Volume 6 Issue 2 March 2016

LINK

Official Newsletter of the Association of Mathematics Teacher Educators of Texas

President's Message
Dusty Jones

I just returned from the 20th AMTE Conference. As a part of the celebration, participants had a chance to add their data and build line plots of their first AMTE Conference attended, and the total number of AMTE conferences they had attended. It is hard to believe that I have been to twelve.

Thinking about this led me to think about a few questions: Why do I keep going back? Why am I a member of AMTE? Why am I a member of AMTE-TX? How do these organizations – AMTE and AMTE-TX – complement each other? What benefits do members of AMTE – and AMTE-TX – enjoy?

One reason I am involved in the national organization is that I have found my "tribe" there. These are the people with whom I can try out ideas, share professional concerns, and find help for sorting through sticky issues that face mathematics teacher educators. AMTE is a place where I can go to find out how others are trying to address these issues … and also find out about successful, innovative, and novel solutions.

Continued…

What's Inside…

Here are some of the issues currently facing mathematics teacher educators:

- How do we recruit mathematics teachers to the profession?
- Should there be standards for mathematics teacher preparation? If so, what?
- How do we retain teachers once they enter the profession?
- How do we address the inherent oppressive system of mathematics education in the United States?

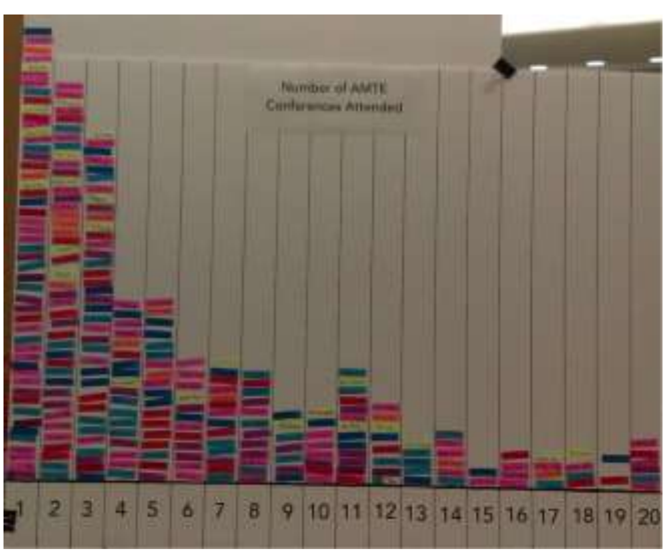
During the opening session of the conference, Dr. Ed Dickey (University of South Carolina) addressed the issue of teacher recruitment and shared several strategies – including a video – for designing a plan for recruiting mathematics teachers. See the video at www.TeachScienceandMath.org. There is also a Mathematics Teacher Recruitment Campaign Implementation Guide available at http://bit.ly/MATHImplGuide. These resources were developed with support from the Mathematics Teacher Education Partnership, an initiative of the Association of Public & Land-Grant Universities.

Currently, a writing team consisting of AMTE members is drafting standards for mathematics teacher preparation. You can find the current draft at www.amte.net, and even submit your comments. I enjoy being a part of AMTE because I can lend my voice to that of a larger group, which in turn has a greater impact on the issues.

At the Judith Jacobs Lecture, Dr. Skip Fennell (McDaniel College – retired) posited that state affiliates, such as AMTE-TX, are key players in effecting change locally. We have an understanding of the contexts and connections within our regions. To that end, we may find ways to advocate for improving teaching conditions, salaries, and benefits. At the state level, we are also more knowledgeable of the inequities that exist in our contexts. With this knowledge and awareness, we can focus on developing plans to provide equitable opportunities to all students.

These are *real* issues, rife with complexities and points of conflict. Such issues need to be addressed on several fronts, as the existence of a single solution pathway is unlikely. However, by working together with others across the state – and across the country – we can hope to make headway and improve mathematics teaching … and the way of life … for students, teachers, schools, and communities.

That is why I am a member of AMTE, and why I happily serve as president of AMTE-TX.



How many AMTE Conferences have you attended?

A Novel Collaboration Between Mathematics Teachers, Mathematicians, and Mathematics Teacher Educators

Theresa Jorgensen
University of Texas at Arlington

As mathematics teacher educators, we have many standard routes along which we engage in the professional development of K-12 teachers of mathematics, including stand-alone workshops, master's degree programs targeting practicing teachers, and long-term professional development academies akin to Teacher Quality projects funded through the Texas Higher Education Coordinating Board.

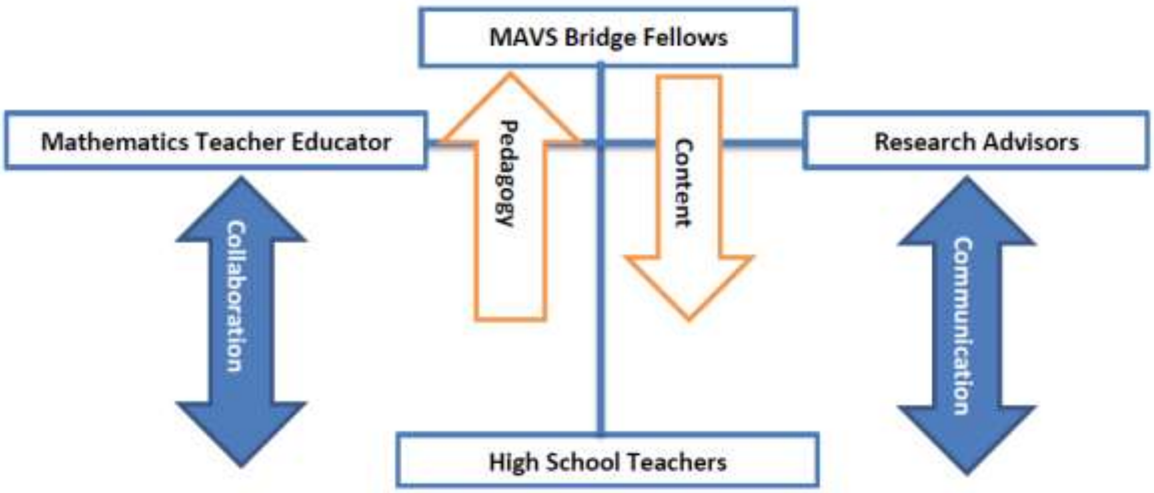
At the University of Texas at Arlington, we have established a novel university-school partnership in which K-12 mathematics teachers from Arlington Independent School District (AISD) collaborate with UT Arlington graduate students in mathematics, their research advisors (mathematics research faculty), and mathematics teacher educators. The goal of the Mathematically Aligned Vertical Strands (MAVS) Bridge Project is to produce mathematicians (the graduate students) who can communicate their research in mathematics in a meaningful way to a broader audience. At the same time, the K-12 teachers improve their content knowledge and their understanding of the mathematical transitions for their students as they move from school mathematics to college-level mathematics.

The MAVS Bridge Project pairs high school mathematics teachers with mathematics graduate students (fellows) in developing vertically aligned mathematics lessons that both fit seamlessly into the school curriculum and connect to the fellow's mathematical research. That is, no teaching days are lost for the high school teacher; the lessons that the teachers and fellows deliver in the mentor teacher's high school classroom embed key ideas of the fellow's mathematics research within the mathematics that the high school students need to learn that day.

Each graduate student Bridge fellow is paired with a mentor AISD high school teacher for the academic year. The fellow-teacher pairs work together to develop three lessons for the mentor teacher's high school mathematics classroom. The process is facilitated by the MAVS Bridge director, a mathematics teacher educator who also has expertise in mathematics. Teacher-Fellow pairs begin lesson development work in the fall semester of the academic year in a professional development seminar. In the spring semester, fellows spend one full day per week in the high school classroom of their assigned mentor teacher, serving as a "Mathematician in Residence." Roughly every six weeks, the fellows present one of the three research lessons developed during the fall semester with their mentor teacher.

Continued…

In the fall semester of the academic year, when the lessons are being developed, the fellows are teaching a college level mathematics course at UT Arlington which has content that overlaps with the high school mathematics courses that their mentor teacher is teaching. For instance, a Bridge fellow may teach Trigonometry at UT Arlington in the fall semester, while their mentor teacher is teaching Precalculus at the high school level. This structure allows for fruitful discussions about vertical alignment and differences between the topics emphasized in high school and university courses, student expectations, and instructional style.



Describes the process by which the lessons are developed (Cordero, Epperson, & Jorgensen, 2014)

As an example, one fellow/teacher pair developed a lesson for the mentor teacher's Precalculus classroom on inverse functions. Before this lesson, the students had seen the composition definition of an inverse function and had practiced computing inverses of linear functions. The students also had a basic understanding of domain and range. This lesson connected those two previously distinct topics. In the fellow's research in homological algebra, he often needs to know when a function is an isomorphism between two sets, thus meaning the two sets have the same cardinality. It is typically unwieldy to show directly that such a function is 1-1 and onto because the function is defined in a strange way. However, constructing the inverse is often more feasible. In the context of Precalculus, this discussion focused the students on the relationship between the domain and range of a function that has an inverse; that is, for a bijection (a function that is 1-1 and onto), the cardinality ("size") of the domain and the cardinality ("size") of the range is the same.

After the implementation of this lesson, the mentor teacher reported growth in his own mathematical understanding and shared the lesson with his professional learning community of mathematics teachers at the high school. Further, through the partnership with AISD, all the lessons created by the MAVS Bridge participants are shared through presentations at the district's professional development workshops and through the district's curriculum network.

Initiatives to create and strengthen partnerships that prepare mathematics students at all levels are significant efforts of state and national interest. To this end, the MAVS Bridge Project provides a model for meaningfully connecting the pipeline of educators who teach these students, from the graduate student fellows who will eventually be professors in mathematics departments who teach future teachers, to the mentor teachers renewing themselves professionally through

Continued…

invigorated interest in new mathematics, to the students in the high school classrooms whose experiences in mathematics are enhanced. The role of mathematics teacher educators in such a partnership is unique, in that we can provide a bridge that integrates the strengths of university mathematics into the mathematics curriculum in schools, while maintaining mutual respect and value for the contributions made by participants from both the university and the schools.

This work is based upon work partially supported by a National Science Foundation-funded GK-12 grant (DGE #0841400).

Cordero, M., Epperson, J., & Jorgensen, T. (2014). Linking Mathematics Research to Secondary School Classrooms: The GK-12 MAVS Program. *EDULEARN14 Proceedings*, 4715-4723.

20th Annual Conference of the Association of Mathematics Teacher Educators (AMTE) Jan. 28-30, 2016, Irvine CA

JANUARY 28-30, 2016

20

TWENTIETH ANNUAL AMTE CONFERENCE

AMTE-TX Affiliate Breakfast

<u>Session Title:</u> **Using Student Work to Enhance Preservice Teachers' Noticing and Content Knowledge**

<u>Presenters:</u> Hiroko Kawaguchi Warshauer, Texas State University, Sharon Kay Strickland, Texas State University, Nama Namakshi, Texas State University, Sonalee Bhattacharyya, Texas State University, Lauren Hickman, University of Michigan

We investigated preservice teachers' (PSTs) noticing in the context of a mathematics content course. We examined differences between sections using a writing assignment to support developing PSTs' noticing with those sections that did not and report our findings.

Our presentation was a report on our study of PSTs' *professional teacher noticing* (we shorten to *noticing*) in the context of a mathematics content course. Specifically, we investigated the differences between sections of the course that used a writing assignment (WA) designed to improve the PSTs' *noticing* and the PSTs' *Mathematical Knowledge for Teaching* and the sections of the course that did not use the WA. In previous research (Warshauer et al, 2014), we determined that the WA was influential in raising PSTs' Content Knowledge (CK) and Knowledge of Students and Content (KSC) as measured by the corresponding Learning for Mathematics Teaching (LMT) instruments (Hill, Schilling, & Ball, 2004). This work seeks to improve our understanding of this relationship by using a quasi-experimental design to compare sections with and without the WA.

The focus of our presentation was on research question 3:
(1) Is there a difference in the PSTs' CK growth, if any, for the control and experimental sections?
(2) Is there a difference in the PSTs' KSC growth, if any, for the control and experimental sections?
(3) Is there a difference between PSTs' *professional noticing* in the experimental and control sections?
(4) What connections exist, if any, between changes in CK and KCS and development of *teacher noticing*? And does the experimental condition account for any differences?

The study was conducted at a large public university in the southern United States in the first mathematics content course, focused on number and operations, required for K-8 certification. Three sections across three instructors served as the control sections (PST n = 78) and two sections across two instructors (matched to their respective control section) served as the experimental sections (PST n = 38). The two instructors for the experimental sections also taught two of the control sections. All sections used the same textbook and basic syllabus with the exception that the experimental sections also utilized 3 writing assignment tasks (WA) over the course of the semester. Each WA involved three basic components. The control and experimental sections completed the first two components, as the first two parts did not involve a specific *noticing* component. For the first and second parts, the PSTs worked in small groups on a mathematics task designed for middle school students followed by whole class discussion of the PSTs' strategies and solutions. Only the experimental sections completed the third component of the WA, which consisted of a packet of 3 to 4 middle school students' solutions to the same task. The PSTs were instructed to write an analysis of the children's solutions with specific directions to attend to and interpret the children's mathematical strategies in their report. They were asked to provide evidence and justification for their *noticing*. The WA cycle was repeated twice across the

Continued…

semester, again with only the experimental sections doing the third component. The task and student work were from *Balanced Assessments* (Schoenfeld, 1999). The WAs were scored according to a rubric aligned with a framework for analyzing *noticing* described by Jacobs, Lamb, & Philipp (2010). In the third and final WA, which we refer to as WA3, both the experimental and control sections completed all three components of the WA. We then coded the WA3 for Attending and Interpreting skills of *noticing* based on an expert coding scheme developed by the research team.

Preliminary results show that the occurrence of Attending skills was approximately the same across the experimental and control sections, whereas the Interpreting skills of *noticing* was higher in the experimental than the control section. The occurrences were computed by determining the number of the *noticing* skills for each of the Attending and Interpreting the PSTs reported in their WA3, identifying the number for the experimental sections and those for the control. We then computed the percent occurrences of the particular skill for each of the two respective experimental and control groups and compared the percent occurrences. Comparing the percent occurrences allowed us to account for the unequal number of PSTs who submitted WA3 in each of the groups (Experimental n = 30; Control n = 34). When comparing Attending to Interpreting skills within the experimental sections, we used the number of occurrences and found that the number of Attending and Interpreting skills were about equal. Within the control sections, however, we saw more Attending than Interpreting; nearly in a 2 to 1 ratio. We conjecture that while the PSTs in the control sections were able to Attend to the student work, they were less able to interpret the mathematics behind the student work. These results, however, are preliminary and we are continuing to analyze the data as well as refine our codes.

Our larger aim is to empirically examine new components of mathematics teacher preparation that may improve and support quality mathematics teaching.

Contact: Hiroko Kawaguchi Warshauer hiroko@txstate.edu

Hill, H., Schilling, S. G., & Ball, D. L. (2004). Developing measures of teachers' mathematics knowledge for teaching. *Elementary School Journal, 105*, 11-30.

Jacobs, V. R., Lamb, L. L. C., & Philipp, R. A. (2010). Professional Noticing of Children's Mathematical Thinking. *Journal for Research in Mathematics Education, 41*(2), 169-202.

Schoenfeld, A. (1999). *Balanced Assessment for the Mathematics Curriculum: Middle Grades Assessment* (Vol. 1). Berkeley: Dale Seymour.

Warshauer, H. Strickland, S., Hickman, L., & Namakshi, N.(2014). Relating Preservice Teacher Noticing with Mathematical Knowledge for Teaching. In S. Oesterle, N. Nicol, P. Liljedahl, & D. Allan (Eds.), *Proceedings of the 38th Conference of PME and the 36th Conference of PME-NA* (Vol. 6). Vancouver, Canada: PME.

Session Title: **Visualizing Equitable Discourse Practices in Methods Courses**

Presenters: Jaime Marie Diamond, University of Georgia, Crystal Kalinec-Craig, University of Texas, San Antonio, Jeffrey Shih, University of Nevada, Las Vegas

In this session, presenters discuss their initial findings regarding preservice teachers' (PSTs) responses to a CGI video wherein four children solve a mathematics task. Attendees will watch the video and discuss instructional differences associated with differences in our PSTs' knowledge.

In this study, we examined the pre and post semester responses from five classes of elementary math methods (across three institutions in the US) based on what they noticed when watching the Ms. Keith video from the CGI series. We asked the students a very open-ended question, "Tell me what the students understand about math in the video." Our analyses found that at the beginning of the semester, the PSTs were mostly attending to very general aspects of the children's mathematical thinking. For example, "Ashley seems to struggle with math. Sunny understands." After the PSTs learned about CGI and conducted clinical interviews with students in their field work during the semester, they were able to make very specific statements about the children's mathematical thinking in the video (and in some cases, described more than what was simply in the video). For example, some students said "Sunny used a derived fact to solve the problem and used his knowledge of base ten in order to solve 7 + __ = 11. David used a counting up strategy in order to solve the join change unknown problem." What we are still left with unanswered might be a clearer explanation for why two of the three institutions found PSTs who gave very specific, beyond-the-clip type answers where as another class mostly said brief statements like, "Sunny used a derived fact." The discussion from our presentation touched on how others make stronger connections between methods and content courses for elementary prospective teachers and how other videos might elicit different thinking from the PSTs. Ultimately, giving the PSTs a common language to use (CGI) helped them to notice how/why some problems might be hard for children and to give them a clearer direction for next steps (e.g., if it was hard for Ashley, then maybe they can change the numbers or to change the problem to a join result unknown).

Contact: Crystal Kalinec-Craig Crystal.Kalinec-Craig@utsa.edu

Session Title: **Developing Algebraic Structure Sense for Secondary Mathematics Teaching**

Presenter: Cody Patterson, University of Texas, San Antonio

The role of algebraic structure in secondary mathematics will be discussed, and some tasks from a professional development course that highlight algebraic structure will be presented. Preliminary evidence of growth in PD participants' structure sense will also be shared.

Continued…

The mathematics education community has recently identified the development of algebraic structure sense as a key priority of secondary mathematics instruction. Hoch and Dreyfus (2004) define *structure* roughly as an analysis of the way in which a complicated entity is composed of various parts; *algebraic structure sense* can be viewed as the capacity to recognize parts of an expression or equation and analyze how these parts are organized. The Common Core State Standards for Mathematics explicitly call for students to learn to use structure to "unpack" the meanings of expressions; for example, students are asked to "Interpret complicated expressions by viewing one or more of their parts as a single entity" (NGA & CCSSO, 2010). I take as a premise the assumption that students are more likely to acquire algebraic structure sense if their teachers have developed this sense themselves and have the disposition to make structure explicit in algebra instruction.

At the 2016 Annual AMTE Conference, I shared some tasks that I created to help secondary mathematics teachers build algebraic structure sense. These tasks were developed for *Look Deep, Look Wide, Look Far!*, a mathematics course for inservice middle and high school mathematics teachers, and used with teachers in summer professional development programs in 2014 and 2015. The tasks highlight various skills that make use of structure sense, such as

- interpreting expressions that represent real-world quantities by "reading" their parts and noticing how the parts are put together,
- identifying properties of functions (such as domain, range, and increasing/decreasing behavior) using the structure of the expressions used to define them, and
- using substitution to replace complicated parts of equations with single variables, making them easier to solve.

Project Aspire, a collaboration between Arizona State University and the University of California-Berkeley, has developed an assessment of teachers' mathematical meanings for secondary teaching; this assessment includes several items related to algebraic structure (Musgrave, Hatfield & Thompson, 2015). On this assessment, teachers in the 2014 professional development program showed significant growth on an item that requires using structure to rewrite and simplify an algebraic equation. Growth on some other algebraic structure items was not statistically significant; however, on some of these items, several teachers provided higher-scoring responses on the post-test than on the pre-course assessment, while no teachers provided lower-scoring responses.

I would like to encourage mathematics teacher educators who may wish to use the algebraic structure tasks from *Look Deep, Look Wide, Look Far!*

Contact me directly at cody.patterson@utsa.edu.

Hoch, M., & Dreyfus, T. (2004). Structure sense in high school algebra: The effect of brackets. In *Proceedings of the 28th Conference of the International Group for the Psychology of Mathematics Education* (Vol. 3, pp. 49-56). Bergen, Norway.

Musgrave, S., Hatfield, N., & Thompson, P. W. (2015). Teachers' meanings for the substitution principle. In Fukawa-Connelly (Ed.), *Proceedings of the 18th Meeting of the MAA Special Interest Group on Research in Undergraduate Mathematics Education.* Pittsburgh, PA: RUME.

National Governors Association Center for Best Practices, Council of Chief State School Officers (2010). *Common Core State Standards for Mathematics.* Washington, D.C.: National Governors Association Center for Best Practices, Council of Chief State School Officers.

Session Title: **Flipped Learning: Enhancing Prospective Teachers' Engagement by Embedding Questions in Videos**

Presenter: Kien Hwa Lim, University of Texas, El Paso

The flipped model is effective if students are intellectually engaged in the math videos they watch. This research study investigates the effect of embedding questions into online videos, via EdPuzzle.com, on prospective teachers' learning of geometry and measurement concepts.

The flipped model has gained much interest among teachers and educators. In flipped learning, knowledge acquisition happens outside class, typically through instructional videos. Learning is more effective if students are intellectually engaged in the math videos they watch. Edpuzzle.com allows teachers to embed questions into the videos assigned for students to watch at their own pace. Questions could be embedded for students to (a) draw on their prior knowledge, (b) apply or recall what they should have just learned, (c) think about the problem posed in the video, or (d) make a prediction. A study was conducted to investigate the effect of embedding questions on student learning. This study involves 41 preservice 4-8 math teachers enrolled in two hybrid sections of the Geometry and Measurement course. In each section, about half of the students watched videos with embedded questions (19 in the Q-group) and the other half without (22 in the P-group). Preliminary results show that both groups showed an improvement in the pre-post assessments but there was no significant difference between the two groups.

Session Title: **Authority Dynamics and Group Norms of Preservice Middle School Teachers During Group Work Pencasts**

Presenter: Daniel Leonardo Rios, Texas A&M University, Commerce
Rebecca Anne Dibbs, Texas A&M University, Commerce

Female students are most likely to give up on mathematics during middle school; their persistence is influenced by their teachers' beliefs about mathematics. This case study examined the gendered discourse of preservice middle school teachers in a PBL pre-calculus course.

Since the research project we submitted to AMTE was Daniel Rios' undergraduate honors thesis, we decided to apply to the first poster session offered at the national conference. Since Daniel was the only undergraduate presenter at the national conference and this was Daniel's first presentation, standing by a poster seemed less intimidating than a talk. There was a small overlap between the poster session and the last set of scheduled talks, but once that time conflict ended the poster session was packed for the rest of the time. The most common question asked was, "What's a Pencast?" Although we had a Pencast ready to demonstrate, the room was too loud for people to hear the discussion. Several people offered valuable suggestions to refine the coding dictionary as analysis moves forward.

Continued…

The poster session itself was an overview of preliminary results from a discourse analysis of students' group work and discussion using Pencasts - videos made by the Livescribe Smartpens by recording audio and syncing it with what is being written in real time. Preliminary results, synthesized from one selected group's time together during the first unit, showed that Samantha initially gave more access to the conversation to someone with a higher degree of social influence, specifically Martin. However, because each group was given only one notebook and this in-class group work made up a majority of their grade, students had the initiative to discuss the math and thus reveal their content knowledge, and in turn influencing their content authority. Through this process and over the group's time, Samantha and others began to give more access to the conversation to students who had a high degree of content authority rather than a high degree of social influence. We found that limiting students to one notebook and Smartpen per group helped cause this change in authority patterns.

The best experience for us at AMTE was the journal sessions. After signing up for a 15 minute session and submitting an outline several months ago, prospective authors were able to sit down with two members of the editorial board of a target journal, discuss the prospectus, refine the topic, and in some cases get an idea of how quickly the publication should be submitted. I met with CITE about the use of educational technology to build classroom community in a pre-service middle mathematics teacher content course, and Daniel met with the Connections newsletter. And, of course, as a STaR Fellow, it was wonderful to see my cohort again and meet the 2016 STaRs.

Contact: Rebecca Dibbs Rebecca.Dibbs@tamuc.edu

Session Title: **Inquiry-based Instruction: How Novice Teachers Take Up the Core Practice of Launching a Task**

Presenter: Dawn Marie Woods, Southern Methodist University

This presentation uses qualitative evidence to showcase how a learning cycle, grounded in a situated perspective of learning, enables novice mathematics teachers to take up the core practice of launching an inquiry-based task.

As novice teachers begin their teaching careers, they are highly likely to teach in the way that they were taught. However, mathematics research and reform requires teachers to shift their thinking so that they provide students with opportunities to be engaged in solving and discussing tasks that promote reasoning and problem solving. One way to support novice teachers in shifting their thinking about mathematics instruction is to provide support that enables novice teachers to take up core practices. This presentation used qualitative evidence to showcase how a learning cycle, grounded in a situated perspective of learning, enabled novice mathematics teachers to take up the core practice of launching an inquiry-based task.

The findings describe how a curriculum designed around a teacher learning cycle has the potential to enable novice mathematics teachers to take up core practices. In summary, we found that many novice teachers want to implement core practices, but struggle with enactment. Here, fast-paced curriculum, meeting the needs of struggling learners, and other demands that are placed on teachers hinder enactment. We found that structuring class time for novice teachers to directly work on problems of practice has the potential to increase the implementation of core practices, which could ultimately increase student learning.

Contact: Dawn Marie Woods dwoods@mail.smu.edu

2017 AMTE Annual Conference
Feb. 9-11, 2017
Orlando, FL

Proposals Due: May 15, 2016
See website for more details: www.amte.net

Stay Tuned… More AMTE 2016 Session Highlights in our Summer Issue

---

Come Join Us at the
2016 Conference for the Advancement of Mathematics Teaching (**CAMT**)

June 29-July 1, 2016
San Antonio, TX

AMTE-TX will host a Mathematics Teacher Education Strand at CAMT 2016 in San Antonio. There will be four sessions on Wednesday, June 29, and four more on Thursday, June 30.

This year, our Business Meeting will be held at 3:30 p.m. on Wednesday, June 29, and will not conflict with any other sessions.

MARK YOUR CALENDARS!

AMTE-TX Fall Conference
Sept. 23-24, 2016
Abilene Christian University, Abilene, TX

Friday – Reception
Saturday – Conference Sessions

Submit a proposal! Visit the AMTE-TX website http://www.amte-tx.org for details.

Research Council on Mathematics Learning (RCML)
43rd Annual Conference

Shining a Light on Mathematics Learning

February 25-27, 2016
Orlando, FL

Texas Educators in Sunny Florida…

Sessions Presented by Texas Educators: Structural Connections of Base-10 Numbers and Binomials Using an Area Model; Designing and Teaching Courses to Satisfy K-8 Certifications; One on One: What I learned from Teaching in a Specialized Private School; Examining Teacher Preparation Through the Lens of Transfer of Learning; Formative Assessment Strategies and Student Mathematics Achievement; Online Interactive Math: Does it Enhance Pre-service Teachers' Knowledge?; Algeblocks to Image Integer and Binomial Multiplication; Examining Preservice Teachers' Culturally Relevant Teaching; Integrating Algebra and Literature in a Mathematics Education Course; Mindset and Mathematics; Let's Get Graphic! Learning About Student Understanding with Frayer Models…

Congratulations Sarah!
RCML Memorial Scholarship Recipient

… What Went Wrong: Pre-service Teachers' Reflections on Lesson Planning; Role of Support Structure in the Success of Developmental Math Programs; Guided Reinvention of Sequence Convergence: A Study of Two Students; Framework for Assessing College Students' Duality Conception of Infinity; Examining an Instrument Designed to Measure the Quality of Instruction.

RCML seeks to stimulate, generate, coordinate, and disseminate research efforts to understand and/or influence factors that affect mathematics learning.

Upcoming Conferences 2016

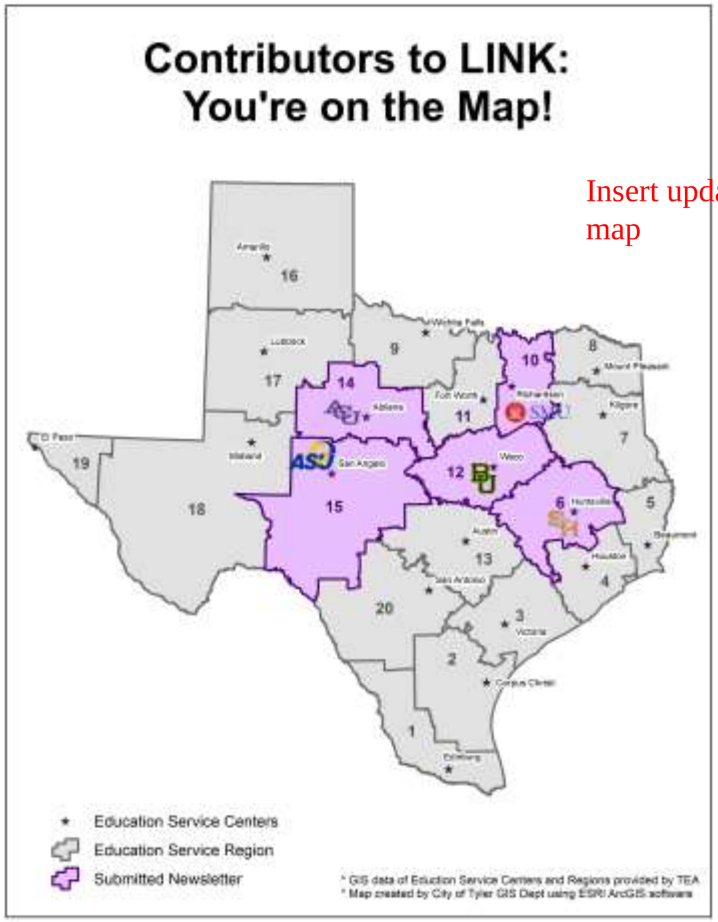
Mar.31-Apr.2	MAA – Texas Section	Nacogdoches, TX
Apr. 8-12	AERA	Washington, DC
Apr. 11-13	NCTM Research Conference	San Francisco, CA
Apr. 11-13	NCSM Annual Meeting	San Francisco, CA
Jun.29-Jul.1	CAMT	San Antonio, TX
July 24-31	ICME	Hamburg, Germany
Aug. 3-7	PME Annual Conference	Szeged, Hungary
Sept. 23-24	AMTE-TX	Abilene, TX
Oct. 20-22	SSMA Annual Convention	Phoenix, AZ
Oct. 26-28	NCTM Regional	Phoenix, AZ
Oct. 31-Nov.2	NCTM Regional	Philadelphia, PA
Nov. 3-6	PME-NA	Tucson, AZ
Nov. 5	RGVCTM Conference	Edinburg, TX
Nov. 16-18	NCTM Regional	St. Louis, MO
Nov. 17-20	AMATYC	Denver, CO

Call for Articles!
Call for Photo Journals!

The AMTE-TX *Link* Summer Issue Needs You!

To Celebrate the Work of MTE's in Texas!

What's happening in your part of Texas?



Insert updated map

The map above highlights the cumulative contributions of mathematics teacher educators from different educational service areas of Texas who contributed to LINK. In the next issue, we will continue to feature the work of MTE's from various regions of Texas, i.e. Your Work! Share lessons, activities, or students' mathematical thinking. These manuscripts can illustrate mathematical best practices or standards for mathematical practice/processes via an article or photo journal or short musing.

Articles: Submit by June 10, 2016. Manuscripts can be 2 - 4 pages in length. Contact co-editors for blind peer-reviewed criteria or visit our AMTE-TX website.

NEW! Photo Journals: Submit by July 8, 2016. Photos (3-4) and a brief description/summary (1 - 2 paragraphs) that connect the photos to mathematical best practices or standards for mathematical practice/processes.

NEW! News Section: Submit by July 8, 2016. Brief news notices – promotions, articles published, conference presentations, grants attained, offices held, advocacy information, etc. – items of interest to help build a strong MTE network in Texas.

We want to see your region highlighted on the map in the spring issue. Let's "cover" Texas!

Submit articles and photo journals to
Carole Hayata: chayata@smu.edu or
Kristina Gill: kgill@wtamu.edu

AMTE-TX Officers

President 2014-2016

Dusty Jones, Sam Houston State University

President-Elect 2015-2016

Sarah Quebec Fuentes, Texas Christian Univ.

Secretary 2015-2018

Beth Bos, Texas State University

Treasurer 2014-2017

Lymeda Singleton, TAMU-Commerce

Members-at-Large

Sarah Pratt, University of North Texas 2013-2016

Theresa Jorgensen, UT Arlington 2014-2017

Kristina Gill, West Texas A&M Univ. 2015-2018

Newsletter co-Editors 2014-2017

Carole Hayata, Southern Methodist University

Kristina Gill, West Texas A&M University

Notes from the Editorial Staff:

Call for Articles & Photo Journals - Summer 2016 Newsletter: Please submit articles by June 10 and photo journals by July 8 for consideration.

Call for News: Please submit by July 8 2016 for LINK's news section about our membership. Recent promotions? Articles published? Conference presentations? Mathematics education conferences attended? Resources? Let's get the word out to build a AMTE-TX network!

Submit articles, photo journals, and news to:

Carole Hayata: chayata@smu.edu or

Kristina Gill: kgill@wtamu.edu

MEMBERSHIP

AMTE-TX is moving its official membership year to a cycle from July 1 through June 30. Typically, members join or renew memberships at CAMT in June or July, or in conjunction with the AMTE-TX Fall Conference in September. Encourage your colleagues to join!

You can access information about dues and the membership form at our website, http://www.amte-tx.org. After completing the form, return the form and dues to:

Lymeda Singleton, Treasurer
TAMU-Commerce
1445 Clubhill Drive
Rockwall, TX 75087

Questions? Email:
Lymeda.Singleton@tamuc.edu

Dusty, please add like us on FaceBook button here