>
</tbody>
</table>

I am NOT able to be creative in my math teaching and also get through the material I am supposed to cover.

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</thead>
<tbody>
<tr>
<td></td>
<td>NR</td>
</tr>
<tr>
<td>3.0 (1.1)</td>
<td>0</td>
</tr>
</tbody>
</table>
TEACHING SELF-ASSESSMENT

Which aspect(s) of teaching math are you MOST confident about or comfortable with?

Interacting with students (5)
Teaching required content (4)
Using manipulatives (2)
Geometry (1)
Problem-solving (1)
Representing information visually (1)

Comments:

Designing lessons with access for lower end kids

Direct teaching using resources provided by textbook publishers; Assessment of strengths and weaknesses to target students' needs

gometry; using manipulatives, illustrations and drawings

I confidently know how to do all the Algebra I I teach. I am very comfortable working with middle school-aged young people. I get excited when I discover a more engaging way to teach a concept.

problem-solving

Teaching required content; getting my students to feel comfortable with asking questions/asking for help.

The Algebra and Algebra Readiness content, engaging my students, relating to my students and management

understanding and responding to students' questions

Using manipulatives and teaching some concepts using a hands on approach

Which aspect(s) of teaching math are you LEAST confident about or comfortable with?

Advanced content (2)
Challenging advanced students (2)
Covering all required concepts while integrating problem solving (2)
Integrating problem solving (2)
Creating lesson plans at appropriate level (1)
Creating projects (1)
Incorporating technology (1)
Teaching special needs students (1)

Comments:

(least skilled/experienced at) creating projects, incorporating technology, differentiating to create adequate challenge for high-end students

*additional methods for some concepts*

calculus and number theory

*creating lesson plans that start at an appropriate level and build up complexity of problems appropriately*

Higher end geometry; probability

*I am least confident about teaching to students with special needs.*

Integrating problem solving into the curriculum and getting all the concepts covered

*Making lessons challenging for the bright kids which making sure of #6*

teaching some of the problem solving types of problems that you see in competitions (AMC8, MathCounts) and fitting these problems in my curriculum
**PARTICIPATION IN THE WORKSHOP**

**How did you hear about the AIM Math Teachers’ Circle Immersion Workshop?**

Colleague (3)
AIM (2)
MTC leader (2)
School administrator (2)
MathCounts (1)
Asilomar (1)

**Comments:**

A fellow teacher sent me an email about the workshop

*Email through MathCounts*

From another teacher at my school who was in the first teachers' circle

*From Brian Conrey*

I am working part-time for AIM as a math coach.

*I received an email from my principal as well as from Tatiana S. from SJSU*

I saw it advertised at Asilomar a few years ago and Mary Fay-Zenk and I spoke about it.

*In our school and from our administrators*

Through Tom Rike (who runs the Oakland All-Star Mathletes competitions at Oakland High)

**What goals do you hope to achieve through participating in the Math Teachers’ Circle program?**

Learn new strategies/techniques (5)
Integrate problem solving into curriculum (2)
Have ongoing problem-solving experiences (1)
Ideas for explaining difficult concepts (1)
Improve lesson planning (1)
Learn new math concepts (1)
Network with other teachers (1)
Review problem-solving strategies (1)
Ways to be creative and stay on track with standards (1)
Comments:

1) better lesson planning
2) more variety in approaches to presenting math concepts and techniques

1) Refresh my love of teaching
2) Step back and see the big picture of why I teach math
3) Learn new strategies for engaging the students with problems they will enjoy that will also foster retention of concepts

1) Review problem solving strategies
2) Integrate it into my curriculum
3) Have ongoing problem solving experiences

A better understanding of how to explain difficult concepts to students

I would like to hear about ways that I can allow students to be creative and have fun with math while still staying on pace to introduce a concept, master the standards and leave enough time to review before the CSTs!

more tools for the classroom and MathCounts

New techniques/ways of approaching problem solving to bring back to my students.

to be able to take from the problem solving aspect and apply these types of problems in my classroom

update math concepts and ideas; learn new skills and strategies in teaching math; learn new mathematical concepts and proving formulas and theories; collaborate with other math teachers and share ideas and strategies in teaching math